

2013

M.Sc.

3rd Semester Examination

BIOMEDICAL LABORATORY SCIENCE AND MANAGEMENT

PAPER—BLM-302 (Unit-19)

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.

Module—I

(FUNDAMENTAL CLINICAL BIOCHEMISTRY)

1. Answer any *five* of the following : 1×5

- (a) What do you mean by cardiac marker ?
- (b) Write the full form of UPLC.
- (c) What is electrophoresis ?
- (d) Who invented polymerase chain reaction ?
- (e) Which wave length will you use to measure the concentration of DNA ?

(Turn Over)

- (f) Write the name of a reagent used to prepare protein free filtrate.
- (g) What is R_f in chromatography ?
- (h) Where urea cycle is operated ?
2. (a) How will you prepare serum for biochemical analysis ?
- (b) Give two examples of cardiac enzymes having diagnostic value. Describe how they are useful to determine the damage in heart muscle.
- 3+(2+3)

Or

- (a) Write the basic principle of gel electrophoresis.
- (b) How will you choose cuvette for spectrophotometer.
- (c) What are the limitations of Beer-Lambert's law ?
- 3+2+3
3. (a) Which components are required for PCR reaction.
- (b) Design primers to amplify the following DNA sequence and determine probable T_m .
- 5' G A A T T C G G A G A G G G C C T C T L A A
 G A C C C A G A G G A G A G A C A A T C T T A G
 A A C C A T T T T G C T A T C T C G C A G T G A
 G T G A C A G C C A A G G T C C T C C G G C T
 C G A G 3'
- 3+3+1

Or

- (a) Write the basic principle and application of HPLC. How it is classified according to different separation modes.
- (b) Which kind of mixtures can be analysed by paper chromatography and how they are detected.
- (1+2+2)+(1+1)

Module—II

(ADVANCED CLINICAL BIOCHEMISTRY)

4. Answer any five questions of the following : 1×5
- (a) Write the full form of LFT.
- (b) Give an example of transaminase?
- (c) Name two acute symptoms due to co toxicity.
- (d) What is the cause of gout?
- (e) Name two diseases associated with heavy metal toxicity.
- (f) What is the pH of human blood?
- (g) What do you mean by 'conjugated' bilirubin.
- (h) Which method can be used to estimate uric acid level?
5. (a) State the process for diagnosis and determination of carbon monoxide toxicity.
- (b) Describe the screening process of Hg toxicity.
- 4+4

Or

- (a) Write down the principle for determination of blood glucose.
- (b) What do you mean by creatinine clearance rate?
- (c) State the principle to determine serum creatinine.
4+2+2

6. (a) How blood pH is maintained.
- (b) Describe the process to estimate plasma bicarbonate.
- (e) How will you determine the level of serum chloride?
1+3+3

Or

- (a) Write down the methods used to diagnose pancreas problems.
 - (d) What are liver function tests? Why these tests are useful?
3+(3+1)
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