DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

EXAMINATION REVIEW COMMITTEE (ERC)

Policies and Guidelines

2014
EXAMINATION REVIEW COMMITTEE

POLICIES & GUIDELINE

PREPARED BY:

JOSEPHINE C. MILAN, RMT, MSMT
Chairperson

RODIGELIO F. ALFONSO, Ph.D.
Member

MARIAN M. EUSOYA, Ph.D.
Member

EDITED & ENDORSED BY:

BERNARD C. SILVALA, Ph.D.
Department Head/
Supervisor

ERAM HUSAIN, Ph.D.
Supervisor (Female Division)

APPROVED BY:

FAISEL M. ABU-DUHIER, Ph.D.
Dean

Version 3, 1st Edition
November 2014
FOREWORD

The Examination Review Committee (ERC) is organized under the direction of the Dean of the Faculty of Applied Medical Science in the First semester, AY 2014-2015.

The first members of the Committee are consist of Ms Josephine C Milan, Dr. Rodigelo F. Alfonso, and Dr. Marian M. Eusoya.

The ERC is thought of as a collegial body. It recognizes the shared responsibility amongst the members of the Faculty and Administration in the Department of Medical Laboratory Technology to do their specific roles in the examination process.

The ERC serves primarily to set the Policies and Guideline (P & G) for the standardization of the test questions used in the examinations. The ERC upholds academic freedom and professional responsibility of each of the Faculty member to prepare and formulate his / her own questions in the examination.

The examination questions reflect the objectives of the teaching-learning process. The response of the students should impress the outcome of this process, and indicates if the objectives have been achieved.

Along this line of endeavor, there are programs lined up for enrichment and capability enhancement in our academic roles. These undertaking are in cooperation with the Continuing Education Committee, and Accreditation and Quality Assurance Committee.

The ERC wishes to encourage everyone in the Faculty of Medical Laboratory Technology Department to adapt, support and sustain the P and G of the ERC.

Should in case in the future time that new members will be tasked to be in the ERC, the novel contributions of the ERC 2014-2015 and MLT Supervisors, Dr. Bernard C Silvala and Dr. Eram Husain would be recognized and alluded to.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Rationale of organizing the ERC</td>
<td>1</td>
</tr>
<tr>
<td>II. Composition of the ERC</td>
<td>1</td>
</tr>
<tr>
<td>III. Tasks</td>
<td></td>
</tr>
<tr>
<td>A. ERC Main Tasks</td>
<td>1</td>
</tr>
<tr>
<td>B. Faculty &amp; Coordinators’ Counterpart Tasks</td>
<td>2</td>
</tr>
<tr>
<td>C. Department Supervisors’ Tasks</td>
<td>3</td>
</tr>
<tr>
<td>D. Department Supervisors &amp; Year Level Advisers’ Tasks</td>
<td>3</td>
</tr>
<tr>
<td>E. Dean, Department Head, &amp; Council for MLT Tasks</td>
<td>3</td>
</tr>
<tr>
<td>IV. General Guidelines on the Examination Questions</td>
<td>3</td>
</tr>
<tr>
<td>A. Table of Specifications</td>
<td>3</td>
</tr>
<tr>
<td>B. Types of Questions</td>
<td>4</td>
</tr>
<tr>
<td>C. Categorizing Questions According to Levels of Difficulty</td>
<td>5</td>
</tr>
<tr>
<td>D. Coverage of Topics within the Periodical Examination</td>
<td>5</td>
</tr>
<tr>
<td>E. Determining the Number of Questions under What Topics in the Chapter</td>
<td>6</td>
</tr>
<tr>
<td>F. Test Construction and Formulation</td>
<td>6</td>
</tr>
<tr>
<td>G. Assigning the Points on the Questions, and Exam Scores Congruent With the Marks</td>
<td>10</td>
</tr>
<tr>
<td>H. Examination Format</td>
<td>11</td>
</tr>
<tr>
<td>V. ERC Review Process</td>
<td>12</td>
</tr>
<tr>
<td>VI. Security of Test Questions and Examination Papers</td>
<td>13</td>
</tr>
<tr>
<td>VII. Post Examination Evaluation</td>
<td>13</td>
</tr>
<tr>
<td>IX. Attachments</td>
<td>14</td>
</tr>
</tbody>
</table>
I. RATIONALE

The Medical Laboratory Department is committed to quality education. The teaching-learning process is indeed an essential component of quality education. One way of measuring this process effectively is evaluation of tests and examinations. Thus, the Examination Review Committee (ERC) is established to set guidelines to standardize the examination procedure. This will also monitor the quality of student assessment process through the use of appropriate evaluative tools that must be suitable for the intended learning outcomes. Moreover, this endeavor is designed in response for the program to be consistent with the National Qualifications Framework to demonstrate quality teaching and program effectiveness.

The ERC is a collegial body. The examination procedure is not only the work of the ERC, but that the entire Faculty and Coordinators have their counterpart in the committee functions. Just as well with the Dean, Department Head and Supervisors, the Council, and Year level advisers to render administrative supervision of the examination. Everyone is involved, and is expected to do his/her counterpart roles in order to make the ERC function effective. The success of the ERC is measured by the attainment of the objectives of the teaching-learning process.

II. COMPOSITION:

Chair: Ms. Josephine C. Milan
Members: Dr. Rodigelio F. Alfonso
Dr. Marian M. Eusoya

The above-named composition is applicable within the AY 2014-2015. The term of office of the ERC depends on the designation of the Dean.

III. TASKS

A. ERC MAIN TASKS

The main task of the ERC is to qualify and validate the examination questions, in terms of:

1. agreement vis-à-vis the table of specifications (TOS)

2. conformity to the approved (by the MLT Department) guidelines of the exams, particularly referring to the types of questions, number of items, total marks, cognitive processes of learning (in reference to the TOS), and level of difficulty.
3. structure and construction of the test questions.

(Please see attached sample of TOS)

ERC SPECIFIC TASKS

1. The evaluation of the examination questions in the different courses offered in the current semester is distributed accordingly among the ERC members.

2. The ERC evaluation function will be unbiased. This means, the course handled by the ERC member will be checked by another member.

3. The ERC will review and approve the examination questions if these are found compliant within the established guidelines. Thereafter, the examination questionnaires will be forwarded for final approval by the Supervisor who will endorsed the exam for printing.

Please refer to the attached flowchart.

4. The ERC prepares the policies and guidelines (P & G) to be followed in the construction of test questions for the Mid Term and Final examinations.

B. FACULTY and COORDINATORS COUNTERPART TASKS

The counterpart tasks of the Faculty members and Course coordinators consist the following:

1. The Faculty member handling the course will prepare the test questions within the coverage of the CSTF reflected on the table of specifications (TOS).

2. The questions will be initially categorized according to the cognitive processes of learning, such as:
   - Remembering [Rem] or knowledge (simple recall)
   - Understanding [Und] or comprehension
   - Applying [Ap] or application
   - Analyzing [An] or analysis
   - Evaluating [Eval] or judgment
   - Creating [Crea] or synthesis

3. The questions will be initially categorized according to the level of difficulty, such as:
   - Easy (Eas)
   - Moderate (Mod)
   - Difficult (Dif)

4. The faculty member should construct the test questions in correct grammar and structure.

5. The faculty members both in the male and female divisions should coordinate to come up with a unified test questions for the exams. The Faculty Coordinator facilitates this task.

6. The unified examination questions are submitted in soft copy to the ERC (use ERC email address) within the specified period for review and evaluation.
   a) The course coordinator in the female division shall take charge of forwarding the unified exam questions to the ERC for the Mid term examination; and the male course coordinator
for the Final exams. This coordination is recommended to avoid being remiss about the submission.

7. The Faculty member will print the questionnaires in accordance to the printing guidelines issued by the Department Head.

8. The Faculty assumes responsibility in ensuring the security and confidentiality of the exams (no leakage of questions, no loss of exam papers).

C. DEPARTMENT SUPERVISOR’S (MALE AND FEMALE) TASKS

1. The Department Supervisors will receive the reviewed and approved exam questions from the ERC in soft copy.

2. The Supervisors will approve (stamp) and affix signature to the original copy of the exam questionnaire if its entirety is found meritorious as per Departmental guidelines. Thereafter, the Supervisors will forward the approved questionnaires to the Faculty coordinator for printing.

3. The Supervisors will ensure the availability of printing requirements of exam questions as well as the conditions to ensure the integrity of the examination proceedings.

D. DEPARTMENT SUPERVISOR AND YEAR LEVEL ADVISERS’ TASKS

1. To prepare the examination schedule in all year levels, both Theory and Practical.
2. To disseminate the information on the schedule of exams early enough once it is approved. This will be the basis for setting the deadline of submission of exam questions for ERC review.
3. To supervise the conduct of the examination.

E. DEAN, DEPT HEAD, AND COUNCIL FOR MEDICAL TECHNOLOGY’S TASKS

1. To approve the policies and guidelines of the ERC and other policies related thereto, for implementation.
2. To approve the schedules of examinations.
3. To render supervision overall the ERC and its co-participants’ functions.

IV. GENERAL GUIDELINES ON THE EXAMINATION QUESTIONS:

A. TABLE OF SPECIFICATIONS (TOS)

1. The TOS is prepared / adapted from the CSTF (Syllabus) of the Course.

2. The learning objectives (at the heading) and the topics within the chapter or unit (on the left side below) should be reflected in the TOS, vis-à-vis the different categories of cognitive learning (on the main matrix).

Please see attached format of TOS.

3. The cognitive processes of learning consist of the following:
   - Remembering [Rem] or knowledge (simple recall)
   - Understanding [Und] or comprehension
   - Applying [Ap] or application
   - Analyzing [An] or analysis
- Evaluating \([\text{Eval}]\) or judgment
- Creating \([\text{Crea}]\) or synthesis

The learning objectives in the TOS will be the guide when these cognitive processes are utilized in formulating the questions. Having these in mind, the questions will be diversified, avoiding too many simple recall (too easy exam) or too many analytical (difficult exam).

4. The type and number of the question is classified under each level of cognitive learning (column), specifying its location within the different types of the exam questionnaire. Example: MCQ #7 under Remembering.

Please see attached format of sample questionnaire.

*Note: The bulk of reviewing / qualifying the exam questions rests on the agreement of the questions within the objectives of the Unit/topics in the unit vis-à-vis the cognitive processes of learning.*

**B. TYPES OF QUESTIONS in the MIDTERM and FINAL EXAMS**

1. The *types of questions* and their *item number distribution* in the Midterm and Final exams are as follows:

<table>
<thead>
<tr>
<th>TYPES OF QUESTIONS</th>
<th>MIDTERM EXAM</th>
<th>FINAL EXAM</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. Multiple Choice</td>
<td>20-25</td>
<td>30-35</td>
</tr>
<tr>
<td>II. Others: Matching type, True or False, Identification or Fill-in-the Blanks, Enumeration (list down items)</td>
<td>15-20</td>
<td>25-30</td>
</tr>
<tr>
<td>III. Essay/ Short notes, Case study, Problem solving with calculations, Illustration</td>
<td>3-5</td>
<td>3-5</td>
</tr>
<tr>
<td>TOTAL ITEMS</td>
<td>45-50</td>
<td>60-70</td>
</tr>
</tbody>
</table>

2. The number of items should be within these ranges of questions given. No less or more than the prescribed numbers of the questions will be formulated.

3. The multiple choice questions (MCQ) can include those of simple recall, understanding, or application of concepts and analysis. The level of difficulty asked in MCQ can range from easy to difficult.

4. The other types of questions in category II can include questions similar to MCQ covering the different levels of cognitive learning and levels of difficulty.

5. The essay questions should invite critical thinking, rationalization, or synthesis or creating concepts, or evaluating such concepts.

**C. CATEGORIZING THE QUESTIONS According to LEVELS OF DIFFICULTY**
1. The 3 levels of difficulty of the questions, and the distribution of items within each level are as follows:

<table>
<thead>
<tr>
<th>LEVEL OF DIFFICULTY</th>
<th>% DISTRIBUTION OF ITEMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Easy</td>
<td>35 %</td>
</tr>
<tr>
<td>2. Moderate</td>
<td>50%</td>
</tr>
<tr>
<td>3. Difficult</td>
<td>15 %</td>
</tr>
<tr>
<td>TOTAL</td>
<td>100%</td>
</tr>
</tbody>
</table>

Rationale: A well-prepared examination consists these three levels of difficulty, to provide a clear separation of the bright students from the average ones; or differentiating those students who prepared themselves well for the exams, from those who did not. The examination cannot be too easy nor too difficult for the students, that is why there is greater bulk for the moderate type of questions. Even if there is subjectivity in initially classifying a question as easy or difficult, still there is merit in taking this guideline in making the test questions. This is further supported by the statement “that the six major categories of cognitive processes starting from the simplest to the most complex can be thought of as degrees of difficulty. That is, the first ones must normally be mastered before the next one can take place. (Source: http://www.nwlink.com/~donclark/hrd/bloom.html)

2. To determine specific number of items based on percent (%) distribution, the following is a guide:

Example: You need to prepare a total of 25 MCQ for the Midterms:
   - Easy – 35% of 25 = 0.35 x 25 = 8.75, so, this means you can prepare 8-9 questions in MCQ that are easy.
   - Moderate – 50% of 25 = 0.5 x 25 = 12.5 = 12-13 questions
   - Difficult – 15% of 25= 0.15 x 25 = 3.75 = 3-4 questions

Another example: You need to prepare a total of 50 questions for the Mid Terms.
   - Easy – 35% of 50 = 0.35 x 50 = 17.5 = 17-18 questions which can be distributed among MCQs, true or false or matching type, fill-in-the-blanks, etc.
   - Moderate – 50% of 50 = 0.5 x 50 = 25 questions
   - Difficult – 15% of 50 = 0.15 x 50 = 7.5 = 7-8 questions

3. The questions categorized according to the level of difficulty are based on the levels of cognitive process, such as:
   - Easy (Eas) – covers Remembering or knowledge (simple recall of previously learned information).
   - Moderate (Mod) – covers Understanding, and Applying levels of learning
   - Difficult (Dif) – covers Analysis, Evaluating and Creating levels of learning

4. The level of difficulty of each question is carried, and reflected in the TOS table.

**D. COVERAGE OF TOPICS WITHIN THE PERIODICAL EXAM**
The CSTF of the course serves as the basis for the coverage of topics to be included in the periodical examination. It is recommended that all the chapters are covered evenly, meaning questions are formulated representing the major topics within the chapters. Of course, the relevance of the subject matter is also given consideration in formulating the questions.
E. DETERMINING NUMBER OF QUESTIONS UNDER WHAT TOPIC IN THE CHAPTER.

The Faculty members and Coordinator responsible for the course have the option to determine how many questions can be asked under a topic / subject matter depending on relevance and coverage.

F. TEST QUESTION CONSTRUCTION AND FORMULATION

The ERC recognizes the academic freedom and professional responsibility of every Faculty member to formulate his/ her own questions in the exams. The manner in which the questions are asked depends upon how the lessons were presented during class discussion. Thus, as much as possible, the ERC will try not to change the idea of the question during editing. If editing would be necessary, it would only be on the structure or construction of the question. Suggestions are also given how to improve the questions for the better.

The Faculty member should take adequate time to prepare the questions in the exam; the exam is not done overnight prior to the submission date. Plenty of time is needed to review the objectives of the lessons, preparing the TOS, and judiciously formulating and asking the right questions.

General Guidelines:

1. The questions are formulated, guided by the learning objectives specified in the unit/topics. Refer to the CSTF of the course.

2. The subject (object) being asked about in the question must be definite and clearly described. (This means, is it a substance, a chemical reagent, an event, a phenomenon, a principle, a color, a structure, a particle, a part of the body, a part of the cell, a process, a test method, etc. that is being asked about in the question?).

3. The questions are stated in a definite manner (not as an open-ended question). Otherwise, the student will be guessing what is being asked. Moreover, the student might have a different perspective from the Faculty member about what is needed in the question.

4. The questions are constructed with correct grammar, and stated in a sentence with a complete thought.

5. Questions are stated simply, using simple or common words to drive what is desired in the question. Flowery, complex words should be avoided, unless these are technical terms related to the subject matter.

6. The reading level is appropriate to the understanding of the students. (Consider the English proficiency of the students).

7. Acronyms (examples AST, DNA, CM, CSF) are avoided in stating the question, rather that, the complete words are used and enclose the letters in parenthesis if these are needed to be used quite often in the exam.

8. It is better to express the questions in a positive mood; avoid double negatives because these are confusing.
9. As much as possible, the questions should be formulated freshly per every exam. The recycling of questions given in the past examination is discouraged. However, if a question is deemed important and needs to be asked again, a slight modification should be introduced.

10. Questions are not lifted/copied verbatim from the book/presentations or examination reviewers (This practice is called plagiarism and a violation of intellectual property rights or breach of copy rights of the owner of the questions or the books). Hence, the questions should be constructed by the own idea of the faculty member.

11. A question that is already asked in a previous type (example in MCQ) is not repeated in another type, or elsewhere in the questions (example, in fill in the blanks).

12. The total points in each type of questions are indicated (enclose in parentheses). (See examples below).

13. Directions in the test should be given clearly. (See the examples below)

Examples:
I. Multiple Choice. (25 points)
   Direction: Select the BEST answer from the choices given.

II. Identification. (10 points)
   Direction: Name or identify the cell parts being described.

III. True or False. (10 points)
   Direction: Write the word TRUE if the statement is correct, or FALSE if it is wrong.

Note: True or False questions can be MODIFIED to enhance thinking process, rather than guessing only as true or false.

The following tips are quick references only while the questions are being formulated. The techniques and details of constructing test questions are discussed in a seminar-workshop on Test Construction.

 **Brief Guidelines in writing Multiple Choice Questions (MCQ):**

1. The stem of the question can be in the interrogative form or incomplete statement form, provided, the subject being asked is clearly stated.

2. Ensure that the stem asks a clear question and contain only one main idea.

3. The options or choices should be homogenous, meaning the choices are related to one another.
   The answer and distracters are all related to the stem of the question. Avoid an unrelated distracter because this becomes obviously not the answer.

4. Only one option/choice should be correct or clearly the best.

5. The choices or options are stated nearly equal in length. A very long statement gives the clue it might be the answer.

6. The number of choices in the MCQ ideally is 4, however 5 choices may be given (A, B, C, D) if so desired. More than 5 choices will only confuse the student.
7. Letter choices/ answers should be given in capital letters (A, B, C, D). This is to avoid vagueness/ ambiguity with small letters which may appear as “a” or “c”, “b” or “d” when the student writes down the answer.

8. Avoid using “none of these” as a choice in MCQ. Because logically, a question with no answer should not be asked. A “none of these” should not be the chosen answer, either.

9. The “all of these or all of the above” choice may be given as a last choice (D), although this may be used sparingly. When it is used, do not make it always the correct answer.

10. If terms like never, not, except, least likely or most likely are used in the stem of the question, these words should be emphasized by italics, capital letters, or bold letters, or underlined. Negative statements should be used sparingly.

11. The options are arranged logically from a content standpoint. Example, chronological order when numerals are used (such as in values, counts, etc.)

12. To emphasize the stem of the question apart from the choices or options, this may be made darker, or written in bold letters.

**Brief Guidelines in Writing True or False Test:**

1. True and False questions often invite some form of understanding and analysis of certain concepts. So, the question must be not be formulated like a simple guessing game. It suggested that a modified true or false instead, can be done.

2. Each statement is clearly a true or clearly a false. It can not contain components in the questions that are partly true, and partly false.

3. Exact quantitative (two, three, four) term is better than qualitative (some, few, many).

4. Give a definite instruction to write the words TRUE or FALSE, rather than “T” or “F”, or “/” (check mark) or “x” (wrong mark).

5. Avoid long or complex sentences.

6. Include more false than true statements in any given test and vary the number of false statements from test to test.

7. Avoid the answers coming in a pattern. Example: True, False, True, False; or True, True, False, False. Or all True or all False.

8. Avoid using specific determiners which usually gives a clue to the answer
Examples: False: all, always, never, every, none, only
True: generally, sometimes, usually, maybe, often

**Brief guidelines in writing Matching Type / Headings**
1. Matching type requires 2 (or more) columns where the items find their match in the choices in column II, (and in additional columns, as the case may be).

2. Headings have choices of 4 to 5 which may consist of set of principles, or body parts or system parts, and the items find their match from the headings above. This is suitable so that grouping of items can be done, rather than the items and choices given in a smorgasbord (mix up).

3. Directions clearly indicate the basis of matching. Indicate also if choices can be used more than once or not.

4. The list of responses should be relatively short.

5. Position of matches should be varied. Avoid using patterns.

6. The choices of each matching set should be on one or the same page of the questionnaire. This means, the choices are not cut and the continuation is in the next page.

7. There are more choices / responses than the premises in a single set; not an exact number of choices match with the number of items.

8. The premises are homogeneous as well as the responses and are grouped as one item.

9. Capital letters (A, B, C, D, E etc.) of the choices are used.

**Brief guideline in writing Fill in the Blanks or Identification.**

1. The question can be in interrogative form (what is …), or a sentence statement which asks for something in the blank.

2. The question asks for something that is definite.
   Example: Molisch test consists of ____ and ____. (This is a vague question).
   What are the reagents used in the Molisch test? ___, ____. (this is more clear).
   Or: The chemical reagents used in the Molisch test are ____, ____.

3. The question does not start with a blank. The premise of the question should be given clearly first.

4. Sentences are short to moderately long.

5. Provide enough space to write on the answers.

**Guide questions in Writing Enumeration:**

Enumeration question entails quantitative knowledge of the subject matter. Thus, the question would ask for 3 or more answers.

1. The question asks for definite required answers.

2. This type can be used to ask for a sequence of steps or arranging concepts in correct order. The premise should be made clear.
3. The answers in the enumeration type should not appear elsewhere in the questionnaire, such as in the multiple choices.

**Guidelines in Writing Essay Questions**

Essay questions invite critical thinking, analysis, ability to judge or evaluate, rationalize, synthesize concepts in a cohesive manner, or apply the principles; these measure the higher cognitive process.

1. The Restricted Response essay question is recommended, because it is more specific, easier to score, and has improved reliability and validity.
2. The essay should not describe a case where it might be too long to read (time constraint), or complicated to be understood by the students. In a case study, break down the questions more simply.
3. Critical words to use: compare, contrast, analyze, evaluate, etc.
   
   The terms of differentiation or discussion must be indicated.
   
   Example: Using a table/ Venn Diagram, compare and contrast mitosis and meiosis in terms of the following:
   
   a. type of cell where the process occurs
   b. number of cell divisions
   c. number of chromosomes in parent cell and daughter cells.

4. Flow diagram/flow chart can be used to ask for a process or a series of steps, or a cycle.

5. The number of essay items asked to be answered must be specified;
   
   Example: “Answer the following essay questions”, rather than instructing “answer 3 out of 5 questions”. This ensures the same level of (uniform) evaluation of the students’ capability.

**G. ASSIGNING THE POINTS ON THE QUESTIONS, AND EXAM SCORES CONGRUENT WITH THE MARKS.**

1. Ideally, the assigned points in the questions consists of:
   
   a. Objective type = 0.5 to 1 point per item answer or question
   b. Essay type (depending on the question and level of difficulty) = 2 to 5 points per question

2. The total points per type of question in the examination should be reflected enclosed in parenthesis beside the type of test.
   
   Examples:
   
   - Test I. MCQ (25 points)
   - Test II. True or False (10 points)
   - Test III. Essay.
     
     Q. 1 ……. (2 points)
     Q. 2…….. (3 points)

3. Based on the approved Grading System, the equivalent points in the types of questions is easy to match with the required marks.

Example:

   Required Marks for Theory in Mid term exam = 20 marks
   Total **items** in the Mid Term exam = 50.
   Total **points** in the exams = 65

Computation:
Equivalent Mark for Theory in Mid Term = raw score of the student divided by total points of exam, then multiply by 20.

Example: Raw score of student is 58.
\[
\text{So, } \left( \frac{58}{65} = 0.892 \right) \times 20 = 17.84 \text{ marks.}
\]

4. Assigning marks per question rather than points is difficult (and cumbersome), considering that the total marks in the Midterm is 20, while 40 marks for the Finals exams. This means, per objective item would fetch 0.2 or 0.25 mark; essay question would fetch for 1 mark. Thus, the chance for the answer to merit a fraction of a mark for consideration purposes due to inadequate answer would be discounted.

H. EXAMINATION FORMAT:

1. The format or layout of the exam questionnaire adapted by the Department should be uniform, as much as possible.

   Please see attached sample of exam.

   **Note:** A column or space on the left of the questions is used as area where to indicate the cognitive levels and levels of difficulty. These are used for the purpose of ERC review only. Before printing the approved questionnaire, these classifications should be deleted. Alternatively, the space can be used by the students to write down their tentative answers, or final answers if so desired.

2. The overall picture of the exam questionnaire should be “*light and free*”, meaning, it is not congested, or cramped. This affects the mental disposition of the examinee.

3. It is ideal to leave a single space between questions/ numbers.

4. A separate answer sheet may be prepared for the students to write on their answers; or a space for the answers may be provided within the questionnaire itself.

   A table for the MCQ gives convenience in checking the answers, however, this can be inconvenient for the student to be turning the pages to and fro while writing down the final answers on the table; moreover, there is always the risk for transcription errors to occur.

5. To acknowledge the authorship of the faculty member who prepared the questions, his/her name/ initials can be placed in the footer, or can be written on the bottom part of the last page, such as:
   
   Prepared by: _____ and _____ (being unified).

6. The phrase “end of exam” is indicated after the last question, on the last page of the questionnaire.

7. Paging of the questionnaire is made, preferably stating the specific page over the total number of pages. Example: “page 1 of 5”.

8. The official cover page of the University of Tabuk for the examination question will be adapted.

V. ERC REVIEW PROCESS:

1. A flowchart is implemented in the review process.
Please see attached Flowchart.

2. The period of submission, review, returning of approved exam questionnaire and printing is stringently followed.
   a) The period of submission is given by a directive or memorandum by the Dept. Head.
   b) The review period is 8 to 16 working hours after initial sending.
   c) If the questionnaire is returned to the Coordinator for improvement or corrections, the return submission is within 8 working hours.
   d) Reviewed examination papers are relayed to the Supervisors within 16 to 32 working hours after submission by the Course coordinator for review.

3. The exam questions with accompanying TOS are submitted in soft copy to the ERC by either the male or females course coordinator, provided that the counterpart is copy-furnished.

4. The ERC review of the exam questionnaire will consider the following:
   a) the questions reflect the learning objectives of the subject matter, in reference to the TOS.
   b) the questions are classified with the categories of cognitive learning and levels of difficulty. (In the questionnaire, these classifications are reflected in a column beside the questions.)
   c) the questions are in varied types (MCQ, matching types, essay, etc…)
   d) the number of questions comply with the directives of the Department
   e) the questions are stated in correct grammar and structure.
   f) the exam questionnaire is in the right format.

5. Editing the question, if necessary, will involve the least possible modification, to ensure that the real idea of the question will not be changed. The concerned Faculty member / Course coordinator should feel free to communicate with the ERC (through email) if they feel their concept (in the question) has been changed.

6. A vague question will be referred back to the Course coordinator for reconstruction / correction immediately within the review period. Thereafter, the corrected questionnaire is sent back to the ERC to resume its review of the paper. This process still involves the soft copy of the exam.

7. Reviewed exam questionnaire will be sent in soft copy to the Supervisors within 24 to 32 working hours of the review period.

8. The Supervisor prints a copy of the reviewed questionnaire, affix signature and stamp the approval. Then, the hard copy is given to the Course coordinator for printing in accordance to the printing directive of the Department.

8. Late submission of exam questions (beyond the submission period) is discouraged. In such case, the matter is referred to the Supervisor and Department Head. Unreviewed exam questions will not be endorsed by the Supervisors for printing.

9. In case no questionnaire is submitted, the matter is reported to the Supervisor and Dept. Head.

10. Decking for review of the exam questions will follow the “first come, first serve” basis.
VI. SECURITY OF TEST QUESTIONS and EXAM PAPERS
The integrity and confidentiality of the examination is crucial, and thus it is everybody’s concern.

1. The security of the test questions must be ensured primarily by the ERC during the review period, as well as the Faculty members and Course coordinators during their preparation and printing before the examination, as well as the Supervisors for its endorsement prior to printing.

2. Everyone is enjoined to be vigilant for leakages of test questions during the preparation of examination questions and examination period itself.

3. Examination papers of students are under the utmost care of the Faculty concerned.

VII. CONDUCT OF THE EXAM PROCESS

1. The conduct of the exam will follow the schedules approved by the Dean and Department Head.

2. The Department Supervisors shall supervise the proceedings of the examination as the usual.

VIII. POST EXAMINATION EVALUATION
The post examination review is a means to derive a feedback about the nature of the examination, examination process, the level of difficulty, and this consists a relevant performance indicator of the teaching-learning process.

1. Determine the MEAN of the scores / marks of the students. This will reflect the overall performance of the class in regard to the examination.

2. Determine how many students passed the exams based on the approved minimum passing level of 60%.

3. Determine how many students got scores in ranges of 5 points in the scores, such as in the example below:

   Total points 100.
   >95 ............... How many students got these scores…
   90-94
   85-89
   75-79
   70-74
   65-69
   60-64
   55-69
   50-54
   45-49
   40-44
   35-39
   30-34
   Below 30

Example in terms of marks in ranges of 2-3.
(Example for Mid term: 20 marks)
19-20.......... How many students got these marks.
16- 18
13-15
10-12
7-9
4-6
1-3

Such data will give an impression if the exam is too easy or too difficult.

4. The examination is reviewed and rationalized in the class. The scores / marks are given to each of the student in a manner that upholds confidentiality and respect.

5. Take note how soon the corrected test papers are shown, discussed and rationalized in class after the exam (number of days after the examination date). This applies following the directive of the Department Head or Supervisors.

6. The checking and scoring of the test papers must be accurate.

7. Post examination evaluation also consists of item analysis and determining discrimination index of the examination. Orientation on these processes is in the program of the ERC.

Post examination review report is submitted to the Supervisors, QA committee (as part of the Course File) and the ERC. These reports will be utilized as basis for Continuing Faculty Development seminars and workshops. It will form part of the Course Report.

X. ATTACHMENTS

1. Sample TOS in the correct format and inclusions.

2. Sample examination questions.

3. ERC flow chart

4. Department Orders or Memoranda in regard to the examination.
Example: new grading system
Department of Medical Laboratory Technology

Examination Review Committee (ERC)

FLOW CHART IN THE PREPARATION OF THE EXAMINATION

Preparation of Table of Specification (TOS) (new format) by the Course Coordinators

Prepare a unified Test Examination approved both by Male and Female Coordinators with reference to the TOS and applying ERC P & G

Submit the soft copy of the unified type of exam to the ERC

ERC will check and evaluate according to ERC P & G

APPROVED by ERC

YES

ERC to submit Soft Copy to both Supervisors

Supervisor to print exam, sign and stamp every page then forward the hard copy to the Course Coordinator within 1-2 days

Production (Photocopying) of the Exam Papers by the Course Coordinator on or before the day of the exam

NO
# UNIVERSITY OF TABUK
## FACULTY OF APPLIED MEDICAL SCIENCE
### DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

## TABLE OF SPECIFICATION
### BLOOD BANKING (MLT 309) – FINAL EXAMINATION

## TOPIC: BLOOD TRANSFUSION PRACTICE, BLOOD COMPONENT PREPARATION AND THERAPY

### OBJECTIVES:
At then of the unit, the student is able to:
1. Indicate the different purposes of transfusion procedures.
2. Describe particular considerations in the preparation of specific blood components.
3. Describe the storage conditions, shelf-life, QC requirements and indications for use of the blood components and plasma products.
4. Validate the use of a component transfusion given a patient case.

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>CATEGORIES OF COGNITIVE PROCESS (DOMAINS OF LEARNING)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Remembering / Knowledge</td>
</tr>
<tr>
<td>1. Indications of blood transfusion</td>
<td>-</td>
</tr>
<tr>
<td>2. Methods of blood transfusion</td>
<td>-</td>
</tr>
<tr>
<td>3. Preparation of blood components and blood products</td>
<td>MCQ #7</td>
</tr>
<tr>
<td>4. Special treatment of blood components for special cases</td>
<td>Ident. # 3</td>
</tr>
<tr>
<td>5. Blood component therapy (Uses of blood components)</td>
<td>MT/ Headings #1,2,3</td>
</tr>
</tbody>
</table>

### TOTAL:
5 5 2 1 1 1 15

### Notes:
Required number of items in this chapter/unit = 15. This is based on the relevance of and coverage of the topics in the Finals period.

### Levels of difficulty:
- Easy = 35% → 0.35 x 15 = 5 items/questions.
- Moderate = 50% → 0.5 x 15 = 7.5 = 8 questions
- Difficult = 15% → 0.15 x 15 = 2 questions

---

ERC_SAMPLE 1_TOS
UNIVERSITY OF TABUK  
FACULTY OF APPLIED MEDICAL SCIENCE  
DEPARTMENT OF MEDICAL LABORATORY TECHNOLOGY

TABLE OF SPECIFICATION  
BLOOD BANKING (MLT 309) – FINAL EXAMINATION

TOPIC: BLOOD TRANSFUSION PRACTICE, BLOOD COMPONENT PREPARATION AND THERAPY

OBJECTIVES:  
At the end of the unit, the student is able to:  
1. Indicate the different purposes of transfusion procedures.  
2. Describe particular considerations in the preparation of specific blood components.  
3. Describe the storage conditions, shelf-life, QC requirements and indications for use of the blood components and plasma products.  
4. Validate the use of a component transfusion given a patient case.

<table>
<thead>
<tr>
<th>TOPICS</th>
<th>CATEGORIES OF COGNITIVE PROCESS (DOMAINS OF LEARNING)</th>
<th>TOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Indications of blood transfusion</td>
<td>Remembering / Knowledge</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Understanding/ Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying/ Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing/ Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating/ Judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating/ Synthesis</td>
<td></td>
</tr>
<tr>
<td>2. Methods of blood transfusion</td>
<td>Remembering / Knowledge</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Understanding/ Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying/ Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing/ Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating/ Judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating/ Synthesis</td>
<td></td>
</tr>
<tr>
<td>3. Preparation of blood components and blood products</td>
<td>Remembering / Knowledge</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Understanding/ Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying/ Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing/ Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating/ Judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating/ Synthesis</td>
<td></td>
</tr>
<tr>
<td>4. Special treatment of blood components for special cases</td>
<td>Remembering / Knowledge</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Understanding/ Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying/ Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing/ Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating/ Judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating/ Synthesis</td>
<td></td>
</tr>
<tr>
<td>5. Blood component therapy (Uses of blood components)</td>
<td>Remembering / Knowledge</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Understanding/ Comprehension</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Applying/ Application</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Analyzing/ Analysis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Evaluating/ Judgment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Creating/ Synthesis</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL: 5 5 2 1 1 1

Notes:  
Required number of items in this chapter/unit = 15. This is based on the relevance of and coverage of the topics in the Finals period.

Levels of difficulty:  
Easy = 35% \(\rightarrow\) 0.35 x 15 = 5 items/questions.  
Moderate = 50% \(\rightarrow\) 0.5 x 15 = 7.5 = 8 questions  
Difficult = 15% \(\rightarrow\) 0.15 x 15 = 2 questions
### I. MULTIPLE CHOICE: (35 POINTS) (including all other questions).

**Instruction:** Select the BEST answer from the choices given.

<table>
<thead>
<tr>
<th>App, Mod</th>
<th>1. In an extreme emergency situation requiring blood transfusion, what blood unit is most appropriate to use?</th>
</tr>
</thead>
</table>
|          | A. Type AB, Rh (+) whole blood
|          | B. Type AB, Rh (-) whole blood
|          | C. Type O, Rh (+) red cell concentrate
|          | D. Type O, Rh(-) red cell concentrate                                                                 |

<table>
<thead>
<tr>
<th>Rem, Easy</th>
<th>7. The amount of platelets in a random platelet concentrate is:</th>
</tr>
</thead>
</table>
|           | A. $5.5 \times 10^{10}$
|           | B. $7.5 \times 10^{10}$
|           | C. $3 \times 10^{11}$
|           | D. $5 \times 10^{11}$                                                                                     |

<table>
<thead>
<tr>
<th>Und, Mod</th>
<th>10. Which of the following conditions in preparing fresh frozen plasma (FFP) is NOT correct?</th>
</tr>
</thead>
</table>
|          | A. It is prepared and frozen within 12 hours from a freshly collected whole blood.
|          | B. Whole blood is collected for FFP preparation is collected with CPD or CPDA-1
|          | C. It is separated from red cells by heavy spin centrifugation.
|          | D. It is has a shelf life of 1 year at minus 18 °C.                                                       |

<table>
<thead>
<tr>
<th>Und, Mod</th>
<th>12. To prevent graft-versus-host reaction in an immunocompromised patient, a blood component unit is required to be:</th>
</tr>
</thead>
</table>
|          | A. irradiated
|          | B. deglycerolized
|          | C. washed with sterile NSS
|          | D. leukocyte-reduced                                                                                                |

<table>
<thead>
<tr>
<th>An, Mod</th>
<th>15. Which of the following components would the MLT prepare to treat a patient with hypofibrinogenemia, who is known to be deficient as well with other coagulation factors.</th>
</tr>
</thead>
</table>
|         | A. Fresh frozen plasma
|         | B. Cryoprecipitate
|         | C. Plasma frozen within 24 hours
|         | D. Recovered plasma                                                                                           |

| Eval, Dif | 18. A patient suffered massive bleeding due to an accident. The physician ordered initially 8 units of whole blood for transfusion. After a day, he also ordered , FFP and |
platelets. Rationalize the relevance of blood and blood components required for the transfusion. Which of these are correct?

1. Whole blood units are used to replace massive loss of blood immediately.
2. FFP is required to increase coagulation factors.
3. The platelets are given to enhance hemostasis.
4. FFP are used to expand blood volume.

CHOICES:
A. 1 and 3
B. 2 and 4
C. 1, 2, and 3
D. 1, 2, 3 and 4

Und, Mod

21. Quality control for a unit of red cell concentrate requires a hematocrit of __ to provide the benefit of transfusion.
   A. 30 - 40%
   B. 50 - 60%
   C. 70 - 80%
   D. 85 - 90%

Und, Mod

25. Which of the following are the reasons for blood transfusion?
   1. To replace blood loss.
   2. To increase the oxygen-carrying capacity of red blood cells.
   3. To replace deficient coagulation proteins.
   4. To remove toxic components in the blood such as bilirubin or immune complexes.

CHOICES:
A. 1 and 2
B. 3 and 4
C. 1, 2 and 3
D. 1, 2, 3 and 4

II. IDENTIFICATION (5 POINTS) (including all other questions).
Instruction: Name or identify the thing that is being described.

Rem, Eas
3. What is the cryoprotective agent that is used to prepare frozen red cells?

III. TRUE OR FALSE, MODIFIED (10 POINTS) (including all other questions).
Instruction: Indicate whether the statement is True or False. For every false statement, pick out the word(s) that make it false.

Und, Mod
2. Autologous blood involves only blood typing and no crossmatch prior to transfusion.

App, Mod
5. A platelet concentrate is stored under constant agitation at 2-8 °C.

IV. MATCHING TYPE: (10 POINTS) (including all other points)
Instruction: Find the match of the numbered items described below to the appropriate principle given in the headings. Write the letters properly.

Rem, Easy
3. Find the match of the blood component to the indications given in the headings.
   A. Volume expansion
   B. Treatment of anemia
   C. Bleeding due to Thrombocytopenia
   D. Hemophilia A
### E. Coagulation factors deficiency such as in DIC

1. Cryoprecipitate
2. Red cell concentrate
3. Fresh frozen plasma

### V. ESSAY

**Instruction:** Answer the following accordingly.

| Creat, Diff. | 1. Given a unit of whole blood, illustrate by means of flow diagram the preparation of red cell concentrate, platelet concentrate, fresh frozen plasma, and cryoprecipitate units. Indicate correct centrifugation process (heavy spin or light spin) as these are is used. (8 POINTS) |

---

**Note:**

1. The column on the left before the question is used to indicate the cognitive levels and level of difficulty. These are used for the purpose of ERC review only. Before printing of the approved questionnaire, these classifications should be deleted. Alternatively, the space can be used by the students to write down their tentative answers/ or final answers, if so desired.

2. Answer sheets separately prepared may be used, however, if so desired by the Faculty.