

M.Sc. 2nd Semester Examination, 2011

BIOMEDICAL LAB. SCI AND MANAGEMENT

PAPER—201 (Unit-10)

Full Marks : 40

Time : 2 hours

Answer all questions

The figures in the right-hand margin indicate marks

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

Illustrate the answers wherever necessary

MODULE—1

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

(a) What is reticulocyte ?

(b) What is the normal limit of MCV ?

(c) What is anisocyte ?

(Turn Over)

- (d) What is RDW ?
 - (e) What is pancytopenia ?
 - (f) What is a normoblast ?
 - (g) What is the size of a red blood cell ?
 - (h) What is the area of WBC counting chamber ?
2. (a) Describe the role of 2, 3-BPG in the regulation of O₂ saturation of Hb.
- (b) Draw the schematic diagram of *T* and *R* form of haemoglobin.
- (c) Write the principle of Drabkin's method of Hb detection. 4 + 2 + 2

Or

- (a) What is aplastic anaemia ?
- (b) What is the cause of this disease ?
- (c) Describe the role of vitamin B₁₂ and folic acid in erythropoiesis. 2 + 2 + 4

3. (a) What is multiple myeloma ?

(b) What is microcytic hypochromic anaemia ?

(c) What is the difference between plasma and serum ?

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

Or

(a) Mention the use of glycoprotein marker in diagnosing leukaemia.

(b) Why Arneth Index and Schilling index are determined ?

(c) Discuss the causes of neutrophilia and eosinophilia.

$$2 + 2 + 3$$

MODULE—2

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

(a) Which of the following haematologic tests is not part of the usual complete blood count ?

(i) Haematocrit

(ii) Haemoglobin

(iii) Platelet estimate

(iv) Reticulocyte count.

(b) Which of the following test is used to evaluate inflammatory condition ?

(i) Erythrocyte morphology

(ii) Leukocyte morphology and differential count

(iii) Platelet count

(iv) Erythrocyte sedimentation rate.

(c) What is erythroblastosis foetalis ?

(d) What is the full form of PNH ?

(e) What is the characteristic feature of LE cell ?

(f) Why sucrose lysis test is performed ?

(g) Write the name of most appropriate technique of Fetal Hb detection.

(h) What is Von-Willebrand disease ?

5. (a) How do you calculate mean blood sugar level from HbA_{1c}?

(b) How do you detect HbA_{1c} by HPLC?

(c) What is the composition of WBC fluid?

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

Or

Write short notes on (any two) :

4 + 4

(i) G-6-PD deficiency anaemia

(ii) Pearl Prussian staining technique

(iii) Thalasaemia Major.

6. (a) What do you mean by electrical impedance phenomenon that used in Coulter counter?

(b) What is the principle of flow cytometric analysis for blood cell identification?

(c) Draw the normal histogram of different blood cells found in flow cytometric identification.

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

Or

(a) Define APTT and PTT.

(b) What is the significance of P.T. ?

(c) How do you perform the test? 2 + 2 + 3