

**2013**

**M.Sc.**

**1st Semester Examination**

**BIO-MEDICAL LAB Sc. & MANAGEMENT**

**PAPER—BLM-101(U-2)**

*Full Marks : 40*

*Time : 2 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

*Answer all questions.*

**Module—I**

**(Quality Control of Laboratory Medicine)**

**(Marks : 20)**

1. Answer any five questions from the following : 1×5
- (a) What is precision in a Laboratory?
  - (b) What is the full form of PDCA?
  - (c) Define OCV.
  - (d) Diagrammatically show  $1_{2S}$  rule.
  - (e) What do you mean by False positive result?

*(Turn Over)*

- (f) For the calculation of positive predictive value of diagnostic test the denominator is composed of :
- (i) True Positives + False Negatives ;
  - (ii) False Positives + True Negatives ;
  - (iii) True Positives + False Positives.
- (g) Reliability of a test means :
- (i) Number of times same results of repeated trials ;
  - (ii) Content to measure accurately what it purports to measure ;
  - (iii) depend upon knowledge of observer.
- (h) External Quality control is related to :
- (i) Reference laboratory ;
  - (ii) Collaborative laboratory ;
  - (iii) Both of the above.
2. In a 'Bio-medical Laboratory' two sets of results of haemoglobin level are obtained from same sample by maintaining different condition :

Unit (gm/dl)

Set-I — Using Stock reagent

10, 11, 12, 12, 11, 13

Unit (gm/dl)

Set-II — Using Freshly prepared reagent

11, 10.5, 11.5, 10.5, 11.5, 11

Identify the error and interpret your result from the angle of quality control. 6+1+1

Or

A diagnostic test shows that out of 80 positive cases with this test, 40 actually had no disease with gold standard technique. Out of 9920 tested negative cases, 9840 actually had no disease by gold standard technique. Calculate the sensitivity, specificity, PPV & NPV of the diagnostic test.

2+2+2+2

3. (a) How do you check the calibration of a micropipette ?  
 (b) Why Westgard Rules are necessary for QC checking ?  
 (c) How do you prepare control serum ?

$2\frac{1}{2}+1\frac{1}{2}+3$

Or

- (a) What is the significance of external quality control analysis ?  
 (b) Describe the different modes of external quality control.

2+5

### Module—II

#### (Laboratory Management)

(Marks : 20)

4. Answer any five questions from the following : 1×5
- (a) What do you mean by Commitment ?  
 (b) What is the purpose of training in laboratory management system ?  
 (c) Write the full form of PERT.  
 (d) What is integrity ?

- (e) Mention the name of different components of TQM.
  - (f) What is the basic difference between cost-effective and cost-benefit analysis?
  - (g) What do you mean by monitoring?
  - (h) What is performance appraisal?
5. (a) Describe the nature of communication system and teamwork in a Biomedical laboratory.
- (b) Why sinage system is important for a Laboratory?
- (c) Write the statement of WHO regarding quality management system.

$5+1\frac{1}{2}+1\frac{1}{2}$

*Or*

- (a) What are the basic objectives of Cost-Accounting?
  - (b) Assess the contributions of Scientific management to the development of management thoughts.      3+5
6. (a) What is quality cost?
- (b) "Rectification of the internal failure cost is very much essential" — Justify the statement.      2+5

*Or*

- (a) Write the uses of 'PERT' and 'CPM' in management planning and control.
- (b) Assess the contributions of Henry Fayol to management thoughts.      2+5