2008

M.Sc.

3rd Semester Examination

BIO-MEDICAL LABORATORY SCIENCE & MANAGEMENT

PAPER—X (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) Write the basic principle of UV spectrophotometer.
   (b) What is the clinical importance of flame photometry ?
   (c) Write the application of fraction collector ?
   (d) Write the basic principle of paper electrophoresis.
   (e) What is potentiomety ?
   (f) Write the basic principle of atomic absorption photometry ?
   (g) What is the clinical importance of column chromatography ?
   (h) Write the full form of TEMED ?

2. (a) Describe the standard procedure for the preparation of serum specimen for biochemical analysis.

   (b) Describe briefly the abnormal carbohydrate metabolism of diabetic patients.

   (c) Describe the role of different enzymes for the onset of cardiac diseases. 2+3+3

Or

   (a) Write the basic principle of TLC?

   (b) What do you mean by Rf value at a TLC system?

   (c) How do you prepare the standard of Na^+ and K^+ ions for the detection of serum Na^+ & K^+ by Flame Photometry? 2+2+(2+2)

3. (a) What do you mean by PCR?

   (b) Briefly describe the advantage and disadvantage of PCR in Bio-medical application.

   (c) What are the salient features of primer?

$2+(1\frac{1}{2}+1\frac{1}{2})+2$

Or

   (a) Mention the principle of ion-exchange chromatography. What is the use of HPLC in a 'Biomedical Laboratory'?

   (b) Why SDS is required during the electrophoresis of protein. (3+2)+2

Module-II

(Advance Clinical Biochemistry)

4. Answer any *five* questions : 1×5

(a) What is cardiac function test?

(b) Mention the reference range of gamma GT in serum.

(c) Write the pathophysiological condition developed due to high level of urea in serum.

(d) Mention the basic principle of amylase activity assessment in serum.

(e) Why HDL cholesterol is known as good cholesterol.

(f) Write the basic principle of carbon monoxide toxicity study.

(g) Write the clinical application of drug toxicity screening?

(h) Mention the normal range of SGPT and ALP in serum.

5. (a) Write the clinical significance of CPK study in serum.

(b) Describe the method for the estimation of the activity of serum CPK.

(c) Write the basic principle of LDH study in serum. 2+4+2

Or

(a) Mention the names of different tests used for assessment of renal functions.

(b) Briefly describe the renal clearance tests to assess the glomerular filtration rate.

(c) Write the basic principle and clinical importance of the study of serum creatinine level 2+4+(1+1)

6. (a) Mention the clinical importance of the study of serum sodium and potassium levels.

(b) What types of precaution you will follow during the collection and preparation of the specimen for the estimation of serum bicarbonate.

(c) Describe the procedure for the estimation of the level of serum bicarbonate. 2+2+3

Or

(a) Write the fundamentals of Microdiffusion technique for drug toxicity analysis.

(b) Mention the protocol for the quantification of Salicylates in serum.

(c) Write the protocol for the qualitative detection of Arsenic in urine. 2+3+2

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