

**B.Sc. IN MEDICAL LABORATORY
TECHNOLOGY (BMLT)/DIPLOMA IN
MEDICAL LABORATORY TECHNOLOGY
(DMLT)**

Term-End Examination

June, 2015

**BAHI-013 : AUTOMATION OF LABORATORY
SERVICES**

Time : 3 hours

Maximum Marks : 70

Note : (i) Attempt all questions.

(ii) Follow instructions under each question.

PART - A

1. Answer True (T) or False (F) of the following : 1x5=5

- (a) Standard Deviation (SD) is a statistical expression of values around a central average value and is determined by :

$$SD = \sqrt{\frac{(x - \bar{x})}{n - 1}}$$

- (b) Precision indicates how close test measurement are to each other when the same test is run on the same sample repeatedly.
- (c) Routine Condition Variance (RCV) and Optimum Condition Variance (OCV) are essential component of retrospective phase of internal quality control.

- (d) ISO- is a system of accreditation of laboratories, which is essential in laboratory management.
- (e) Enzyme Immuno Assay (EIA) is an assay that depends on antigen (Ag) and antibody (Ab) reaction as a base and the enzyme reaction as a marker.

2. Fill in the blanks :

1x5=5

- (a) Computer added decision making (CDM) has great potential for new hardware and _____ tools in laboratory medicine.
- (b) By a defined method, Optimum Condition Variance (OCV) is the _____ variance a laboratory can get on a known value quality control material.
- (c) The broad aim of the Q.C. is to fulfil the laboratory SOP for satisfaction of results comparable at _____ levels of laboratories outside.
- (d) _____ procedures are necessary to verify before start of tests in any laboratory.
- (e) _____ interface is required if you would like to interface the instrument to a laboratory computer.

3. Write briefly on **any five** of the following : **5x6=30**

- (a) Quality control in automated analysis.
- (b) Pre-analytical organisation of laboratories.
- (c) Ethical practices in laboratory
- (d) Medico legal aspects in laboratory management
- (e) Problems of laboratory management in information technology
- (f) Use of software systems in automated equipment for analysis

PART - B

Answer **any three** of the following :

4. What are advantages of high technology instruments used in haematology analysis ? Give a brief account of Q.C. programme in these equipments. 5+5=10

 5. Describe the selection criteria for semiautomated and fully automated biochemistry analysers in common use. Indicate reasons and justifications Vis-a-Vis conventional technology. 2.5+2.5+2.5+2.5=10

 6. Enumerate the parameters of check in blood bank organisation with reference to use of instruments. Give a note on non-ethical practices in blood bank organisation. 5+5=10

 7. What are biological reference values ? Give an account of common biochemical parameters in automated equipments. 5+5=10
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