Training Report on Building the Capacity of Public Sector Laboratories in Afghanistan in order to improve their Regulatory Capacity for Food Fortification and Food Safety

For
Drug & Food Quality Control lab, Ministry of Public health (MoPH), Central Lab, Kabul

Central Veterinary Diagnostic & Research Laboratory (CVDRL)
Ministry Of Agriculture, Irrigation & Livestock (MAIL), Kabul

&

Food Analysis Laboratory, Ministry of Public Heath, Nengerhar

Under Project
Building the Capacity of Public Sector Laboratories in Afghanistan in order to improve their Regulatory Capacity for Food Fortification and Food Safety

Submitted to
Global Alliance for Improved Nutrition
Kabul, Afghanistan

Conducted by
Assocom Institute of Bakery Technology & Management (AIBTM)
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Email: rajkapoor@assocom-india.com, rajkapoor@vsnl.com
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Executive Summary

Assocom Institute of Bakery Technology & Management, a unit of Assocom India Pvt. Ltd. in association with global alliance for improved nutrition (gain) had conducted the training under project titled “Building the Capacity of Public Sector Laboratories in Afghanistan in order to improve their Regulatory Capacity for Food Fortification and Food Safety”. This project comprises of Laboratory management system based on the principle of ISO/IEC 17025: 2005 and food safety and Quality control of fortified wheat flour, Salt and Fat & Oil; specifies the general requirements for the competence to carry out tests. It covers testing of food articles using standard methods complies IS/AACC/AOAC/APHA to strengthen the Capacity and Skills for micronutrient, food quality and safety analysis for Drug & Food Quality Control lab, Ministry of Public health (MoPH), Central Lab, Kabul, Central Veterinary Diagnostic & Research Laboratory (CVDRL), Ministry Of Agriculture, Irrigation & Livestock (MAIL), Kabul & Food Analysis Laboratory, Ministry of Public Heath, Nengerhar.

This training had been conducted in three phases from the period of March – October, 2017. Accordingly, topics were divided as follow:

First phase of training: Laboratory management system based on ISO/IEC 17025:2005; this training helps to understand the quality management system requirements that are relevant for testing and calibration services, administrative and technical competence. Growth in the use of management systems would increased the need to ensure that laboratories can operate a quality management system that is seen as compliant with ISO 9001 as well as demonstrate technical competency. Therefore, ISO 17025 has been incorporate all the ISO 9001 requirements that are relevant to the scope of testing and calibration services, as well as specifying the technical requirements for technical competence.

This laboratory management system had incorporated an overall system for technical and quality management, which results in benefits observed in daily laboratory practices. Technical requirements were updated to include the addition of formal personnel training plans and detailed records, method development and validation procedures, measurement of method uncertainty, and a defined equipment calibration and maintenance program. In addition, a stronger definition of the sample
Preparation process was documented to maintain consistency in sampling, and a more rigorous quality control monitoring program was implemented for chemistry and microbiology. Management quality improvements focused on document control. As a result of this participants successfully able to made Quality manual for the MoPH lab along with 65 Quality system procedures and Standard method procedures.

Second and Third phase of Training: Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour had been covered which comprises to various analysis like Proximate, macronutrient and quality analysis, Micro nutrient testing (Vitamin A, B1, B12, D, Folic acid, Iron, Zinc and Iodine), Food safety parameters includes (Micro-biological tests: *E.coli, Bacillus cereus, Salmonella, Listeria, S.aureus*, Total Plate Count & Yeast and Mold Count.) and Mycotoxin (Total Aflatoxin and Ochratoxin). During these phases several challenges and gaps were faced like instruments fixation, no power backup, Chemicals and reagents are not available and ventilation etc. which need to be filled for the smooth conduct of these analysis. However, training has been entired with recommendation and gap to be filled for the smooth conduct mentioned in detailed report.
Training Report

Project: Building the Capacity of Public Sector Laboratories in Afghanistan in order to improve their Regulatory Capacity for Food Fortification and Food Safety

Consultant: Assocom Institute of Bakery Technology & Management (AIBTM), a unit of Assocom India Pvt. Ltd., India

Duration of Training: March – October, 2017

Trainer: Ms. Swati

Topics Covered:

- Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour:
  - Proximate and quality analysis.
  - Micro nutrient testing (Vitamin A, B1, B12, D, Folic acid, Iron, Zinc and Iodine)
  - Food safety parameters includes:
    - Micro-biological tests: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count & Yeast and Mold Count.
    - Mycotoxin includes: Total Aflatoxin and Ochratoxin
**List Of Participants:**

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name</th>
<th>Position</th>
<th>Topics attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Ms. Rabia Meraj</td>
<td>Food analyst, food chemical, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>2</td>
<td>Ms. Najia Ahmadzad</td>
<td>Food analyst, food chemical, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>3</td>
<td>Ms. Nigeena Noorzai</td>
<td>Food analyst, Microbiology, MoPH Kabul</td>
<td>ISO 17025:2005, Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, Saureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>4</td>
<td>Ms. Malalai Sarwary</td>
<td>Food analyst, Microbiology, MoPH Kabul</td>
<td>ISO 17025:2005, Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, Saureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>5</td>
<td>Mohd. Aman</td>
<td>Food analyst, Microbiology, MoPH Kabul</td>
<td>ISO 17025:2005, Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, Saureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>6</td>
<td>Ms. Fatima</td>
<td>Analyst, Water Department, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>7</td>
<td>Mohd. Fahim</td>
<td>Analyst, Water Department, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>8</td>
<td>Ms. Lailuma</td>
<td>Food analyst, food chemical, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>9</td>
<td>Ghulam Naqshband</td>
<td>Analyst, Water Department, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>10</td>
<td>Basir Ahmad</td>
<td>General Manager, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>No.</td>
<td>Name</td>
<td>Role/Position</td>
<td>Description</td>
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</tr>
<tr>
<td>12</td>
<td>Salim Jawid</td>
<td>Manager, Food Toxicology, MoPH Kabul</td>
<td>ISO 17025:2005, Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>15</td>
<td>Ms. Nadera</td>
<td>Food analyst, food chemical, MoPH Kabul</td>
<td>Food safety and quality control of fortified foods for Salt, Fats &amp; Oil and Wheat flour</td>
</tr>
<tr>
<td>16</td>
<td>Ms. Fariba</td>
<td>Analyst, Drug section, MoPH Kabul</td>
<td>Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>17</td>
<td>Ms. Mastura</td>
<td>Analyst, Drug section, MoPH Kabul</td>
<td>Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>18</td>
<td>Mohd. Haroon</td>
<td>Analyst, drug section, MoPH Kabul</td>
<td>Microbiological test: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count &amp; Yeast and Mold Count, Mycotoxins, Vitamin B12 and Folic acid</td>
</tr>
<tr>
<td>19</td>
<td>Dr. Soraya</td>
<td>Quality Manager, CVDRL, MAIL, Kabul</td>
<td>Laboratory Quality management system (ISO/IEC 17025:2005)</td>
</tr>
<tr>
<td>20</td>
<td>Dr. Mohd. Afzal</td>
<td>Analyst, CVDRL, MAIL, Kabul</td>
<td>Laboratory Quality management system (ISO/IEC 17025:2005)</td>
</tr>
<tr>
<td>21</td>
<td>Dr. Mohd. Aref</td>
<td>Analyst, CVDRL, MAIL, Kabul</td>
<td>Laboratory Quality management system (ISO/IEC 17025:2005)</td>
</tr>
<tr>
<td>22</td>
<td>Ms. Arzo Adel</td>
<td>Analyst, CVDRL, MAIL, Kabul</td>
<td>Laboratory Quality management system (ISO/IEC 17025:2005)</td>
</tr>
<tr>
<td>23</td>
<td>Dr. Shafiullah azimi</td>
<td>Analyst, CVDRL, MAIL, Kabul</td>
<td>Laboratory Quality management system (ISO/IEC 17025:2005)</td>
</tr>
</tbody>
</table>
**Daily Work Report:** Training has been covered in 3 Phases and details has been in mentioned below Tables:

- **Table 1:** First phase of Growth: Laboratory Quality management system (ISO/IEC 17025:2005)
- **Table 2:** Second phase of Growth: Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour:
  - Proximate and quality analysis.
  - Micro nutrient testing (Iodine)
  - Micro-biological tests: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count & Yeast and Mold Count.
- **Table 3:** Third Phase of Growth: Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour:
  - Micro nutrient testing (Vitamin A, B1, B12, D, Folic acid, Iron, Zinc and Iodine)
  - Micro-biological tests: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count & Yeast and Mold Count.
  - Mycotoxin includes: Total Aflatoxin and Ochratoxin
Table 1: First phase of Growth: Laboratory Quality management system (ISO/IEC 17025:2005).

**Duration:** 4 March, 2017 – 02 April, 2017

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activity Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 4, 2017</td>
<td>Saturday</td>
<td>Arrived Kabul and reported to Gain office&lt;br&gt;Post arrival security briefing by Mr. Kanishka (Security Manager)</td>
</tr>
<tr>
<td>March 5, 2017</td>
<td>Sunday</td>
<td>Had a discussion on Assessment and training with Dr. Sediqi and Dr. Wahadati at GAIN office&lt;br&gt;Moved to MoPH central lab with Dr. Sediqi for the Assessment</td>
</tr>
<tr>
<td>March 6, 2017</td>
<td>Monday</td>
<td>Assessment of MoPH central lab, Kabul</td>
</tr>
<tr>
<td>March 7, 2017</td>
<td>Tuesday</td>
<td>Visited Gain office and had discussion on assessment of MAIL with Dr. Sediqi&lt;br&gt;Moved to MAIL for assessment with Dr. Sediqi</td>
</tr>
<tr>
<td>March 8, 2017</td>
<td>Wednesday</td>
<td>Assessment of CVDRL, MAIL, Kabul, Afghanistan</td>
</tr>
<tr>
<td>March 9, 2017</td>
<td>Thursday</td>
<td>Travelled to Jalalabad and Assessment of MoPH lab, Jalalabad with Mr. Raj Kapoor, Dr. Sediqi and Dr. Furmuly</td>
</tr>
<tr>
<td>March 10, 2017</td>
<td>Friday</td>
<td>Assessment report Compilation</td>
</tr>
<tr>
<td>March 11, 2017</td>
<td>Saturday</td>
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<tr>
<td>March 12, 2017</td>
<td>Sunday</td>
<td>First day of training (Laboratory management system based on ISO/IEC 17025); Pre-assessment of Laboratory personnel of MoPH Central lab, Jalalabad at MoPH central lab, Kabul&lt;br&gt;Had Meeting with General director of CVDRL, MAIL</td>
</tr>
<tr>
<td>March 13, 2017</td>
<td>Monday</td>
<td>Training on laboratory safety procedures and safety labels in laboratory</td>
</tr>
<tr>
<td>March 14, 2017</td>
<td>Tuesday</td>
<td>Training on laboratory safety procedures and safety labels in laboratory (Cont.)</td>
</tr>
<tr>
<td>March 15, 2017</td>
<td>Wednesday</td>
<td>Practical session on laboratory safety procedures and safety labels at MoPH central lab, Kabul</td>
</tr>
<tr>
<td>March 16, 2017</td>
<td>Thursday</td>
<td>Weekend and Preparation for training and scope of work</td>
</tr>
<tr>
<td>March 17, 2017</td>
<td>Friday</td>
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<tr>
<td>March 18, 2017</td>
<td>Saturday</td>
<td>Introduction to Laboratory management system (ISO/IEC 17025: 2005) and Discussion on</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Activity Description</td>
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</tr>
<tr>
<td>March 19, 2017</td>
<td>Sunday</td>
<td>Clause No. 4: Management requirements, Cl. No. 4.1 Organisation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clause No. 4.2: Management system, Cl. No. 4.3 Document Control, Cl. No. 4.4 review of request tender and request</td>
</tr>
<tr>
<td>March 20, 2017</td>
<td>Monday</td>
<td>Clause No. 4.2: Management requirement (cont.) Cl. No. 4.5 Subcontracting, Cl. No. 4.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Purchase services and supplies, Cl. No. 4.7 Service to customer, Cl. No. 4.8 Complaints, Cl. No. 4.9 Control of nonconformance, Cl. No. 4.10 Improvements</td>
</tr>
<tr>
<td>March 21, 2017</td>
<td>Tuesday</td>
<td>Holiday in Afghanistan on New Year, Preparation of Quality Manual and upcoming training</td>
</tr>
<tr>
<td>March 22, 2017</td>
<td>Wednesday</td>
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<tr>
<td>March 23, 2017</td>
<td>Thursday</td>
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<tr>
<td>March 24, 2017</td>
<td>Friday</td>
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<tr>
<td>March 25, 2017</td>
<td>Saturday</td>
<td>Brief Recap, Clause No. 4.11 Corrective actions, Cl. No. 4.12 Preventative action, Cl. No. 4.13 Control of records, Cl. No. 4.15 Internal audits and Clause no. 4.15 – Management review</td>
</tr>
<tr>
<td>March 26, 2017</td>
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<td>Clause No. 5 Technical requirements, Cl. No. 5.1 – General requirements, Cl. No. 5.2 – Personnel and Cl. No. 5.3 – Accommodation and environment</td>
</tr>
<tr>
<td>March 27, 2017</td>
<td>Monday</td>
<td>Clause No. 5 Technical requirements, Cl. No. 5.4 – Test and calibration methods and method validations</td>
</tr>
<tr>
<td>March 28, 2017</td>
<td>Tuesday</td>
<td>Clause No. 5 Technical requirements, Cl. No. 5.5 – Equipments and Cl. No. 5.6 – Measurement Traceability</td>
</tr>
<tr>
<td>March 29, 2017</td>
<td>Wednesday</td>
<td>Clause No. 5 Technical requirements, Cl. No. 5.7 – Sampling and Cl. No. 5.8 – Handling of test and Calibration items, Cl. No. 5.9 – Assuring the Quality of test and calibration results</td>
</tr>
<tr>
<td>March 30, 2017</td>
<td>Thursday</td>
<td>Weekend, Preparation of Quality Manual and upcoming training</td>
</tr>
<tr>
<td>March 31, 2017</td>
<td>Friday</td>
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<tr>
<td>April 01, 2017</td>
<td>Saturday</td>
<td>Clause No. 5 Technical requirements, Cl. No. 5.10 – reporting of results and Introduction to Accreditation, how laboratory approach for Accreditation. Went MAIL with Dr. Afzal for practical assistance in microbiology department.</td>
</tr>
<tr>
<td>April 02, 2017</td>
<td>Sunday</td>
<td>Brief Recap of overall training and Post assessment of Participants</td>
</tr>
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</table>
Table 2: Second phase of Growth: Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour:

- Proximate and quality analysis.
- Micro nutrient testing (Iodine)
- Micro-biological tests: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count & Yeast and Mold Count.

**Duration:** 14 May – 20 June, 2017
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Work done</th>
</tr>
</thead>
<tbody>
<tr>
<td>13/05/17</td>
<td>Saturday</td>
<td>Travelled to Kabul, reported to GAIN</td>
</tr>
<tr>
<td>14/05/17</td>
<td>Sunday</td>
<td>Meeting with Dr. Wahadati and Dr. Sediqi, later went to MoPH for meeting with Dr. Furmuly on next phase training schedule</td>
</tr>
<tr>
<td>15/05/17</td>
<td>Monday</td>
<td>• Brief review on Quality management system</td>
</tr>
<tr>
<td>16/05/17</td>
<td>Tuesday</td>
<td>• Basic analytical approach to food analysis standards solution preparations w/w, w/v &amp; v/v and media preparation</td>
</tr>
<tr>
<td>17/05/17</td>
<td>Wednesday</td>
<td>• Sop Preparation on various analytical method by participants</td>
</tr>
<tr>
<td>18/05/17</td>
<td>Thursday</td>
<td>Weekend (preparation for training, Quality Manual and sop preparation)</td>
</tr>
<tr>
<td>19/05/17</td>
<td>Friday</td>
<td></td>
</tr>
<tr>
<td>20/05/17</td>
<td>Saturday</td>
<td>• Proximate analysis of wheat flour (Moisture, Ash, Acid insoluble ash, Gluten, Protein, Fat, Fiber, Alcoholic Acidity, pH)</td>
</tr>
<tr>
<td>21/05/17</td>
<td>Sunday</td>
<td>• Basics of microbiological methods</td>
</tr>
<tr>
<td>22/05/17</td>
<td>Monday</td>
<td>• Enumeration of Total Plate Count</td>
</tr>
<tr>
<td>23/05/17</td>
<td>Tuesday</td>
<td>• Enumeration of Yeast and mold count</td>
</tr>
<tr>
<td>24/05/17</td>
<td>Wednesday</td>
<td>•</td>
</tr>
<tr>
<td>25/05/17</td>
<td>Thursday</td>
<td>Weekend (preparation for training, Quality manual, Documentation and sop preparation)</td>
</tr>
<tr>
<td>26/05/17</td>
<td>Friday</td>
<td></td>
</tr>
<tr>
<td>27/05/17</td>
<td>Saturday</td>
<td>• Proximate analysis of wheat flour and fats &amp; oil, salt etc. performed by lab personnel independently under supervision</td>
</tr>
<tr>
<td>28/05/17</td>
<td>Sunday</td>
<td>• Revival of mother culture and its identification</td>
</tr>
<tr>
<td>29/05/17</td>
<td>Monday</td>
<td>• Preparation for sub culturing and maintenance of Culture</td>
</tr>
<tr>
<td>30/05/17</td>
<td>Tuesday</td>
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<tr>
<td>31/05/17</td>
<td>Wednesday</td>
<td>• May 27, 2017 holiday due to starting of Ramadan.</td>
</tr>
<tr>
<td>01/06/17</td>
<td>Thursday</td>
<td>Weekend (Documentation)</td>
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<tr>
<td>02/06/17</td>
<td>Friday</td>
<td></td>
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<tr>
<td>03/06/17</td>
<td>Saturday</td>
<td>• Proximate analysis of wheat flour and fats &amp; oil, salt etc. performed by lab personnel independently under supervision</td>
</tr>
<tr>
<td>04/06/17</td>
<td>Sunday</td>
<td>• Salt analysis : introduction to Salt and Quality parameters for salt analysis i.e Moisture, Matter insoluble in water, Total Chlorine and Iodine</td>
</tr>
<tr>
<td>05/06/17</td>
<td>Monday</td>
<td>•</td>
</tr>
<tr>
<td>06/06/17</td>
<td>Tuesday</td>
<td>• Detection and enumeration of E.coli, performed by lab personnel independently under supervision</td>
</tr>
<tr>
<td>07/06/17</td>
<td>Wednesday</td>
<td>• Sub culturing</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Events</td>
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<tr>
<td>----------</td>
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<tr>
<td>08/06/17</td>
<td>Thursday</td>
<td>Weekend, (preparation for training, Quality manual, Documentation and sop preparation)</td>
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<tr>
<td>09/06/17</td>
<td>Friday</td>
<td></td>
</tr>
<tr>
<td>10/06/17</td>
<td>Saturday</td>
<td>Introduction to Quality parameters of Fats and Oil like melting point, Saponification value, peroxide value</td>
</tr>
<tr>
<td>11/06/17</td>
<td>Sunday</td>
<td>Detection and enumeration of S. aureus; performed by lab personnel independently under supervision</td>
</tr>
<tr>
<td>12/06/17</td>
<td>Monday</td>
<td>Sub culturing</td>
</tr>
<tr>
<td>13/06/17</td>
<td>Tuesday</td>
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<tr>
<td>14/06/17</td>
<td>Wednesday</td>
<td>Weekend, (preparation for training, Quality manual, Documentation and sop preparation)</td>
</tr>
<tr>
<td>15/06/17</td>
<td>Thursday</td>
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</tr>
<tr>
<td>16/06/17</td>
<td>Friday</td>
<td></td>
</tr>
<tr>
<td>17/06/17</td>
<td>Saturday</td>
<td>Analysis of wheat flour, salt and Fats &amp; oil by Participants independently under the supervision</td>
</tr>
<tr>
<td>18/06/17</td>
<td>Sunday</td>
<td>Detection and enumeration of E.coli, TPC, Yeast &amp; mold count, S. aureus; performed by lab personnel independently under supervision</td>
</tr>
<tr>
<td>19/06/17</td>
<td>Monday</td>
<td></td>
</tr>
<tr>
<td>20/06/17</td>
<td>Tuesday</td>
<td></td>
</tr>
</tbody>
</table>
Table 3: Third Phase of Growth: Food safety and quality control of fortified foods for Salt, Fats & Oil and Wheat flour:

- Micro nutrient testing (Vitamin A, B1, B12, D, Folic acid, Iron, Zinc and Iodine)
- Micro-biological tests: E-coli, Bacillus cereus, Salmonella, Listeria, S.aureus, Total Plate Count & Yeast and Mold Count.
- Mycotoxin includes: Total Aflatoxin and Ochratoxin

Duration: 13 August – 11 October, 2017
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activity Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 13, 2017</td>
<td>Sunday</td>
<td>Review and discussion on Second phase training and problems while practicing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practice of other Quality parameters of Flour, salt and Fats &amp; Oil by participants under supervision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Review of microbiological analysis – media preparation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practice of other Quality parameters by participants under supervision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Review of microbiological analysis – Culture techniques – standard plate count technique – pour plate technique</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practice of other Quality parameters by participants under supervision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Review of microbiological analysis – Culture techniques – standard plate count technique – spread plate technique</td>
</tr>
<tr>
<td>August 17, 2017</td>
<td>Thursday</td>
<td>Weekend</td>
</tr>
<tr>
<td>August 18, 2017</td>
<td>Friday</td>
<td>Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>August 19, 2017</td>
<td>Saturday</td>
<td>Holiday</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>August 20, 2017</td>
<td>Sunday</td>
<td>- Qualitative analysis of Iron determination – theory and preparation of solution and performed by participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practice of other Quality parameters by participants under supervision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Review of microbiological analysis – Culture techniques – standard plate count technique – practiced by lab personnel</td>
</tr>
<tr>
<td>August 21, 2017</td>
<td>Monday</td>
<td>- Qualitative analysis of Iron determination – theory and preparation of solution and performed by participants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Practice of other Quality parameters by participants under supervision.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Review of microbiological analysis – Culture techniques – standard plate count technique</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Activities</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| August 22, 2017 | Tuesday     | • Quantitative analysis of Iron determination – theory on principle and solution preparation  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – Culture techniques – standard plate count technique – Streak culture technique, preparation of slants – performed by participants |
| August 23, 2017 | Wednesday   | • Quantitative analysis of Iron determination – solution preparation and standard solution preparation  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – Culture techniques – standard plate count technique – Streak culture technique, preparation of slants – performed by participants |
| August 24, 2017 | Thursday    | Weekend                                                                      |
| August 25, 2017 | Friday      | Preparation of standard operating procedure and preparation of upcoming training |
| August 26, 2017 | Saturday    | • Quantitative analysis of Iron determination – theory on procedure to follow: preparation of Sample for determination  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – gram staining and fungal staining |
| August 27, 2017 | Sunday      | • Quantitative analysis of Iron determination – performed by participants – preparation of sample for determination  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – gram staining and fungal staining -performed by participants |
| August 28, 2017 | Monday      | • Quantitative analysis of Iron determination – performed by participants – preparation of sample for determination  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – determination of total plate count in sample |
| August 29, 2017 | Tuesday     | • Quantitative analysis of Iron determination – performed by participants – preparation of sample for determination  
• Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – determination of total plate count in sample |
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 30, 2017</td>
<td>Wednesday</td>
<td>• Quantitative analysis of Iron determination – theory on UV – visible spectrophotometer and determination of sample &lt;br&gt; • Practice of other Quality parameters by participants under supervision. &lt;br&gt; • Review of microbiological analysis – determination of total plate count in sample</td>
</tr>
<tr>
<td>August 31, 2017</td>
<td>Thursday</td>
<td>Weekend &lt;br&gt; Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 01, 2017</td>
<td>Friday</td>
<td>Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 02, 2017</td>
<td>Saturday</td>
<td>Eid holiday &lt;br&gt; Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 03, 2017</td>
<td>Sunday</td>
<td>Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 04, 2017</td>
<td>Monday</td>
<td>• Quantitative analysis of Iron determination – calculation of iron, plotting of standard curve (on graph and excel method) and determination of unknown sample. &lt;br&gt; • Practice of other Quality parameters by participants under supervision. &lt;br&gt; • Review of microbiological analysis – determination of total plate count in sample – calculation and interpretation of results. &lt;br&gt; • Review of microbiological analysis – determination of yeast and mold count in sample.</td>
</tr>
<tr>
<td>September 05, 2017</td>
<td>Tuesday</td>
<td>• Quantitative analysis of Iron determination – performed by participants under supervision &lt;br&gt; • Practice of other Quality parameters by participants under supervision. &lt;br&gt; • Review of microbiological analysis – revival of freeze drying culture.</td>
</tr>
<tr>
<td>September 06, 2017</td>
<td>Wednesday</td>
<td>• Quantitative analysis of Iron determination – performed by participants under supervision &lt;br&gt; • Practice of other Quality parameters by participants under supervision. &lt;br&gt; • Review of microbiological analysis – maintenance of culture.</td>
</tr>
<tr>
<td>September 07, 2017</td>
<td>Thursday</td>
<td>Weekend &lt;br&gt; Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 08, 2017</td>
<td>Friday</td>
<td>Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 09, 2017</td>
<td>Saturday</td>
<td>Holiday &lt;br&gt; Preparation of standard operating procedure and preparation of upcoming training</td>
</tr>
<tr>
<td>September 10, 2017</td>
<td>Sunday</td>
<td>• Qualitative analysis of vitamin A determination in fats and oil – principal and preparation of solutions – principal and preparation of solutions and performed by participants &lt;br&gt; • Practice of other Quality parameters by participants under supervision. &lt;br&gt; • Review of microbiological analysis – practical performed by participants.</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Activities</td>
</tr>
<tr>
<td>-------------------</td>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>September 11, 2017</td>
<td>Monday</td>
<td>Qualitative analysis of vitamin A determination in wheat flour – principal and preparation of solutions. Practice of other Quality parameters by participants under supervision. Review of microbiological analysis – detection of pathogens (TPC, Y&amp;M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision.</td>
</tr>
<tr>
<td>September 12, 2017</td>
<td>Tuesday</td>
<td>Qualitative analysis of vitamin A determination in wheat flour – principal and preparation of solutions – performed by participants. Practice of other Quality parameters by participants under supervision. Review of microbiological analysis – detection of pathogens (TPC, Y&amp;M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision.</td>
</tr>
<tr>
<td>September 13, 2017</td>
<td>Wednesday</td>
<td>Qualitative analysis of vitamin A – performed by participants. Practice of other Quality parameters by participants under supervision. Review of microbiological analysis – detection of pathogens (TPC, Y&amp;M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision.</td>
</tr>
<tr>
<td>September 14, 2017</td>
<td>Thursday</td>
<td>Weekend Preparations of standard operating procedure and preparation of upcoming training.</td>
</tr>
<tr>
<td>September 15, 2017</td>
<td>Friday</td>
<td>Weekend Preparations of standard operating procedure and preparation of upcoming training.</td>
</tr>
<tr>
<td>September 16, 2017</td>
<td>Saturday</td>
<td>Quantitative analysis of vitamin A determination in wheat flour and other food – principal and preparation of solutions. Practice of other Quality parameters by participants under supervision. Review of microbiological analysis – detection of pathogens (TPC, Y&amp;M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision.</td>
</tr>
<tr>
<td>September 17, 2017</td>
<td>Sunday</td>
<td>Quantitative analysis of vitamin A determination in wheat flour and other food – principal and preparation of solutions and sample preparation – performed by participants. Practice of other Quality parameters by participants under supervision. Review of microbiological analysis – detection of pathogens (TPC, Y&amp;M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision.</td>
</tr>
<tr>
<td>Date</td>
<td>Day</td>
<td>Activity</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
</tbody>
</table>
| September 19, 2017 | Tuesday         | • Practice of other Quality parameters by participants under supervision.  
• Review of microbiological analysis – detection of pathogens (TPC, Y&M, E.coli and S. aureus) and maintenance of culture performed by participants under supervision. |
| September 20, 2017 | Wednesday       | Visited CVDRL lab for mycotoxin analysis and demonstration with MoPH participants.                                                                                                                                                                                                                                                                                        |
| September 21, 2017 | Thursday        | Weekend                                                                                                                                                                                                                                                                                                                                 |
| September 22, 2017 | Friday          | Preparation of standard operating procedure and preparation of upcoming training.                                                                                                                                                                                                                                                                                         |
| September 23, 2017 | Saturday        | Analysis of mycotoxins – total aflatoxins, M1 and ochratoxin by elisa kit method – theory & principle of Elisa and Mycotoxins; and method to perform test.                                                                                                                                                                                                 |
| September 24, 2017 | Sunday          | Determination of Vitamin B12 by microbiological method (theory) - principle and preparation of solutions, media and other standard reagents.                                                                                                                                                                                                                               |
Visited CVDRL for procurement of reference culture and other media                                                                                       |
| September 26, 2017 | Tuesday         | Determination of folic acid by microbiological method (theory) - principle and preparation of solutions, media and other standard reagents.                                                                                                                                                                                                                     |
| September 27, 2017 | Wednesday       | Determination of folic acid by microbiological method (theory) – procedure to perform test and its calculations.                                                                                                                                                                                                                                                                          |
| September 28, 2017 | Thursday        | Weekend                                                                                                                                                                                                                                                                                                                                 |
| September 29, 2017 | Friday          | Preparation of standard operating procedure and preparation of upcoming training.                                                                                                                                                                                                                                                                                         |
| September 30, 2017 | Saturday        | • Determination of Vitamin D by HPLC (theory) – overview of HPLC instrument and method involved for vitamine D analysis.  
• Preparation of media for Bacillus, salmonella and listeria                                                                                                                   |
| October 01, 2017   | Sunday          | Religious holiday  
Preparation of standard operating procedure and preparation of upcoming training.                                                                                                                                                                                                                                                                               |
<p>| October 02, 2017   | Monday          | • Determination of Vitamin B1 by HPLC (theory) – principle and procedure of... |</p>
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>October 03, 2017</td>
<td>Tuesday</td>
<td>Determination of Zinc, Detection of Bacillus, salmonella and listeria in sample, Visited CVDRL for collection of reference culture</td>
</tr>
<tr>
<td>October 04, 2017</td>
<td>Wednesday</td>
<td>Practice of analysis (Proximate and micronutrient) by participants under supervision, Detection of Bacillus, salmonella and listeria in sample, Sub-culturing of reference culture.</td>
</tr>
<tr>
<td>October 05, 2017</td>
<td>Thursday</td>
<td>Govt. holiday, Preparation of standard operating procedure</td>
</tr>
<tr>
<td>October 06, 2017</td>
<td>Friday</td>
<td>Preparation of standard operating procedure and preparation of upcoming training.</td>
</tr>
<tr>
<td>October 07, 2017</td>
<td>Saturday</td>
<td>Practice of analysis (Proximate and micronutrient) by participants under supervision, Detection of Bacillus, salmonella and listeria in sample</td>
</tr>
<tr>
<td>October 08, 2017</td>
<td>Sunday</td>
<td>Practice of analysis (Proximate and micronutrient) by participants under supervision, Detection of E. coli by MPN Method, S. aureus, Bacillus, salmonella and listeria in sample</td>
</tr>
<tr>
<td>October 09, 2017</td>
<td>Monday</td>
<td>Practice of analysis (Proximate and micronutrient) by participants under supervision, Detection of Bacillus, salmonella and listeria in sample, Endospore staining and biochemical test.</td>
</tr>
<tr>
<td>October 10, 2017</td>
<td>Tuesday</td>
<td>Practice of analysis (Proximate and micronutrient) by participants under supervision, Detection of Bacillus, salmonella and listeria in sample – Practice by participants</td>
</tr>
<tr>
<td>October 11, 2017</td>
<td>Wednesday</td>
<td>Evaluation of Participants.</td>
</tr>
</tbody>
</table>
**Evaluation of Participants:** Pre-assessment and Post-assessment of the participants had been conducted for all three phases of training to know Participants knowledge in Laboratory management system based in ISO/IEC 17025:2005, Food safety and Quality control of Fortified food. A result of Pre-assessment and Post Assessment has been listed below for the reference:

<table>
<thead>
<tr>
<th>S.no.</th>
<th>Name of Participants</th>
<th>Pre assessment Percentage score (%)</th>
<th>Post assessment - First phase of training Percentage score (%)</th>
<th>Post assessment – Second phase of training Percentage score (%)</th>
<th>Post assessment – Third phase of training Percentage score (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Ms. Rabia Meraj</td>
<td>40</td>
<td>90</td>
<td>92.5</td>
<td>87.5</td>
</tr>
<tr>
<td>2.</td>
<td>Ms. Najia Ahmadzad</td>
<td>46</td>
<td>85</td>
<td>95</td>
<td>65</td>
</tr>
<tr>
<td>3.</td>
<td>Ms. Nigeena Noorzai</td>
<td>40</td>
<td>Absent</td>
<td>85</td>
<td>72.5</td>
</tr>
<tr>
<td>4.</td>
<td>Ms. Malalai Sarwary</td>
<td>40</td>
<td>80</td>
<td>90</td>
<td>77.5</td>
</tr>
<tr>
<td>5.</td>
<td>Mohd. Aman</td>
<td>33</td>
<td>85</td>
<td>90</td>
<td>85</td>
</tr>
<tr>
<td>6.</td>
<td>Ms. Fatima</td>
<td>40</td>
<td>80</td>
<td>75</td>
<td>70</td>
</tr>
<tr>
<td>7.</td>
<td>Mohd. Fahim</td>
<td>26</td>
<td>60</td>
<td>57.5</td>
<td>52.5</td>
</tr>
<tr>
<td>8.</td>
<td>Ms. Lailuma</td>
<td>13</td>
<td>85</td>
<td>75</td>
<td>82.5</td>
</tr>
<tr>
<td>9.</td>
<td>Ghulam Naqshband</td>
<td>40</td>
<td>90</td>
<td>47.5</td>
<td>80</td>
</tr>
<tr>
<td>10.</td>
<td>Basir Ahmad</td>
<td>46</td>
<td>85</td>
<td>77.5</td>
<td>72.5</td>
</tr>
<tr>
<td>11.</td>
<td>Ms. Nasrin Sarwary</td>
<td>20</td>
<td>80</td>
<td>87.5</td>
<td>80</td>
</tr>
<tr>
<td>12.</td>
<td>Salim Jawid</td>
<td>20</td>
<td>60</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>13.</td>
<td>Dr. Soraya</td>
<td>33</td>
<td>85</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>14.</td>
<td>Dr. Mohd. Afzal</td>
<td>26</td>
<td>80</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>15.</td>
<td>Dr. Mohd. Aref</td>
<td>33</td>
<td>75</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>16.</td>
<td>Ms. Arzo Adel</td>
<td>33</td>
<td>80</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>17.</td>
<td>Dr. Shafiqullah azimi</td>
<td>46</td>
<td>80</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>18.</td>
<td>Mohd. Farid</td>
<td>33</td>
<td>80</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>19.</td>
<td>Mohd. Ebadullah</td>
<td>26</td>
<td>80</td>
<td>57.5</td>
<td>Absent</td>
</tr>
<tr>
<td>20.</td>
<td>Mohd. Nasir Babaramia</td>
<td>33</td>
<td>Absent</td>
<td>Not attended</td>
<td>Not attended</td>
</tr>
<tr>
<td>21.</td>
<td>Mohd. Safauddin</td>
<td>Absent</td>
<td>75</td>
<td>85</td>
<td>60</td>
</tr>
<tr>
<td>22.</td>
<td>Ms. Nadera</td>
<td>Absent</td>
<td>Absent</td>
<td>95</td>
<td>92.5</td>
</tr>
<tr>
<td>23.</td>
<td>Ms. Fariba</td>
<td>Not attended</td>
<td>Not attended</td>
<td>Not attended</td>
<td>85</td>
</tr>
<tr>
<td>24.</td>
<td>Ms. Mastura</td>
<td>Not attended</td>
<td>Not attended</td>
<td>Not attended</td>
<td>85</td>
</tr>
<tr>
<td>25.</td>
<td>Mohd. Haroon</td>
<td>Not attended</td>
<td>Not attended</td>
<td>Not attended</td>
<td>75</td>
</tr>
</tbody>
</table>
Delivery Outcome:

- Training has been provided to the participants; test analysis complies IS/AACC/AOAC/ APHA and covered in training. Therefore, Participants would be able to perform below mention parameters. As they are slow learners and lacked in basic knowledge of chemistry and microbiology; needs lots of efforts and practices to be competent enough for accurate results of such mentioned analysis.
  
  a. Proximate analysis of Wheat flour, salt and Fats & Oil:
     i. Moisture
     ii. Ash
     iii. Acid insoluble ash
     iv. Alcoholic acidity
     v. Gluten
     vi. Fibre
     vii. Protein
     viii. Fat
     ix. Sodium Chloride in salt
     x. Iodine in salt
     xi. Saponification in Fats & oil
     xii. Foreign particle in salt

  b. Mycotoxins: total aflatoxins, M1 and Ochratoxins (Elisa kits and reader)
  c. Total plate count
  d. Yeast & mold count
  e. E.coli
  f. S.aureus
  g. Bacillus cereus
  h. Salmonella
  i. Listeria
  j. Vitamin A
  k. Zinc (required AAS)
  l. Iron
m. Vitamin D (needs HPLC to be fixed and reagents to perform)

n. Vitamin B (B12, Folic acid and B1) – required reagents and cultures to perform

- However, with the involvement of Participants, Quality manual and more than 60 Standard operating procedures and Quality system procedures has been developed which are listed below:

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Standard operating procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Horizontal Method for the enumeration and detection of <em>Bacillus cereus</em> and other <em>Bacillus</em> species by colony-count technique at 30°C.</td>
</tr>
<tr>
<td>2.</td>
<td>Qualitative method to determine iron in wheat flour (Spot test for determining added iron).</td>
</tr>
<tr>
<td>3.</td>
<td>Quantitative spectrophotometer method for determination of Total iron in wheat flour.</td>
</tr>
<tr>
<td>4.</td>
<td>Horizontal Method for the enumeration and detection of <em>Listeria monocytogenes</em> by detection method</td>
</tr>
<tr>
<td>5.</td>
<td>SOP for Receiving, Storage and Preparation of microbial culture media</td>
</tr>
<tr>
<td>7.</td>
<td>Horizontal Method for the detection of <em>Salmonella spp.</em></td>
</tr>
<tr>
<td>8.</td>
<td>Determination of Vitamin A in Fortified Food by high-performance liquid chromatography</td>
</tr>
<tr>
<td>9.</td>
<td>Qualitative method for determining vitamin A in fortified wheat flour</td>
</tr>
<tr>
<td>10.</td>
<td>Quantitative Spectrophotometric method for determining vitamin A in fortified Fats &amp; Oil</td>
</tr>
<tr>
<td>11.</td>
<td>Quantitative spectrophotometer method for determination of Vitamin A in Food.</td>
</tr>
<tr>
<td>13.</td>
<td>Determination of Thiamin (B1) in flour by High performance liquid chromatography</td>
</tr>
<tr>
<td>14.</td>
<td>Determination of vitamin B9 (Folic acid) in Fortified food by Microbiological method</td>
</tr>
<tr>
<td>15.</td>
<td>Determination of vitamin B12 (cyanocobalamin) in Fortified food by Microbiological method.</td>
</tr>
<tr>
<td>16.</td>
<td>Determination of Vitamin D in Fats &amp; oil by high-performance liquid chromatography</td>
</tr>
<tr>
<td>17.</td>
<td>Horizontal Method for the enumeration of Yeast and moulds - colony count technique at 25 °C ± 1 °C.</td>
</tr>
<tr>
<td>18.</td>
<td>Determination of Zinc (dry ash method) in Fortified Food by Atomic Absorption Spectrophotometer.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
</tr>
<tr>
<td>19.</td>
<td>Horizontal Method for the enumeration of microorganisms - colony count technique by surface or spread plate method.</td>
</tr>
<tr>
<td>20.</td>
<td>Horizontal Method for the enumeration of microorganisms - colony count technique by pour plate method in food.</td>
</tr>
<tr>
<td>21.</td>
<td>Procedure for Corrective and preventive action (CAPA)</td>
</tr>
<tr>
<td>22.</td>
<td>Procedure for Document control</td>
</tr>
<tr>
<td>23.</td>
<td>Procedure for Continual Improvement</td>
</tr>
<tr>
<td>24.</td>
<td>Procedure for Conducting Internal audits</td>
</tr>
<tr>
<td>25.</td>
<td>Procedure for Purchasing services and supplies</td>
</tr>
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<td>Procedure for Review of requests, tenders and contracts</td>
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<td>27.</td>
<td>Procedure for Service to the customer</td>
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<td>Procedure for Handling of Complaints</td>
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<td>Procedure for Management Reviews</td>
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<td>31.</td>
<td>Procedure for Control of Non Conforming Testing</td>
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<td>32.</td>
<td>Procedure for Receipt, Storage and Issue of Product</td>
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<td>33.</td>
<td>Procedure for Supplier Evaluation and Selection Process</td>
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<td>34.</td>
<td>Procedure for Accommodation and environmental conditions in Laboratory</td>
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<tr>
<td>35.</td>
<td>Procedure for Assuring the Quality of Test Results</td>
</tr>
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<td>36.</td>
<td>Procedure for Handling and Maintenance of Equipments</td>
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<td>37.</td>
<td>Procedure for receipt, handling, protection, storage, retention and disposal of samples.</td>
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<td>38.</td>
<td>Procedure for Measurement Traceability</td>
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<td>39.</td>
<td>Procedure for Estimation of Uncertainty of Measurement</td>
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<td>Procedure for Personnel Training</td>
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<td>41.</td>
<td>Procedure for Reporting the Test Results</td>
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<td>42.</td>
<td>Procedure for Selection of Method and Method Verification</td>
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<tr>
<td>43.</td>
<td>Determination of Acid insoluble ash in Food Products</td>
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<td>44.</td>
<td>Determination of acid value and free fatty acid (FFA) in Oils and Fats</td>
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<td>45.</td>
<td>Determination of Alcoholic acidity in wheat Flour</td>
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<td>46.</td>
<td>Determination of Total Ash in Food Products</td>
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<td>47.</td>
<td>Determination of Crude Fat in food by Soxhlet Extraction Method</td>
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<td>48.</td>
<td>Determination of free fatty acid (FFA) in Oils and Fats</td>
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<td>49.</td>
<td>Determination of Crude Fibre in food sample by SLQ – 6 Coarse Fiber Detreminator</td>
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<tr>
<td>50.</td>
<td>Determination of Gluten Content in wheat Flour</td>
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<tr>
<td>51.</td>
<td>Determination of Hydrogen Ion concentration (pH) of food sample using pH Meter</td>
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<td>52.</td>
<td>Estimation of Iodine Content in salt by Iodometric Titration</td>
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<td>53.</td>
<td>Determination of Iodine value in Oils and Fats</td>
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<tr>
<td>54.</td>
<td>Determination of Moisture in Food Products by Hot Air Oven – Drying Method</td>
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<td>55.</td>
<td>Determination of peroxide value in Oils and Fats</td>
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<td>56.</td>
<td>Determination of protein content in food product by Kjeldahl method</td>
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<td>57.</td>
<td>Determination of Saponification value in Oils and Fats</td>
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<td>58.</td>
<td>Determination of Unsaponifiable matter in Oils and Fats</td>
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<td>59.</td>
<td>Horizontal Method for the detection and enumeration of <em>E. coli</em> by Plate count technique.</td>
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<td>60.</td>
<td>Procedure for revival and disposal of microbial culture.</td>
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<td>61.</td>
<td>Detection and enumeration of <em>Coliforms</em> by most probable technique</td>
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<tr>
<td>62.</td>
<td>Procedure for Endospore staining</td>
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<td>63.</td>
<td>Procedure to stain fungal cells by using Lactophenol cotton blue.</td>
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<td>Procedure for microbial Gram’s staining</td>
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<td>65.</td>
<td>Procedure for maintenance of microbial culture.</td>
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</table>
Recommendations, Challenges and gaps to be fulfilled for the smooth conduct:

- Although participants are slow learners and lacked in basic knowledge of chemistry and microbiology; needs lots of efforts and practices and self training to be competent enough for accurate results of such mentioned analysis.
- Laboratory has limited resources with chemicals, media, standards and major and minor equipments and laboratory aids which has been needed to conduct mentioned analysis (below table) so that participants could practice without any constraints and for which list already been shared with gain for its procurement.

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Method</th>
<th>Gaps to be fulfilled or not available in lab</th>
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<td>Vitamin B12</td>
<td>Microbiological method (AOAC, AACC)</td>
<td>Required reagents, media and reference culture and standards</td>
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<td>Vitamin B9 (Folic acid)</td>
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<td>Mycotoxins</td>
<td>ELISA method</td>
<td>Elisa kit (total aflatoxins and Ochratoxins) and Elisa reader</td>
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<td>Zinc</td>
<td>AAS (AOAC)</td>
<td>AAS (Atomic absorption spectroscopy).</td>
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- Laboratory has poor power backup system due to which Sensitive instruments and test analysis may get affected.
- The laboratory lacks proper ventilation system which is not only a safety and comfort issue but also a performance problem as many analytical instruments are sensitive to temperature and humidity fluctuations.
Annexure- 1
Attendance sheet of participants
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Attendance sheet for Training for Food Laboratory Staff

Kabul, Afghanistan

Month:  

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### Attendance Sheet for Training for Food Laboratory Staff

**Kabul, Afghanistan**

**Month:** June 17

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- Sun 22/11/13
- Mon 25/11/13
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|    | Nagshband            | Lab               |                    |              |          |
| 2  | Nazia Ahmad          | Food Analyst      | MOPH               | 07844867
|    |                       |                   |                    |              |          |
| 3  | Lailuma Sabi         | Food Analyst      | MOPH               | 0787372
|    |                       |                   |                    | 72          |          |
| 4  | Fatime               | Food Lab          | MOPH               | 0775268
|    | Ibadiqah             |                   |                    | 7524547     |          |
| 5  |                       |                   |                    |              |          |
| 6  |                       |                   |                    |              |          |
## Attendance Sheet for Training for Food Laboratory Staff

**Re: September 17 – October 17, 2017**

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*Note: Days for attendance are marked with check marks and handwritten notes.*
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Annexure- 2
Pre- assessment sheets of participants
Pre-assessment Sheet for Trainee

Name of Trainee: Radia Itemi
Date: 12.3.17

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer ✓
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ______?
   a. mouth
   b. pipette ✓
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing ✓
   d. using damaged equipment and glassware

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves ✓
   c. Lab Coats
   d. Face Shields
   e. All of the above ✓

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act ✓
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.  T ✓
b) Food and drinks are allowed in the lab.  F / 
c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.  T ✓
d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market  T ✓
e) Quality control is the activities to monitor a particular Quality requirements  T ✓

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system...I.S.O...x.
b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled ....................
c) Quality improvement is ....................
d) ISO stands for .............................
e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods .....................
Pre-assessment Sheet for Trainee

Name of Trainee: Basir Ahmed Tajiri Date: 12-02-17

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

✓ a) You should always wash your hands before and after lab.
X b) Food and drinks are allowed in the lab.
✓ c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.
✓ d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market
✓ e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system...................

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled..................

c) Quality improvement is........................

d) ISO stands for..........................

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods ..................
Pre- assessment Sheet for Trainee

Name of Trainee: Fahim Amir
Date: 12 March 2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above
   [ ]

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above
   [ ]

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.
   [x]

4. Which of the following type[s] of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above
   [x]

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
   [x]
True/False

a) You should always wash your hands before and after lab. ✗
b) Food and drinks are allowed in the lab. ✗
c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. ✗
d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market. ✓
e) Quality control is the activities to monitor a particular Quality requirements. ✓

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. ..................................
b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled. ..............................
c) Quality improvement is......................
d) ISO stands for.................................
e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods .............................
Pre-assessment Sheet for Trainee

Name of Trainee: Nausrin Sarwary Date: 22.12.1395

1. Total Quality Management & ISO both focuses on
   a. Customer  
   b. Employee  
   c. Supplier  
   d. All of the above  

   Crossed out:

2. Chemical, reagents or broth cultures should be pipetted by _________?
   a. mouth  
   b. pipette  
   c. Both a and b  
   d. none of the above  

   Crossed out:

3. Good work practices include
   a. smelling and tasting chemicals  
   b. not washing hands before and after lab  
   c. confining long hair and loose clothing  
   d. using damaged equipment and glassware.  

   Crossed out:

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses  
   b. Gloves  
   c. Lab Coats  
   d. Face Shields  
   e. All of the above  

   Crossed out:

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess  
   b. Plan, do, check, act  
   c. Plan, diagnose, conclude, act  
   d. Plan, design, conclusion, action  

   Crossed out:
True/False

a) You should always wash your hands before and after lab. **true**

b) Food and drinks are allowed in the lab. **false**

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. **X**

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market **X**

e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. Quality assurance

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled. 

c) Quality improvement is ....................

d) ISO stands for ................................

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods .........................
Pre-assessment Sheet for Trainee

Name of Trainee: ____________________________
Date: ____________________________

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
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   c. Lab Coats
   d. Face Shields
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   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.

X Food and drinks are allowed in the lab.

◊ Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.

◊ Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market

e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. 

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is

d) ISO stands for 

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: M. Aman Wajed  Date: 12/03/17

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   ☑ All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   ☑ pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   ☒ not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   ☐ Gloves
   c. Lab Coats
   d. Face Shields
   ☑ All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   ☒ Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab. T
b) Food and drinks are allowed in the lab. F

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. F

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market F

e) Quality control is the activities to monitor a particular Quality requirements T

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system: ____________________________

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled: ____________________________

c) Quality improvement is: ____________________________

d) ISO stands for: ____________________________

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods: ____________________________
Pre-assessment Sheet for Trainee

Name of Trainee: Malalai

Date:

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by _____?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
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   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.  
   b) Food and drinks are allowed in the lab.  
   c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.  
   d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market.  
   e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system...  
   b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.  
   c) Quality improvement is.  
   d) ISO stands for.  
   e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: M. Naqit Boburi

Date: 13/3/2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by _______?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

✓ a) You should always wash your hands before and after lab.
✗ b) Food and drinks are allowed in the lab.
✓ c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.
✗ d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market
✓ e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is.

d) ISO stands for.

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: Najia Ahmadzad  Date: 12.3.2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above X

2. Chemical, reagents or broth cultures should be pipetted by _______?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above
   b.

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.
   d.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above
   e.

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
   a.
True/False

a) You should always wash your hands before and after lab. ✓
b) Food and drinks are allowed in the lab. ❌
c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. ✓
d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market. ❌
e) Quality control is the activities to monitor a particular Quality requirements. ✓

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system...
b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled...
c) Quality improvement is...
d) ISO stands for...
e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods...
Pre-assessment Sheet for Trainee

Name of Trainee: Shafiqullah Azimi Date: 13, 3, 2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   - a. Customer
   - b. Employee
   - c. Supplier
   - d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   - a. mouth
   - b. pipette
   - c. Both a and b
   - d. none of the above

3. Good work practices include
   - a. smelling and tasting chemicals
   - b. not washing hands before and after lab
   - c. confining long hair and loose clothing
   - d. using damaged equipment and glassware.
   - e. None of them

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   - a. Safety glasses
   - b. Gloves
   - c. Lab Coats
   - d. Face Shields
   - e. All of the above

5. What is the initial of PDCA cycle stands for
   - a. Plan, design, control, assess
   - b. Plan, do, check, act
   - c. Plan, diagnose, conclude, act
   - d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.

b) Food and drinks are allowed in the lab.

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market

e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is

d) ISO stands for

f) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: M. AFZAL
Date: 83.3.20

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above [x]

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette [x]
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses [x]
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act [x]
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.  
   b) Food and drinks are allowed in the lab.  
   c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.  
   d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market  
   e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.  
   b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.  
   c) Quality improvement is.  
   d) ISO stands for.  
   e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: fatima. Doost  Date: 22/12/95

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by __________?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

- a) You should always wash your hands before and after lab.
- b) Food and drinks are allowed in the lab.
- c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.
- d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market.
- e) Quality control is the activities to monitor a particular Quality requirements.

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is.

d) ISO stands for.

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: Dr. Soraya/Abdul Samad  Date: 13-03-2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by _______
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab. T
b) Food and drinks are allowed in the lab. F
c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. T
d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market F
e) Quality control is the activities to monitor a particular Quality requirements T

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. [ ]
b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled. [ ]
c) Quality improvement is. [ ]
d) ISO stands for. [ ]
e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods. [ ]
Pre-assessment Sheet for Trainee

Name of Trainee: Moh Farid

Date:

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ______? 
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   ✔ a. Safety glasses
   ✔ b. Gloves
   ✗ c. Lab Coats
   ✔ d. Face Shields
   ✔ e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   ✔ c. Plan, diagnose, conclude, act
   ❌ d. Plan, design, conclusion, action
True/False:

a) You should always wash your hands before and after lab. \( \text{F} \)

b) Food and drinks are allowed in the lab. \( \text{F} \)

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. \( \text{T} \)

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market. \( \text{T} \)

e) Quality control is the activities to monitor a particular Quality requirements. \( \text{T} \)

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. \( \text{GLP} \)

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled. \( \text{standard} \)

c) Quality improvement is. \( \text{ISO} \) standard operation

d) ISO stands for international operation

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: Mohammed Aref Sabooz Date: 13.03.2012

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above

3. Good work practices include
   ✗ a. smelling and tasting chemicals
   ✗ b. not washing hands before and after lab
   ✗ c. confining long hair and loose clothing
   ✗ d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   ✔ a. Safety glasses
   ✔ b. Gloves
   ✔ c. Lab Coats
   ✔ d. Face Shields
   ✔ e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   ✗ c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

✓ a) You should always wash your hands before and after lab.
✓ b) Food and drinks are allowed in the lab.
✓ c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.
✓ d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market
✓ e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is.

d) ISO stands for.

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: Lailuma Safi
Date: 12/8/2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer  
   b. Employee  
   c. Supplier  
   d. All of the above

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth  
   b. pipette  
   c. Both a and b  
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals  
   b. not washing hands before and after lab  
   c. confining long hair and loose clothing  
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses  
   b. Gloves  
   c. Lab Coats  
   d. Face Shields  
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess  
   b. Plan, do, check, act  
   c. Plan, diagnose, conclude, act  
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab.

b) Food and drinks are allowed in the lab.

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market

e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is..............

d) ISO stands for.............

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: [Handwritten]  Date: 12/3/2017

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above  ✗

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette
   c. Both a and b  ✗
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab. ✔

b) Food and drinks are allowed in the lab. ✔

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. ✔

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market ✔

e) Quality control is the activities to monitor a particular Quality requirements ✔

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is.

d) ISO stands for.

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: "Ngoc" Date: 22/12/96

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above [x]

2. Chemical, reagents or broth cultures should be pipetted by ______?
   a. mouth
   b. pipette
   c. Both a and b [x]
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above [x]

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action [x]
True/False

a) You should always wash your hands before and after lab. ✔

b) Food and drinks are allowed in the lab. ☒

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. ✔

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market. ☒

e) Quality control is the activities to monitor a particular Quality requirements. ✔

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system.

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled.

c) Quality improvement is.

d) ISO stands for.

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods.
Pre-assessment Sheet for Trainee

Name of Trainee: Salim Jawid
Date: 12 March 1976

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above
      X

2. Chemical, reagents or broth cultures should be pipetted by ______?
   a. mouth
   b. pipette
   c. Both a and b
   d. none of the above
      
3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above
      
5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
      
True/False

a) You should always wash your hands before and after lab. [Crossed out]

b) Food and drinks are allowed in the lab.

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries.

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market

e) Quality control is the activities to monitor a particular Quality requirements

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system. [Crossed out]

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled. [Crossed out]

c) Quality improvement is. [Crossed out]

d) ISO stands for. [Crossed out]

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods. [Crossed out]

[Handwritten notes: ISO-17025 for lab, ISO for food safety 22000]
Pre-assessment Sheet for Trainee

Name of Trainee: A20 Adeel  
Date: 18.03.2007

Multiple choice Question

1. Total Quality Management & ISO both focuses on
   a. Customer
   b. Employee
   c. Supplier
   d. All of the above [x]

2. Chemical, reagents or broth cultures should be pipetted by ________?
   a. mouth
   b. pipette [x]
   c. Both a and b
   d. none of the above

3. Good work practices include
   a. smelling and tasting chemicals
   b. not washing hands before and after lab
   c. confining long hair and loose clothing
   d. using damaged equipment and glassware.
   x

4. Which of the following type(s) of Personal Protective Equipment (PPE) is frequently used?
   a. Safety glasses [x]
   b. Gloves
   c. Lab Coats
   d. Face Shields
   e. All of the above

5. What is the initial of PDCA cycle stands for
   a. Plan, design, control, assess
   b. Plan, do, check, act
   c. Plan, diagnose, conclude, act
   d. Plan, design, conclusion, action
True/False

a) You should always wash your hands before and after lab. ✓

b) Food and drinks are allowed in the lab. ✗

c) Good Laboratory Practice (GLP) is a method employed in a laboratory setting to prevent contamination, accidents and injuries. ✓

d) Quality is predictable degree of uniformity and dependability at low cost with a quality suited to the market ✗

e) Quality control is the activities to monitor a particular Quality requirements ✓

Fill in the Blanks

a) Group of people working together to manage all the activity that determine Quality Assurance and Quality Improvement within the system

b) Part of Quality management focused on providing confidence that quality requirements will be fulfilled

c) Quality improvement is

d) ISO stands for

e) General requirements for the competence to carry out tests and/or calibrations, including sampling. It covers testing and calibration performed using standard methods, non-standard methods, and laboratory-developed methods
Annexure- 3
Post assessment sheets of participants
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: 
Date: 2-4-2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True       b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel   b. Authority and resources   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President   b. Technical Manager   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True       b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured       b. ISO 9001 registered   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
   a. Finger-pointing
   b. Risk management
   c. An investigation to determine the root cause(s) of the problem

11. Records must be:
   a. Legible, readily retrievable, and in a suitable environment
   b. Designed for auditors
   c. Controlled by IT personnel

12. Internal audits are conducted to verify:
   a. Compliance of operations with quality system
   b. Compliance of operations with quality system and ISO 17025
   c. Compliance of operations with ISO 17025

13. Management reviews ensure:
   a. Continuing suitability and effectiveness of the quality system
   b. That there will always be another Dilbert cartoon
   c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
   a. Maximize profits
   b. Meet the needs of the client and appropriate for the test
   c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
   a. Ensure that the function and calibration status are shown to be satisfactory
   b. Ensure the “Out-of-Service” label is removed
   c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
   a. International Laboratory Accreditation Committee
   b. National measurement standards
   c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
   a. It shall be uniquely identified and reference to the original
   b. It shall retain the same identity as the original
   c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   x 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with
ISO/IEC 17025 must first ____:
   a. Obtain a copy of the other laboratory’s quality manual
   x b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory’s price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of ____?
   a. ISO 9001-2000 Quality Management Systems
   x b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: W. Farim Date: 9.4.17

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the *current* edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first _____:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of _____?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 - April 5, 2017

Name of Trainee: Safaaldin

Date: April 12, 2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel   b. Authority and resources   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President   b. Technical Manager   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured   b. ISO 9001 registered   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment
    is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the “Out-of-Service” label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of
    Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with
   ISO/IEC 17025 must first _____:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of _____?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 - April 5, 2017

Name of Trainee: Moh. Farid Karimi  
Date: 2 Apr. 2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True  
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel  
   b. Authority and resources  
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President  
   b. Technical Manager  
   c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in:
   b. Quality Policy Statement  
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper  
   b. You give all documentation to your supervisor to maintain  
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability  
   b. Potential revenue  
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True  
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured  
   b. ISO 9001 registered  
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment
    is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of
    Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first _____:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of _____?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Rabia Meena

Date: 2.4.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2011

19. Before subcontracting any testing work to another laboratory, a lab which complies with
ISO/IEC 17025 must first:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of:
   b. EN45001:1999 General criteria for the operation of testing laboratories
   c. ISO/IEC 17024 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: M. Aman

Date: 02.04.17

Multiple Choice Question:

✓ 1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True  
   b. False

✓ 2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel  
   b. Authority and resources  
   c. Instrumentation

✓ 3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President  
   b. Technical Manager  
   c. Quality Manager

✓ 4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement  
   c. Standard Operating Procedure

✓ 5. Document control means:
   a. Ways to reduce paper  
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

✓ 6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability  
   b. Potential revenue  
   c. Spelling and grammar

X 7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True  
   b. False

✓ 8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured  
   b. ISO 9001 registered  
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the “Out-of-Service” label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first ___:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and Competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of __?__
    a. ISO 9001-2000 Quality Management Systems
    b. EN45001-1989 General criteria for the operation of testing laboratories
    c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Dr. Soraya

Date: 02-04-2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   - a. True
   - b. False

2. Organization: Management and technical personnel shall have the necessary:
   - a. Personnel
   - b. Authority and resources
   - c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   - a. Vice President
   - b. Technical Manager
   - c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:
   - b. Quality Policy Statement
   - c. Standard Operating Procedure

5. Document control means:
   - a. Ways to reduce paper
   - b. You give all documentation to your supervisor to maintain
   - c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   - a. Client requirements and lab capability
   - b. Potential revenue
   - c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   - a. True
   - b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   - a. Insured
   - b. ISO 9001 registered
   - c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first ___:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and Competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of ___?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Fatima Doost Date: 3.4.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True ✗ b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel ✓ b. Authority and resources c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President ✗ b. Technical Manager c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in a:

5. Document control means:
   a. Ways to reduce paper ✓ b. You give all documentation to your supervisor to maintain c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   ✓ a. Client requirements and lab capability b. Potential revenue c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True ✗ b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured b. ISO 9001 registered ✓ c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   √ c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first:
   a. Obtain a copy of the other laboratory's quality manual
   √ b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of:
   a. ISO 9001-2008 Quality Management Systems
   b. ISO 17025:1999 General criteria for the operation of testing laboratories
   √ c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 - April 5, 2017

Name of Trainee: M. Afzal Ahmed

Date: 2/4/2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   - True
   - False

2. Organization, management, and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use.
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
a. How angry the client was
b. The investigations and corrective actions taken by the lab
c. How loud the client complained

10. The procedure for corrective action must start with:
a. Finger-pointing
b. Risk management
   ▪ An investigation to determine the root cause(s) of the problem

11. Records must be:
a. Legible, readily retrievable, and in a suitable environment
b. Reserved for auditors
c. Controlled by IT personnel

12. Internal audits are conducted to verify:
a. Compliance of operations with quality system
b. Compliance of operations with quality system and ISO 17025
   ▪ Compliance of operations with ISO 17025

13. Management reviews ensure:
a. Continuing suitability and effectiveness of the quality system
b. That there will always be another Dilbert cartoon
   ▪ Employee requirements are met through 360 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
a. Maximize profits
b. Meet the needs of the client and appropriate for the task
c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
a. Ensure that the function and calibration status are shown to be satisfactory
b. Ensure the “Out-of-Service” label is removed
c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
a. International Laboratory Accreditation Committee
   ▪ National measurement standards
   ▪ Check samples

17. Report the Results: When it is necessary to issue a new test report:
a. It shall be uniquely identified and reference to the original
b. It shall retain the same identity as the original
c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first _____.
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of:
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1998 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee
Duration: March 12 – April 5, 2017
Name of Trainee: Ghulam Nagshbandi
Date: 2-4-2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True  b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel  b. Authority and resources  c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President  b. Technical Manager  c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:

5. Document control means:
   a. Ways to reduce paper  b. You give all documentation to your supervisor to maintain  c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability  b. Potential revenue  c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True  b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured  b. ISO 9001 registered  c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005
   
19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first __b__:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of __c__?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Basir Ahmad Faqiri

Date: 02/04/17

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first b:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of d?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Shafigullah Azimi

Date: 24.04.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
10. In what year was the current edition of ISO/IEC 17025 published?
   a. 1998
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first:
   a. Obtain a copy of the other laboratory’s quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory’s price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of:
   b. EN 45001:1999 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 - April 5, 2017

Name of Trainee: Majic Amradd Date: April 2, 2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization, Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management in which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use.
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Inspected
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005
   
19. Before subcontracting any testing work to another laboratory, a lab which complies with
   ISO/IEC 17025 must first __________:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's profile list
   
20. A laboratory that complies with ISO/IEC 17025 would also meet the principles at __________?
   b. EN 45011:1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011: General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 - April 5, 2017

Name of Trainee: Laituna

Date: 24-04-2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True  b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel  b. Authority and resources  c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President  b. Technical Manager  c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in:

5. Document control means:
   a. Ways to reduce paper  b. You give all documentation to your supervisor to maintain
   a. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability  b. Potential revenue  c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True  b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured  b. ISO 9001 registered  c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first _____:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of _____?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Malalai Sarwari

Date: 3.4.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    x c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment
    is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of
    Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005
   ✔

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first ___:
   a. Obtain a copy of the other laboratory’s quality manual
   ✔
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory’s price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of ___?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
   X
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Arzoo Adel

Date: 02/04/2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   - How angry the client is/was
   - The investigations and corrective actions taken by the lab
   - How loud the client complained

10. The procedure for corrective action must start with:
   - Finger-pointing
   - Risk management
   - An investigation to determine the root cause(s) of the problem

11. Records must be:
   - Legible, readily retrievable, and in a suitable environment
   - Designed for auditors
   - Controlled by IT personnel

12. Internal audits are conducted to verify:
   - Compliance of operations with quality system
   - Compliance of operations with quality system and ISO 17025
   - Compliance of operations with ISO 17025

13. Management reviews ensure:
   - Continuing suitability and effectiveness of the quality system
   - That there will always be another Dilbert cartoon
   - Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
   - Maximize profits
   - Meet the needs of the client and appropriate for the test
   - Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
   - Ensure that the function and calibration status are shown to be satisfactory
   - Ensure the "Out-of-Service" label is removed
   - Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
   - International Laboratory Accreditation Committee
   - National measurement standards
   - Check samples

17. Report the Results: When it is necessary to issue a new test report:
   - It shall be uniquely identified and reference to the original
   - It shall retain the same identity as the original
   - The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1996
   [x] 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first
   a. Obtain a copy of the other laboratory’s quality manual
   [x] b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory’s price list:

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of
   b. ISO 14001-1999 General criteria for the operation of testing laboratories
   [x] c. ISO/IEC 17011: General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Nasrin

Date: 2.4.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
   b. Technical Manager
   c. Quality Manager

4. Quality System: The laboratory's quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the current edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first ______:
   a. Obtain a copy of the other laboratory’s quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory’s price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of ______?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Mohammed Aref Sabory

Date: 02.04.2017

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True  
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel  
   b. Authority and resources  
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President  
   b. Technical Manager  
   c. Quality Manager

4. Quality System: The laboratory’s quality system policies and objectives shall be defined in a:
   b. Quality Policy Statement  
   c. Standard Operating Procedure

5. Document control means:
   a. Ways to reduce paper  
   b. You give all documentation to your supervisor to maintain  
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability  
   b. Potential revenue  
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True  
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured  
   b. ISO 9001 registered  
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

10. The procedure for corrective action must start with:
    a. Finger-pointing
    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

11. Records must be:
    a. Legible, readily retrievable, and in a suitable environment
    b. Designed for auditors
    c. Controlled by IT personnel

12. Internal audits are conducted to verify:
    a. Compliance of operations with quality system
    b. Compliance of operations with quality system and ISO 17025
    c. Compliance of operations with ISO 17025

13. Management reviews ensure:
    a. Continuing suitability and effectiveness of the quality system
    b. That there will always be another Dilbert cartoon
    c. Employee requirements are met through 365 degree feedback

14. Methods and validation: Methods must be sufficiently validated as well as:
    a. Maximize profits
    b. Meet the needs of the client and appropriate for the test
    c. Easily implemented by the lab

15. Equipment: Choose the most correct answer for the following statement. Before equipment
    is placed back in service, lab personnel must:
    a. Ensure that the function and calibration status are shown to be satisfactory
    b. Ensure the "Out-of-Service" label is removed
    c. Not start new work too close to coffee break

16. Measurement standards and instruments must be traceable to the International System of
    Units by means of an unbroken chain of calibrations or comparisons linking them to:
    a. International Laboratory Accreditation Committee
    b. National measurement standards
    c. Check samples

17. Report the Results: When it is necessary to issue a new test report:
    a. It shall be uniquely identified and reference to the original
    b. It shall retain the same identity as the original
    c. The original is returned to the lab
18. In what year was the *current* edition of ISO/IEC 17025 published?
   a. 1982
   b. 1999
   c. 2005

19. Before subcontracting any testing work to another laboratory, a lab which complies with ISO/IEC 17025 must first ____:
   a. Obtain a copy of the other laboratory's quality manual
   b. Ensure that the other laboratory is accredited to ISO/IEC 17025 and competent
   c. Ensure that the other laboratory's price list

20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of ____?
   a. ISO 9001-2000 Quality Management Systems
   b. EN45001-1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee


Duration: March 12 – April 5, 2017

Name of Trainee: Salim Jawid

Multiple Choice Question:

1. ISO 17025 provides all the requirements that labs have to meet if they wish to demonstrate that they operate a quality system, are technically competent, and are able to generate technically valid results.
   a. True √
   b. False

2. Organization: Management and technical personnel shall have the necessary:
   a. Personnel
   b. Authority and resources
   c. Instrumentation

3. What is the position title of the person who must have direct access to the highest level of management at which decisions are made on laboratory policies and resources?
   a. Vice President
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   c. Quality Manager

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   a. Ways to reduce paper
   b. You give all documentation to your supervisor to maintain
   c. Documents are identified, authorized, reviewed

6. Requests, tenders, and contracts are reviewed for:
   a. Client requirements and lab capability
   b. Potential revenue
   c. Spelling and grammar

7. A laboratory is responsible to the client for the work of a subcontractor even when the client specifies which subcontractor to use:
   a. True
   b. False

8. Supplies of critical consumables, supplies, and services which affect quality must be:
   a. Insured
   b. ISO 9001 registered
   c. Evaluated and approved by the lab
9. Records shall be maintained of all client complaints and of:
   a. How angry the client is/was
   b. The investigations and corrective actions taken by the lab
   c. How loud the client complained

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    b. Risk management
    c. An investigation to determine the root cause(s) of the problem

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    c. Compliance of operations with ISO 17025

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   c. 2005

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20. A laboratory that complies with ISO/IEC 17025 would also meet the principles of _____?
   b. EN45001:1989 General criteria for the operation of testing laboratories
   c. ISO/IEC 17011 General Requirements for Laboratory Accreditation
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: M. Aman

Date: 19/6/17

1. Principle of gram staining?
2. Write the procedure for gram staining?
3. What are the selective media for detection of E.coli and S.aureus?
4. Write the formula to calculate the CFU in sample by TPC and yeast and mold count?
5. How gram positive and gram negative bacteria can be identified during gram stain?
6. What type of colonies can be observed on EMB agar and for which food Pathogen?
7. What is the spread plate technique?
8. How maintenance of reference culture can be done?
9. Which media is used for Total plate count and Yeast and mold count?
10. Which diluents are used for sample preparation?

[Handwritten notes and formulas]

(3) MacConkey agar, Nutrient agar, EMB agar
(4) N = \sum C (N_1 + 0,1 N_2) D

gram (+) (Red) gram (-) (Purple)
1. **EMB agar**
   - **Green Nethalic**
2. **TPC** = **Total Plate Count Agar**
3. **Yeast Extract chloramphenicol Dextrose Agar**
4. **PDA**

*Note:* The conditions are as follows:

- B. Pepton water 225 ml + 25 gm
- B. Pepton water 225 ml + 25 gm
- B. Pepton water 225 ml + 25 gm
- Melatonin 100 ml + 25 gm
- Melatonin 100 ml + 25 gm

**Conditions:**
- 48 h growth at 37° C
\[ N = \frac{\Sigma C}{(N_1 + 0.1N_2)D} \]

\( \Sigma C \) = sum of colonies with counted all dishes

\( N_1 \) = is the No. of dishes retained in the first Dilution

\( N_2 \) = is the No. of dishes retained in the second Dilution

\( D \) = is the Dilution factor corresponding to the first dilution.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Malalai  Date: 19.6.017

1. Principle of gram staining?
2. Write the procedure for gram staining?
3. What are the selective media for detection of E.coli and S.aureus
4. Write the formula to calculate the CFU in sample by TPC and yeast and mold count?
5. How gram positive and gram negative bacteria can be identified during gram stain?
6. What type of colonies can be observed on EMB agar and for which food Pathogen?
7. What is spread plate technique?
8. How maintenance of reference culture can be done?
9. Which media is used for Total pate count and Yeast and mold count?
10. Which diluents are used for sample preparation?

\[
N = \frac{EC}{(N_1 + 0.1N_2)} \times D
\]

- EMB (Blood Ag)  S. Aureus
- Blood Ag  S. Aureus
- E. coli

\[
\frac{E}{C} = \text{No of colonies on all dishes}
\]

\[
N_1 = \text{No of plate in First dilution}
\]

\[
N_2 = \text{No of dishes in 2nd Dilution}
\]

\[
D = \frac{\text{Dilution Factor of first plate}}{2}
\]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Nigema Neeraj Deka Date: 19/06/2017

1. Principle of gram staining?
2. Write the procedure for gram staining?
3. What are the selective media for detection of E.coli and S.aureus
4. Write the formula to calculate the CFU in sample by TPC and yeast and mold count?
5. How gram positive and gram negative bacteria can be identifies during gram stain?
6. What type of colonies can be observed on EMB agar and for which food Pathogen?
7. What is spread plate technique?
8. How maintenance of reference culture can be done?
9. Which media is used for Total pate count and Yeast and mold count?
10. Which diluents are used for sample preparation?
\[ N_2 = \frac{Ze}{(N_f+0.1 N_s)D} \]

\[ Z \rightarrow \text{sum of colonies on Plate} \]

\[ N_1 \rightarrow \text{No. of Plates in first dilution} \]

\[ N_2 \rightarrow \text{No. of Plates in 2nd dilution} \]

\[ D \rightarrow \text{Dilution, i.e., factor of corresponding dilution} \]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Abadweeary  Date: 19-6-2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

\[ \text{Ammoniation} \rightarrow \text{Salt + Ammonia} \]

\[ \text{Normality} = \frac{\text{frame just met yellowing spot}}{\text{Vol.} \text{ Concentration}} \]

\[ \text{Ans } 2 = \text{Almin} \rightarrow \frac{\text{Vaf x 100 x } 0.7}{\text{Weight of sample}} \]

\[ \text{Ans } 3 = \text{NaOH and H}_2\text{SO}_4 \]

\[ 4 = 5v - \frac{\text{KOH} x (B-5) x N}{\text{Sample}} \]

\[ 5 = \text{dry/calcined} = \frac{\text{Weight dry/calcined}}{\text{Basis} \times \text{Weight sample taken}} x 100 \]

\[ 6 = \text{Total Ash} = \frac{\text{w}_{2} - w_{1}}{w_{1}} x 100 \]

\[ 7 = \text{Wheat at flour } 25\% \]

\[ \text{weight of dry } 7 - 12\% \]

\[ \text{Breads is wiper return grain of may ciu } \]

\[ \text{or } \text{ anise } \text{ Meaning of } 14\% \]
Ans - 8.2 g - salt + heat + extraction
b - condense cea
C - hand bottom flask

Water acid + 40° proof foam
10 mL HzO, 5 N - Standard Bx - NaOH 0.5 N
9 - 12.00 mL Etkim + 10 gr KOH + 6 g Aluminate
The flat in water bath at for 30 min - 5
Cold after take few of solution
Cold after take few of solution + acid +
proximity 1 + 1 of 1000 mL solution + acid +
KOH + acid + 10° fent on 24 Hours
After 24 hour 10° fent Alcoholic is final

1.5
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: M. Fathim

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

\[ \text{Normality} = \frac{\text{Weight of simple}}{100} \]

\[ \text{Sample weight} \times \text{Factor} = \text{Weight of simple taken} \]

\[ \text{Dry Gluten basis} = \frac{\text{Weight of dry gluten}}{\text{Weight of simple taken}} \times 100 \]

\[ \text{Sodium chloride and salaric acid} \]

\[ 0.5 \text{ normal} \]

\[ 0.5 \text{ normal standard by } \text{aq} \text{ sol} 0.5 \text{ normal} \]
6. Total ash = \( \frac{W_2 - W}{W_1 - W} \times 100 \)
   
   Normality of ash \( W_1 - W \) 0.10 - 0.05 normal H\textsubscript{2}SO\textsubscript{4} acid

7. Weight of flour 25.010
   - Weight of dry 7.32.06
   - Weight of wet 30.40.06

8. Sound & borow flask

9. Log \text{hart} + C18
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Salim Javed  Date: 19-06-2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardised?

\[ N = \text{wet malic acid} \]

\[ \text{2.} \text{ Log salt + 50 ml HCl + H}_2\text{SO}_4 + \text{Sol KI} 10\% \rightarrow \text{10 ml blue colour} \]

\[ \text{3.} \text{ NaOH } 40\% - \text{ HB}_2\text{O}_3 4\% \]

\[ \text{5.} \text{ glut content (on dry basis)} = \% \text{ of glutin (w.b.)} \]

\[ \text{4.} \text{ ZnS + carb Kott Alcholic} \rightarrow \text{ water back + red} \]

\[ \text{ETYL ALCOHOL} \rightarrow \text{HCl 5SN} \]

\[ \text{7.} \text{ the moisture prevent micro organism to flow.} \]

7.9% → 14% moose of 14%
8. Round bottom flask + condenser + sulphuric acid
9. 10 KOH + 1.2 l. Ethyl + 6 g. Aluminium + water + heat oil
   Cool + Filter if
   240g KOH + 2 mol HNa
   + 1 mol sol KOH
   150 °C put in boiler
10. With NaOH 4 mol 0.5%
11. Ash in when the organic material burn content of ash. The material that no burn to content A. insoluble ash.
12. Wet gluten - wet chl gluten
13. Wt at 50°C (60-65°C)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Lailuma

Date: 13/06/2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

First answer: Normality is the molecular weight divided by the number of H2O to (OH, H) group of acid or alkali or divided to volume.

For example: NaOH

\[
\frac{40}{1} = 40 \text{ g} \ 	ext{mole} \text{ of } \text{H}_2\text{O}
\]

This is 1 normal

Second answer: Sample (log) + 50 ml H2O \(\rightarrow\)form

9ml 1N HCl 10% then

10 - 15 min in dark place titration to \(\text{Na}_2\text{S}_2\text{O}_3\)

and starch 1%. Used as a indicator. \(F = \frac{\text{Volume of } \text{Na}_2\text{S}_2\text{O}_3 \times F}{\text{Volume of } \text{Sample}}\)
3rd answer: Selenium mixture / H2S04 / Bronic acid / 4%.

Na0H / HCl / H2S / litmus indicator

4th answer: First we weight the quantity of oil

in a flask then we put in oven to hour 100-130°C

then cool it in dilator then weight it an note

the moisture of oil we repeat it after twice then we

note the moisture of oil the weight 2 gr of

from that oil then 29 ml HCl alcalic and put

3-droop of phenol phthalin as indicator then titration

with HCl 015N calculation

\[
\frac{12 - 5.156}{1} \times 0.5
\]

(23% Sample)

5th answer: Calculin =

\[
\frac{\text{percent moisture}}{100 - \text{moisestur}}
\]

6th answer: Sample

7th answer: Because we prevent the growth of microbe from

sample and also we can get the put weight of sample

and the acceptet value is 7% 9%.

8th answer: 1. Round Bottom flask

2. Soxhlet

3. Camelen car
(9) 1200ml Ethanol + 10gr KOH + 6gr Aluminiumfile put in reflux condenser for 30min → cool it then take out 500ml of solution and then filter it take 1000ml solution + 100gr KOH add 10°C → then put her 24 hour after 24 hour KOH alcohol is ready

(6) we standardize HCl by NaOH 0.5 N,
asprepared 0.5N NaOH then of 400ml NaOH 0.5N in a flask the first we take 400ml NaOH 0.5N in a flask then we put 23 drop phenol phthaldin then titrated by HCl 0.5 N until colorless our solution

\[ SN = \frac{0.15 \times 40\text{ NaOH}}{1\text{ HCl}(41.8)} = 0.468 \geq 0.5 N \]

(8) ash is substance which burns organic material and remind minerals and acid insoluble ash is a substance which insoluble in acid.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: 

Date: 19.06.2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

Answer 1: 

\[ \text{Molecular } \frac{\text{valency}}{\text{molar mass}} = \text{equivalent} \]

\[ N = \frac{\text{equivalent}}{\text{lit}} \]

Answer 2: 

Agg S, + 30 ml H₂O + 10 ml H₂SO₄ 2N
+ 10 % KOH 10 %

Keep in dark place for 10 min then titrate 1% starch

by Sodium thiosulfate until up colour and added over

and titrate again up to produce colour.

\[ \text{Jodin Value} = \frac{V \times F \times 105.7 \times 100}{W \times (S, 100 - M)} \]

F = Factor of thiosulfate

V = Volume of used

S = wt of sample
(3) Selenium Mixtures

1. \( \text{H}_2 \text{SO}_4 \) conc
2. \( \text{NaOH} \) 40%
3. \( \text{H}_3 \text{BO}_3 \) 4%
5. Toshii (Metallic plus Hydroxyl)
6. \( \text{H}_2 \text{O} \)

(4) Gluten dry

\[ \text{Weight} \times \frac{w}{(100 - W)} \]

(5) Ash is the remains of organic material after burning (Mg, Na, Ca).

To Acid insoluble Ash: To fin forcing Material in Ash of sample and oxidize like silicon change to Silicate.

(6) Fully strong Alkali

oil + \( \text{NaOH}, \text{KOH} \) → Glyceryl + 3

(7) 1200 Elliglutaraldehyde + 740 g KOH + 6 g Ammonia

Heat in water bath and condenser for 4 hours. Filter and keep in 90-100°C for 24 hours in 15°C up to be clean and dry bottle.
7. Moisture is important in flour because of microorganisms grow and gluten will damage. Acceptable value for moisture in flour: 7 - 14%.

8. Components for fat:
   - 1. Suxelk condenser - with Extractor
   - 2. compacted Round flask bulbs
   - 3. heating Mantel (40 - 60°C)

9. We take three 50 ml flask total NaOH 0.5N and Titrak by HCl 0.1N by using indicator Methyl orange. Total used value of HCl was 41.8 ml

\[
N_1 V_1 = N_2 V_2 \\
0.5 \times 1 = x \times 41.8
\]

\[
x = \frac{0.5 \times 1}{41.8} = 0.0138 N
\]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Ghulam Naqshbandi

Date: 19-06-2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation? NaOH H2SO4
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

Ans-1  solution → solute + solvent

Normality = \[ \frac{\text{gram equivalent weight}}{\text{valency}} \] = \[ \frac{V1 \times N1}{V2 \times N2} \]

Ans-2  Iodin → \[ \frac{V \times F \times 100 \times 105.7}{\text{weight of sample}} \]

Ans-3  NaOH and H2SO4

Ans-4  SV → \[ \frac{KOH (B-5) \times N}{\text{sample}} \]

Ans-5  dry Gluten basis = \[ \frac{\text{weight dry gluten}}{\text{weight sample taken}} \times 100 \]
Answer- 6  Total Ash = \( \frac{W_2 - W}{W_1 - W} \times 100 \)

Normal range Ash 0.5 - 1%

Normal range Acid insoluble ash 0.01 - 0.05

Answer- 7  Weight of flour 25%

Weight of dry 7 - 12%

Weight of wet 30 - 40%

Answer- 8

1 - Soxhlet extraction
2 - Condenser
3 - Round bottom flask

Answer- 9

0.5 N HCl standard by NaOH 0.5 N

\[ \frac{9.5}{20} \]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: fatima

Date: 19-6-17

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

1. N wet. Solvent
   V\text{density}
   N = \frac{\text{wt of solute}}{\text{wt of solvent}}

2. \text{log salt} + \text{water} \rightarrow \text{H}_{2}\text{O}

3. \text{H}_{2}\text{SO}_{4} + \text{HSO}_{4}^{-}

4. \text{HCl} + \text{sample} + 25 \text{ml KOH}

5. \text{But content} \times \text{wt of sample} \times 100
   \text{wt of} \text{HCl}

6. When the organic material is standardised, the content at ash the material that \text{N, H, O, to content} Acid insoluble Nase
6 - Total HAs = \[ \frac{W_2 - W}{W_1 - W} \times 100 \]

7 - the meascher

[basis] = \[ \frac{\text{weight of dry latex}}{\text{weight of sample taken}} \]

8 - Round bottom flask K + condenser

9 - 180 ml KOH + 1 L lit Et. ethyl Alcohol + 6 g Alumum am

f Water but beid could filter it

\[ \text{4 g m} \times \text{KOH + } 2 \text{ m H}_2\text{O + } 1 \text{ m of sol KOH} \]

'15 c°' \[ \text{put in boiled sodium chlorid and salt foric acid} \]

10 with NaOH Homb 0.5-0.1
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: 

Date: 19-6-2017

1. How normality of the solute and solution can be calculated?
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8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardised?

Equiv. =

\[ \text{Normality} = \frac{\text{Moles of solute}}{\text{Volume of solution}} \]

10gm salt + 50 ml H2O + mL H2SO4 + 10% (10 ml) 10% KCl 10 min

Test reaction by Na2CO3 starch blue test reaction by Na2CO3 0.05m

\[ I = \frac{\sqrt{\text{105.7} \times 100}}{\text{S.P.E.} - (100 - \text{M.H.})} \]

\[ \text{Titration} \]

\[ \text{HNO}_3 \text{conc} \text{ is used} \text{ with} \text{ } \text{HCl} \]

\[ 2 \text{gm oil} + 25 \text{ml KOH Alcohol} \text{ Water bath} + 10 \text{ml EtOH} \text{ Alcohol} \]

\[ \text{Indicator} \text{potential} \]

\[ \frac{56.1 \times \text{used HCl 0.5N} \times 0.5}{\text{wt simple}} \]
(1) Weigh | Clean | Dry | Weight of Disulphite | w.t. Sample (100 - moisture) | w.t. Gla\textsuperscript{ten} 100,000

(2) Flash at 100°C | wt. Gla\textsuperscript{ten} is not insoluble

(3) Burn with | 1.25 liter 98\% Alchool + 6 gm Alfoil

(4) Rinse Boro | Condensate

(5) Wash Bath | Cellulose Porer

(6) 10 gm + 125 gm 98\% Alchool + 6 gm Alfoil

(7) Carefully add | 10,000 ml Solution K\textsubscript{2}CO\textsubscript{3} 1200

(8) 0.4 hour at 15°C

(9) Wash with | Bubble 900 with 5\% Alchole

(10) Heat 100°C + 20 mg H\textsubscript{2}O + 1000 mg Solution K\textsubscript{2}CO\textsubscript{3}
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Rodia Serra

Date: 19-6-2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

\[ N = \frac{\text{specific gravity} \times \text{purity} \times 1000}{\text{equivalent} \times 100} \]

\[ N = \frac{\text{molecular weight}}{\text{valency}} \times \text{equivalent} \times 1000 \]

\[ \text{Solution} = \text{equivalent} \times \text{valency} \times 1000 \]

for acid used hydrogen and for alkali

\[ \text{OH} \]

8. 10 g Salt + 50 ml H2O + 15% H2SO4 2 N + 5 N Potassium iodide put for ten minutes in a dark place and used 1% starch solution drops and titrate with Na2S2O3 0.005 N until the dark colour change to colorless

Iodine ppm on dry basis = \[ \frac{V \times F}{100 \times 105.7} \times (100-x) \]

V = Volume Sodium thiosulfate Na2S2O3

F = Actual N of Na2S2O3 1.005

6.1 N normality of Na2S2O3
3. NaOH 40% - H₃BO₃ 4% - H₂O₂ - HCl 0.1N - Indicate
Selenium mixture as catalyst

Fat (1.5-2.5) + 25 ml KOH → Reft for one hour
100°C

Condenser for one hour
Blank without fat and oil connected condenser for

one hour and cool it and titrate with 0.5 N

HCl in existence of phenolphthalein first the color

become pink and with HCl 0.5 N become colorless

\[ \frac{(V_B - V_A)}{A} \times 56.1 \times 0.5 \]

Weight of fat Z

5. Solution% of dry basis = \( \frac{\text{Weight of solution}}{100 - \text{Moisture}} \) %

Ash burning organic material

Acid insolubles: it used to determine the foreign

material like silica to change the silicate and the material

which is not soluble in acid.

Moisture is important to know because moisture is the

cause of growing microorganism. The moisture shouldn't

be more than 14%. It is 7-14%.


10 g KOH → 1200 ml Ethyl Alcohol at 6% Alcohol free water

to water bath for 30' boiling and cool in then filter it and

add 40g KOH and 15°C for 24 hour then we store the

NaOH 0.5N SN = 0.5 \times 40 \text{ NaOH } = 0.2 \text{ SN N} = 0.9 N

used in 4:18 phenolphthalein as indicate
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May - June 17

Name of Trainee: Kanishka

Date: 19.06.2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

\[ \text{normality} = \frac{\text{equivalent}}{\text{liter}} \]

For Acids we use hydrogen group and for Alkali is OH^-.

2. The material needed.

10gm salt + 50 ml H2O + 1ml H2SO4 2N + 5ml KI solution.

We put it in a dark place for 10 minutes then we use 1% of starch which will be several drop and then titrate it with Na2S03 adding 0.005 N we shake it till the dark colour changed to colourless.

Iodine pm = \frac{\text{Volume of solution}}{Y \times X \times F \times \text{actual normality}}

Iodine on dry basis = \frac{\text{Volume of solution} \times X \times F \times \text{actual normality}}{S \times \text{Mass}}
We use the following chemicals:

- NaOH 40%  
- H₃BO₃ 4%  
- H₂O base on needed  
- HCl o.n.

We also use Fusharo indicator which is mixed with methen blue and methyl red. H₂SO₄. We use Selenium mixture as catalyst.

4. The following principle is used for saponification of oil value.

Free moisture

1.5 to 2 gm fat + 25 ml KOH, we put it in reflux condenser for one hour to boil till gets clear afterword we get it cool, and then we get a blank without fat and oil and connect it to condenser for one hour and then cool it. After all titrate it with 0.5 N HCl in existence of Phanol phatataran. At first step the colour gets pink, after adding HCl 0.5 N it gets colourless.

\[
\text{Blank sample factor} = \frac{13 - 5}{56.1} \times 0.5
\]

\[
\text{wt of sample}
\]

5. Gluten on dry basis

\[
\text{% of Gluten} = \frac{\text{wt of sample}}{\text{100 - moisture}} \times 100
\]

6. Burning of all organic substance is Ash. Foreign material which cannot be resolved in acid HCl 0.5 N is Acid insoluble Ash. Silica is changed to Silicate.
- moisture is effective for growing of micro organism so we show determine the allowed or accepted value of moisture to prevent micro organism growth. 
   - The accepted value of moisture in wheat flour is between 7% to 14%.

- Condenser
  - Soxhlet
  - Round bottom Flask

9. The following should be considered to prepare Koll Aalcoholic:

   We dissolve 10gm Koll in 1200ml Alcohol
   Then we put 6g Aluminium file into it and then put it in water bath for 30 minute and boil it, after cooling we filter it, now we add 40gm Koll put it in 15°C overnight, afterward we store the clear part of solution.

10. First we prepare 0.5 N NaOH and then put 40cc NaOH

   \[
   \text{N} = \frac{0.5 \times 40cc}{41.8 \text{ titre}} = 0.48 \times 1.5 \times 0.5
   \]

   The indicator is phenolphthalein.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Nadeera

Date: 19-06-2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

Hcl 0.5N can standardize by NaOH 0.5N

\[ \text{HCl} \times 0.5 \times \text{Vb} = \text{NaOH} \times 0.5 \times \text{Ve} \]

\[ \text{HCl} = \frac{\text{NaOH} \times 0.5 \times \text{Ve}}{0.5 \times \text{Vb}} \]

\[ \text{NaOH} = \frac{\text{HCl} \times 0.5 \times \text{Vb}}{0.5 \times \text{Ve}} \]

- Three components for fat determination are
  1. Saturate condenser compact with Extractor
  2. Sand & condenser coupled with Round flask back
  3. Heat in Muffle (uc=co)
Iodine: 2I₂ + 5SO₂ + 5H₂O → I₂ + 5H₂SO₄

Titrate by 0.06N sodium thiosulphate until a blue stain is formed.

Iodine = \frac{V - F}{S} \times 100 \times 105.5 \text{ mg}

F = Excess
V = Used of sodium thiosulphate
S = S - F

Reagent for N determination: Digestion
Selenium mixture: Use conc. H₂SO₄ and H₂O₂, heat

\text{Hg + C or melamine + 0.95 M KOH + 30% ethanol (EtOH) + 0.1 M HCl (aq) → Titration until clear, calculate Hg content.}

Titrator

Glucose dry basis = \frac{\% \text{ of glucose}}{100} \times 100 \text{ g/g}

or \frac{\text{weight of dry}}{\text{weight of dry}} \times 100 \text{ g/g}

Ash is the residue of organic material after burning sample (Ca, Na, Mg, etc.) and acid in sodium ash is ferrous material. The change seen not burning ferous under silica and silicate and these metallic insoluble in HCl & H₂O and indicated ferrous material in the ash of

Alkaline earth + Alkaline (NaOH, KOH) → Gillen's salt

Macleod soap

Ethanolic phenol + 10% KOH + 6% Alum → Heat solution

Cleaner: use lemon juice for 15 h, clean with a clean and dry beaker and label for use of solution.
Moisture is important to the quality of wheat flour, because high moisture in flour encourages microbial growth and can lead to low-quality flour. Normal moisture for flour is 14%. 

1/10
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Basir Ahmed

Date: 19.6.17

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardised?

D. Weight at Volantce
   1. Weight at Molecular

Volantce

2. 10g salt + 50ml H2O + 1mol H2SO4 + Static
10 KI 10%. (In min dark place) Tetration with
Na2S2O3 -> Inductor starch -> Tetration
1.5
with Na2S2O3 up to change color

3. NaOH 40% + Boric acid 4.7% Heazione

4. 2g Sample + 25g K0L Alcholic -> Water
   -> boil -> 20ml Evelyn alcohol -> 40g K0L
   -> Tetration with Acid 0.15
5. Glutine content (on dry basis) / glutine wet basis / weight of sample (to moisture)

6. When the organic material has a content of ash, the material that no burn to contain acid insoluble ash

7. The moisture prevents

7. When moisture is up to standard or more to 14%, it may grow microorganisms. Accepted value is 7-14%.

8. Round bottom flask + condenser + siccator

9. 10g KCl + 112.5 ml Etanol + 6g aluminum foil → heat by water bath → filter
   → add 40g KCl + 20 ml H2O → 800 Kall
   Cold → put cooler bathed
   10. With NaCl 100cc + Phenolphthalein
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: May – June 17

Name of Trainee: Nasrin  
Date: 19.06.2017

1. How normality of the solute and solution can be calculated?
2. Write the procedure for iodine determination in salt?
3. What are chemicals used for Nitrogen estimation?
4. Write the principle of saponification value of oil?
5. Write the formula for Gluten determination on dry basis?
6. What is ash and acid insoluble ash?
7. Why moisture is important to determine in wheat flour? Write the accepted value for moisture in wheat flour?
8. What are three components for fat determination?
9. How Alcoholic potassium hydroxide is prepared?
10. How 0.5 N HCl can be standardise?

\[
e_{\text{equivalent}} = \frac{\text{m.w.}}{\text{Valency}}
\]

\[
N = \frac{e_{\text{quivalent}}}{d_n}
\]

2) 10 g Salt + 50 ml H_2O + 1 ml H_2SO_4 2N + 5 ml KI

Put in dark plac → use 0.5 ml starch 1% (indicator) &

Titation by Sodium thiosulfate 0.005 N till

The Samp. come, color less.

\[
I\text{. Value} = 2 \frac{V 	imes F}{S \times 100 \times 105 \div 7}
\]

3) H_2SO_4 cons → NaOH 40% → Boric acid 4% → Selenium mixture → HCl 0.1N
\[ \text{% of gluten on dry basis} = \frac{\text{% of gluten}}{S(100 - \text{moisture})} \times 100 \]

8. Round bottom flask
   Suxellet
   Condenser

4. 1.5-2 g + 25 ml KOH alcoholic. Connect with reflex condenser for 1h at 100°C
   Also take blank (25 ml KOH) without sample.
   Then cool, filter, and titrate by HCl 0.15N still sample come color less.
   \[ (B - S) \times 0.5 \times \frac{56.1}{\text{wt of sample}} \]

9. 1200 ml Ethanol + 10 g KOH + 6 g Al foil
   Put in Reflex condenser for 30'
   Cool, take out 50 ml of solution
   Then filter. Then take 1000 ml solution + Add 40 g KOH at 10°C
   Then put for 24h. After 24h KOH alcoholic is ready.

7. Because moisture is cause of growing of bacteria in wheat flour, for that determination of moisture is important.
   Acceptable moisture for flour is 7-14% maximum is 14%
6) Ash is substance that burn organic material they by burning, and remain only mineral.

Acid in soluble ash is substance that same material is not soluble in acid-like Selican.

(8) 0.15N HCl can be standardise by NaOH 0.15N or Na₂CO₃ 0.15N and phenol phthalin as indicator. Better way for standardization of HCl 0.15N using of NaOH 0.15N

\[
\frac{0.75 \times 40 \text{ ml NaOH}}{\text{used HCl } 41.8} = 0.148N \approx 0.15N
\]

Take 40 ml NaOH 0.15N Tit by HCl 0.15N Present phenol phthalin 2 drop still we take color less solution then we weight the used quantity.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Marks: 20

Name of Trainee: Mastood

Date: 11-09-2017

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give ............... Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)
   a. Lactophenol cotton blue
   b. Malachite green
   c. Crystal violet
   d. Saffranin

8. On XLD, Salmonella will give (1)
   a. Black color colony
   b. Pink color colony
   c. Olive green colony
   d. Yellow color colony

9. Listeria monocytogenes is (1)
   a. Gram positive
   b. Gram negative
   c. Spore former
   d. Acid producer

10. MYP agar is the selective media for the detection of (1)
    a. Listeria monocytogenes
    b. E.coli
    c. Coliforms
    d. Bacillus cereus

11. Write the procedure for endospore staining? (2)
    First give slide warm saline and drop microorganism
    Shake with loop dry with bunsen burner and malachite green
    After wash with water safranin
    After we see microscop B. cereus green colonies

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)
    \[ N = \frac{EC}{(N_1 + N_2) \times D} \]
    \[ EC = \text{sum of colonies counted all the dishes counted} \]
    \[ N_1 = \text{is the number of dishes reound in first dilution} \]
    \[ N_2 = \text{discces remain in second dilution} \]
    \[ D = \text{is the dilution factor} \]
    \[ N = \text{CFU/gm} \]
13. How maintenance of culture can be done? (2)

14. Write the principle and procedure for gram staining? (2)

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)
راهی طراحی راهکار خیلی بالارسانده باشد که شرایط تغییر نکرده باشد.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Malalai

Marks: 20

Date: 11 Oct 017

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give.................. Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)
   a. Lactophenol cotton blue
   b. Malachite green ✓
   c. Crystal violet
d. Saffaranin

8. On XLD, Salmonella will give (1)
   a. Black color colony
   b. Pink color colony
   c. Olive green colony
   d. Yellow color colony

9. Listeria monocytogene is (1)
   a. Gram positive
   b. Gram negative
   c. Spore former
   d. Acid producer

10. MYP agar is the selective media for the detection of (1)
    a. Listeria monocytogene
    b. E.coli
c. Coliforms
d. Bacillus cereus

11. Write the procedure for endospore staining? (2)

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)

   \[ N = \frac{EC}{(N_1 + D_1 N_2) D} \] 

   EC = is the sum of colonies on all the dishes retained
   N_1 = is the No of dishes retained in the First dilution
   N_2 = is the No of dishes retained in the Second dilution
   D = is the dilution factor corresponding to the First dilution

   CFU
13. How maintenance of culture can be done? (2)

14. Write the principle and procedure for gram staining? (2)

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Fariba Samad

Marks: 20
Date: 11 Oct 2017

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give............. Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)
   a. Lactophenol cotton blue
   b. Malachite green
   c. Crystal violet
   d. Saffaranin

8. On XLD, Salmonella will give (1)
   a. Black color colony
   b. Pink color colony
   c. Olive green colony
   d. Yellow color colony

9. Listeria monocytogene is (1)
   a. Gram positive
   b. Gram negative
   c. Spore former
   d. Acid producer

10. MYP agar is the selective media for the detection of (1)
    a. Listeria monocytogene
    b. E.coli
    c. Coliforms
    d. Bacillus cereus

11. Write the procedure for endospore staining? (2)
    First of all we clean and wash our slide and add on drop off
    # first we prepare our culture on the slide and spread
    well with hope, after that when it become dry, we pour
    a few drops of Malachite green and steam it in the water
    bath for 5-10, after that wash it with Dis water and
    add few drops of Saffaranin and wait for 1 min and wash
    with water and read under Microscope. Endospore give dark green
    color and 
    Vegetative cells will show pink color.

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)

\[ N = \frac{\sum C}{(N_1 + 0.1N_2)D} \]

\[ TPC = \text{CFU/gm} \]

\[ \Sigma C = \text{Is the sum of colonies counted in all dishes.} \]

\[ N_1 = \text{Is the number of dishes that we count in first dilution} \]

\[ N_2 = \text{Is the number of dishes in second dilution} \]

\[ D = \text{Dilution factor like } 10^{-6} \text{ or } 10^{-7} \]
13. How maintenance of culture can be done? (2)

Add 1-2 cc NaCl in slant test tube that has microorganisms and blander it will, after that we give 1 cc from that and add it in 9 ml NaCl tube and write $10^{-1}$, discard our pipet and from that we give 1 cc and pour it in another NaCl tube and write $10^{-2}$ till $10^{-7}$ or $10^{-8}$. After it become finished we use spread plate medium and pour plate medium and we write on our plates sample name, date, dilution factor we start from $10^{-2}$, because in spread we pour 0.1 cc from $10^{-1}$ to our plate and if we pour 1 cc from $10^{-1}$ tube it will become again in $10^{-1}$. After finishing spread we collect our plates and incubate them in 37°C for 24 h.

14. Write the principle and procedure for gram staining? (2)

Clean the slide → add 1 drop NaCl on slide → digestion
Add a smear on NaCl on slide → spread it will → dry it on flame

→ add 2-3 drops of C. violet wait for 1 min → wash with dis. water → add 2-3 drops of iodine → wait for 1 min → wash with dis. water → decolorized with alcohol till the color remove → add and wash with water

→ add few drops of safranin → wait 1 min → after drying read under 10-40x time of microscope.

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)

Spread plate medium: → First we add our media in all sterilized plates under luminar flow air → add 0.1 cc from test tube NaCl $10^{-1}$ → our plate gives the number of $10^{-2}$
Tube NaCl $10^{-2}$ → plate $10^{-3}$ about 0.1 ml → from tube NaCl $10^{-3}$ → 0.1 cc in plate $10^{-4}$ and similarly until the last tub and petri plate from tube $10^{-7}$ → 0.1 cc to plate $10^{-8}$. In all period we use burner and discarding our...
microtipes and collect our plates and incubate them and in the end we clean our lumina and turn off light and speed and turn on U.V lamp.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Marks: 20

Date: 11/2017

Name of Trainee: Wanjuma NDeriza

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give............ Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)
   a. Lactophenol cotton blue
   b. Malachite green
   c. Crystal violet
   d. Saffaranin

8. On XLD, Salmonella will give (1)
   a. Black color colony
   b. Pink color colony
   c. Olive green colony
   d. Yellow color colony

9. Listeria monocytogenes is (1)
   a. Gram positive
   b. Gram negative
   c. Spore former
   d. Acid producer

10. MYP agar is the selective media for the detection of (1)
    a. Listeria monocytogenes
    b. E.coli
    c. Coliforms
    d. Bacillus cereus

11. Write the procedure for endospore staining? (2)

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)

\[ \text{CFU} = \frac{ZC}{(N1 + 0.1N2)D} \]

\( ZC \) is the sum of colonies counted on all the dishes retained.
\( N1 \) is the no. of dishes retained in the first dilution.
\( N2 \) is the no of retained in the second dilution.
\( D \) is the dilution factor corresponding to the first dilution.
13. How maintenance of culture can be done? (2)

14. Write the principle and procedure for gram staining? (2)

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: M. Aman

Marks: 20
Date: 11, 10, 17

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give ............... Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)  
   a. Lactophenol cotton blue  
   b. Malachite green  
   c. Crystal violet  
   d. Saffaranin  

8. On XLD, Salmonella will give (1)  
   a. Black color colony  
   b. Pink color colony  
   c. Olive green colony  
   d. Yellow color colony  

9. Listeria monocytogene is (1)  
   a. Gram positive  
   b. Gram negative  
   c. Spore former  
   d. Acid producer  

10. MYP agar is the selective media for the detection of (1)  
    a. Listeria monocytogene  
    b. E.coli  
    c. Coliforms  
    d. Bacillus cereus  

11. Write the procedure for endospore staining? (2)  
    1. First take a lid and put it. One drop of Normal saline and take by loop from Listeria plate and spread the culture and dry it after that put it from Malachant Green Reagent on Slid and put it for 5 min in water bath after that washing with water and put Saffaranine after 1 min again washing with water and see under microscope.  

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)  

\[ N = \frac{Ec}{(N_1 + 0.1N_2)D} \]  

Ec is the some of counted  
N1 is the no of dishes  
N2 is the no of dishes  
D is the dilution factor  

on all the dishes retained  
retained in the first Dilution  
retained in the second dilution corresponding to the first dilution
13. How maintenance of culture can be done? (2)

14. Write the principle and procedure for gram staining? (2)

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Mohammed Haroon

Marks: 20

Date: 11 Oct 2017

1. Substance like blood, serum, egg are added to the basal medium (1)
   a. Enriched media
   b. Differential media
   c. Indicator media
   d. None of above

2. Selective media for S. aureus (1)
   a. MacConkey agar
   b. Baird parker agar
   c. Blood agar
   d. b and c, both

3. In gram staining, which stain is used as counter stain (1)
   a. Crystal violet
   b. Ethanol
   c. Saffranin
   d. Iodine

4. Endospore staining is done for the identification of (1)
   a. Sporulating organism
   b. Gram positive organism
   c. Gram negative organism
   d. All of above

5. On Eosin methylene blue agar (EMB), E.coli give................. Color colony (1)
   a. Yellow color
   b. Pink color
   c. Green Metallic sheen
   d. Black color

6. What media can be used for the secondary enrichment of Salmonella (1)
   a. RVS media
   b. Selenite F broth
   c. Fraser broth
   d. Buffered peptone water
7. Which stain (primary) is used for endospore staining (1)
   a. Lactophenol cotton blue    ☑️
   b. Malachite green
   c. Crystal violet
   d. Saffaranin

8. On XLD, Salmonella will give (1)
   a. Black color colony   ☑️
   b. Pink color colony
   c. Olive green colony
   d. Yellow color colony

9. Listeria monocytogene is (1)
   a. Gram positive
   b. Gram negative
   c. Spore former
   d. Acid producer    ☑️

10. MYP agar is the selective media for the detection of (1)
    a. Listeria monocytogene  ☑️
    b. E.coli
    c. Coliforms
    d. Bacillus cereus

11. Write the procedure for endospore staining? (2)

12. Write the formula to calculate the CFU in sample by TPC and yeast and mold count? (2)

\[
\frac{E_c}{n_1 + 0.1(n_2)^2}
\]

Ec = total count of plate

n1 = number of plate

D = show the dilution factor
13. How maintenance of culture can be done? (2)

One or two ml normal saline add in pure culture, we do blunder and 1 ml divided to petri dish solution concentration 10^-2

14. Write the principle and procedure for gram staining? (2)

First drop sample on slide face, wait for to dry after add Crystal Violet Solution after one minute wash by water and add Iodine Solution and wait for one minute and wash by Alcohol 85% and then add Safranine after 1/2 minute see on microscope in 100X.

15. How standard plate count technique can be applied for the detection and enumeration of organism (any one technique). (2)

We have two techniques. One plate and spread plate. We start dilution to normal saline after culture one ml to plate concentration is 10^1, 10^2, 10^3.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Fatima Dost

Marks: 20
Date: 17/0ct/2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Triflouroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Triflouroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by .......... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by ................................ method. (1)
   a. UV – Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus fecalisl
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with .................. detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

   3 gr sample + 30 ml ethanol + 3 mL ascorbic
   10% + 4 ml KOH 50%. Put in water bath
   for (1) hour. Extract with 100°C
   by petroleum benzine. Reheat condenser

12. Instrumentation of HPLC with their functions? (2)

   Degasser
   Mobile phase
   Bottle station
   Pump sampler
   Injector onto sampler
   Column
   Detector
   Data – Wast
13. Qualitative analysis of vitamin A in wheat flour? (2)

log r sample + 10m 1,10 phenothroli'n
Dissolve 0.1g rm of 1,10 phenothroli'n
+ 3 ml stilvomtry
+ 2m sample colorit
+ 2m waterbo

Dissolve 0.1g rm of 1,10 phenothroli'n
+ 3 ml stilvomtry
+ 2m sample colorit
+ 2m waterbo

Make it cold down

14. Write the priciple of Elisa for the detection of Mycotoxins? (2)

Fergs

match all factor

1 1 1

G G G

15. Principle for Zinc determination by AAS? (2)

Monochromator
Detector
Hollow cathode lamp
& flame
Nebulizer
Solution
Data Processor
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Lailuma Sabi

Marks: 20

Date: 1 Oct 2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by .......... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by ................. method. (1)
   a. UV – Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus fecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ............... detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)
    3g samples + 30ml ethanol + 3ml ascorbic acid 10% + 1%
    Heat 50°C put in water bath for 1 hour Extract
    by petroleum benzene (retele condenser)
    Then wash by water till neutralized and filter by using of Na2SO3
    12. Instrumentation of HPLC with their functions? (2)
13. Qualitative analysis of vitamin A in wheat flour? (2)

Log sample + 10ml water  
Shake well by vertek +
Add 10ml of propionic then vertek + Add a few drops of
nod saturated + Add 10ml petrolatum ether then vertek
still Separate 2 part of solution, the take 10ml from
clear part of solution and add few drops of
Antimony tri chloride will appears a blue color
The blue color is fast remove
Find the fungus in dairy food, mold, milk, etc.

14. Write the principle of Elisa for the detection of Mycotoxins? (2)

15. Principle for Zinc determination by AAS? (2)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Nassim

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   x Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   x 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichloroacetic acid
   x Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   x 510nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   x 310nm

6. Mycotoxins are produced by ........ (1)
   a. Bacteria
   b. Yeast
   x Molds
   d. None of the above

Marks: 20
Date: 11 Oct 2017
7. Zinc can be determined by ................. method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ............... detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

    3 g Sample + 30 ml Ethanol + 3 ml Ascorbic acid 10% + 4 ml KOH 50% → Put in water bath for 1 hr → Then Extract by reflux condenser with petroleum benzine 50 ml +40 ml + 20 ml → Then wash by water till and degas

12. Instrumentation of HPLC with their functions? (2)

    1. Degasser
    2. Pump section
    3. Auto sampler (Injection)
    4. Column oven
    5. Detector
13. Qualitative analysis of vitamin A in wheat flour? (2)

log Sample (wheat flour) + 20 ml H₂O shake well
by vortex + Add 10 ml of propanol - vortex + Add a few drop of NaCl saturated + Add 10 ml Petroleum Ether & vortex → take layer solution → take few from clear part of solution & add few drop of Antimony trichloride → if vit A is present will get blue color

14. Write the principle of Elisa for the detection of Mycotoxins? (2)

fungus
cereals
nuts
spectrophotometer

15. Principle for Zinc determination by AAS? (2)

Absorption Atomic System

Detector
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Nadeem

Marks: 20
Date: 10-9-2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Triffioauracetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Triffioauracetic acid
   b. Trichoroauracetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by .......... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by................. method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ............... detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)
    3 g of liver + 3 ml ethanol + 3 ml water + 1 ml 1% HCl put in round bottom flask on water bath till in 100°C separating funnel add and and respectively rinse by petroleum ether and petroleum ether distilled petroleum ether until not alkali benzene use by p.p Tann we pour with ether in precoat column on filter paper then we take filter underneath flask below and evaporate at 50°C in evaporation flask than we pur in vacuo to be determined with A in spectrophotometer 325 wave spectrophotometer on Entherm 325 put isopropyl as blank in vacuo in temp then think we put sample and see

12. Instrumentation of HPLC with their functions? (2)
    HPLC: 1. Pump
           2. Injector
           3. Column
           4. Detector

\[
\text{Absorbance} = \frac{I_{0} - I_{\text{blank}}}{L \cdot C}
\]
13. Qualitative analysis of vitamin A in wheat flour? (2)

10 g of flour + ethanol distillation & vertex 1 ml 2 prop. vertex

Formed few layers black and yellow colour which present with

14. Write the principle of Elisa for the detection of Mycotoxins? (2)

Antigen + Antibody → Conjugate + Substrate under see

15. Principle for Zinc determination by AAS? (2)

Absorbance → Atomic system

Ash taken solution in HCl 0.1 M than we have 619.8 nm
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Rabiya Harris

Marks: 20
Date: 19.10.2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by ........ (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by ....................... method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with .............. detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

```
3 g sample + 3 ml ethanol + 3 ml water + 1% KOH + 5% then put in
100°C water bath for one hour then transfer to extraction
funnel and put 3 times petroleum ether and shake well 40-20-20-30
and removed the upper part and then wash with water till it
check with phenol red paper to become neutral
```

12. Instrumentation of HPLC with their functions? (2)

```
High performance liquid chromatography

Degaser

Pump

Auto Sampler

Oven Column

Detector
```
13. Qualitative analysis of vitamin A in wheat flour? (2)

Log sample + 20 ml water, shake and vortex add 10 ml 1% propargyl vortex and add a few drop NaCl and add yellow 10 ml Petroleum ether and to dry come and see that a clear part and drop antimony trichloride blue color come for 20 second. This blue color is vitamin A.

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

10 l of milk centrifuge sugar and milk we have 0 ppm. 5 ppm 15 ppm 30 ppm 60 ppm 100 ppm. We take 250 micropot we put six part standard solution we put milk in 40 sample we put in antigen milk. Antibody we read at 620 wave length if the color is white aflatoxin present.

15. Principle for Zinc determination by AAS? (2)

Absorption atomic system

Sample dried in acid and

Hollow cathode lamp → Furnace → Monochromator → Detector

Wavelength 613 nm → Nebulizer → Solution test → Data processor

The maledic change to sample atom and observed light.
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Fahim

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used? (1)
   a. Trifluoroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by ......................... method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ....................... detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)
    
    10 ml samp

12. Instrumentation of HPLC with their functions? (2)
13. Qualitative analysis of vitamin A in wheat flour? (2)

\[ 2 \text{ ml chloroform} + 2 \text{ ml sample extract} \quad \text{produces color?} \]

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

\[ \text{NaHPO}_4 \]
\[ \text{KNO}_3 \text{PO}_4 \]
\[ \text{KH}_2 \text{PO}_4 \]
\[ \text{NaCl} \]
\[ \text{pH} 7.2 \text{ poly substrate} 90 \% \text{ of} \]

15. Principle for Zinc determination by AAS? (2)

[Diagram showing the principle of AAS with labeled parts: flow, cathode lamp, test solution, test, flame, medium test, etc.]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Salim Jawid

1. In iron spot test, iron is detectable in (1)
   - a. Oxidized form (ferric form)
   - b. Reduced form (ferrous form)
   - c. Both a and b
   - d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   - a. Trifluoroacetic acid
   - b. 1, 10 Phenanthroline
   - c. Antimony trichloride
   - d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   - a. Trifluoroacetic acid
   - b. Trichloroacetic acid
   - c. Antimony trichloride
   - d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   - a. 325nm
   - b. 550nm
   - c. 510nm
   - d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   - a. 325nm
   - b. 550nm
   - c. 510nm
   - d. 310nm

6. Mycotoxins are produced by .......... (1)
   - a. Bacteria
   - b. Yeast
   - c. Molds
   - d. None of the above

Marks: 20
Date: 11/10/17
7. Zinc can be determined by ......................... method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ................ detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

12. instrumentation of HPLC with their functions? (2)

   a. Phar mobil
   b. Bootel
   c. Pip station
   d. Injec of sample
   e. Culum
   f. detector
   g. need material
   h. wast material
13. Qualitative analysis of vitamin A in wheat flour? (2)

3 ml chromogenic extract + 2 ml soap produces color

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

- NaHPO₄
- KHzPO₄
- KCl
- NaCl
- poly surfact 20%

15. Principle for Zinc determination by AAS? (2)

Monochromator

Detector

Data processor

Hollow Cathode lamp

Nebulizer
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Ghulam Naqshband

Marks: 20
Date: 11-10-2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   x b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   x b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichloroacetic acid
   c. Antimony trichloride
   x d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   x c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   x d. 310nm

6. Mycotoxins are produced by ........... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   x d. None of the above
7. Zinc can be determined by method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)
    3gm of sample → 30ml ethanol → 3ML vit-C 10% → 4ML KCl H 50% → water bath → evaporator

12. Instrumentation of HPLC with their functions? (2)
13. Qualitative analysis of vitamin A in wheat flour? (2)

3 mL chromogenic (5bCl3) + 2 mL sample in the test tube

Blue colour is vit-A

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

Fungi → yeast

mold → mycotoxin

B1 B2 G1 G2 → Total aflatoxin

15. Principle for Zinc determination by AAS? (2)

Hollow cathode lamp → Flame → Nebulizer → Test solution → Monochromator → Detector → Data Processor
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Basir Ah

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   b. 1,10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by .................. method. (1)
   a. UV – Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus fecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ................. detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

   1. Get sample -> 3 mol ethanol -> 3 mol Vit C (10Y).
   2. Add H2O 50 Y. -> Water bath -> evaporator

12. Instrumentation of HPLC with their functions? (2)

   1. Mobile phase and degasser
   2. Pump
   3. Injector
   4. Column
   5. Detector
   6. Computer for show data.
13. Qualitative analysis of vitamin A in wheat flour? (2)

3.4 g of Antimony Trichloride ($SbCl_3$) → add to 300-400 ml chloroform ($C_6H_5Cl$) dissolved → 5 g of acid → dissolve → produce. Heat → filter the solution then rack → produce. Heat → filter and add chloroform (500 ml) then → $SbCl_3$ → the filter and add chloroform (500 ml) then → produce blue color then 15 ml of sample add → produce blue color if blue color is vit A present.

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

Fungi → Yeast → Mold → Mycotoxin → B1 B2 G1 G2 Total Mycotoxin

15. Principle for Zinc determination by AAS? (2)
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Safaudeen

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichoroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by ........... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above

Marks: 20
Date: 11-10-2017
7. Zinc can be determined by ................................ method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus fecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamin

10. Vitamin B1 can be determined by HPLC with ............. detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

12. Instrumentation of HPLC with their functions? (2)
13. Qualitative analysis of vitamin A in wheat flour? (2)

```
bromochromogenic (5bCO3)
+ sample in it the test tube
```

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

```
Na2HPO4
KCl
MgCl2
PolySorbite 20 %
```

15. Principle for Zinc determination by AAS? (2)

[Diagram of instrument setup]
Post-assessment Sheet for Trainee

Topic: Proximate analysis of Salt, Fats & Oil and wheat flour

Duration: August – October 17

Name of Trainee: Nazia Ahmad

Marks: 20

Date: 19. Oct. 2017

1. In iron spot test, iron is detectable in (1)
   a. Oxidized form (ferric form)
   b. Reduced form (ferrous form)
   c. Both a and b
   d. None of the above

2. In Quantitative analysis of iron, which chromogen is used (1)
   a. Trifluoroacetic acid
   b. 1, 10 Phenanthroline
   c. Antimony trichloride
   d. All of above

3. Chromogen reagent used for Qualitative analysis of vitamin A (1)
   a. Trifluoroacetic acid
   b. Trichloroacetic acid
   c. Antimony trichloride
   d. All of above

4. Wavelength for the determination of iron in spectrophotometer (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

5. Wavelength for the determination of vitamin A in spectrophotometer for Fats & oil (1)
   a. 325nm
   b. 550nm
   c. 510nm
   d. 310nm

6. Mycotoxins are produced by .......... (1)
   a. Bacteria
   b. Yeast
   c. Molds
   d. None of the above
7. Zinc can be determined by ......................... method. (1)
   a. UV - Spectrophotometer
   b. Atomic absorption spectrometry
   c. Mass Spectrometry
   d. HPLC

8. Reference culture for determination of Vitamin B12. (1)
   a. Lactobacillus casei
   b. Lactobacillus leichmanii
   c. Streptococcus faecalis
   d. None of the above

9. Chemical name of Vitamin B1. (1)
   a. Thiamin
   b. Folic acid
   c. Riboflavin
   d. Cyanocobalamín

10. Vitamin B1 can be determined by HPLC with ................. detector. (1)
    a. Absorbance
    b. Fluorescence
    c. Electrochemical
    d. None of above

11. Write sample extraction procedure for determination of vitamin A by HPLC method? (2)

    2-3 g S + 30 ml Methanol + 3 ml Ascorbic acid 10% + 4 ml KOH 5%, Add in round bottom flask into water bath off the transfer in separating funnel 3 times by 0.8
    Then Ether Extract in last time the work by water check it

12. Instrumentation of HPLC with their functions? (2)

    1. Pump
    2. Injector
    3. Column
    4. Detector
13. Qualitative analysis of vitamin A in wheat flour? (2)

Dissolve flour + 20 mL D. W. Vortex \( \frac{\varepsilon}{2} \) to 2 L. Prepare vortex + Hexane + 20 mL of 1 L. Separate two layers and is thick. Take in one test tube. Produce blue colour.

14. Write the principle of ELISA for the detection of Mycotoxins? (2)

S/ Milk, after centrifuge take 0. 1 mL from below layer. Fixated in plate is standard after that and sample memant (Antigen) in plate is Antibody. Mix it and take from this by pipette (not)

15. Principle for Zinc determination by AAS? (2)

Test portion is dried. Read it is taken.
II) P. P (Phenolphthalein) not give pink color 
filter transfer to evaporator ballon up to evaporate 
-- flestic washcol the ballon by Salporet (Hexanol) 
and read 325 n.m.