

2009**M.Sc.****2nd Semester Examination****BIO-MEDICAL LABORATORY SCIENCE & MANAGEMENT****PAPER—V (Unit-10)****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.

[Basic & Clinical Haematology]**Module-I**

1. Answer any five : 5×1
- (a) What is Arneth index and Schilling index?
 - (b) A young cell that just extruded its nucleus, when seen on a wright stained peripheral blood film — mention the name of the cell.
 - (c) Write the name of the haemoglobin variant associated with the presence of target cells on the blood film.
 - (d) What is the difference between anisocytes and poikilocytes?

(Turn Over)

- (e) How do you calculate MCHC ?
- (f) Which anticoagulant is the choice for routine coagulation assays ?
- (g) What is the difference between myeloid and lymphoid cells ?
- (h) What is INR ?
2. How the formation of fibrin clot occurs from factors-X — briefly describe. How erythropoiesis is regulated ? What is the cause of haemophilia ?

3+3+2

Or

How does transition of T to R form of Hb occurs during progressive oxygenation. Mention the features of lymphocytosis with special reference to the function of B-lymphocyte and T-lymphocyte.

4+4

3. How tactoid is formed during sickle cell anaemia — mention with special reference to the genetic basis of the disease. Classify different form of ρ -thalassaemia in tabular form according to its genetic variation.

3+4

Or

Which type of anticoagulant is suitable for blood glucose estimation—give reason in support of your answer. What are the characteristic features of megaloblastic anaemia ?

What is target cell—mention with diagram. $2+2\frac{1}{2}+2\frac{1}{2}$

Module-II

4. Answer any five of the following : 1×5
- (a) What is the full form of LE cell ?
 - (b) Which type of neutrophils is found more in blood smear — segmented or band form ?
 - (c) Landau method is related to ESR or PCV determination.
 - (d) What is the clinical significance of reticulocyte ?
 - (e) What is the diameter of the aperture found in coulter counter ?
 - (f) Name a disease where osmotic fragility of red cell is low.
 - (g) What is serum haptoglobin ?
 - (h) When Kleihauer Betke test is performed ?

5. Give a hypothetical model of PNH gene mutation. Write the name of different tests to detect G-6-PD deficiency and mention the principle of the spot test.

4+(2+2)

Or

Give the cytogenetic location of ALAS2 gene mentioning the disorder of this gene. How does PKLR is responsible for haematological disorder—briefly state. How do you detect PK deficiency biochemically ?

2+2+4

6. What do you mean by electrical impedance? Draw a schematic diagram of a typical automatic haematological analyzer. What is the function of floating calibrator?

2+4+1

Or

Write short notes on :

- (a) TIBC ;
- (b) HbA_{1c} ;
- (c) Glanzmann's thrombasthenia.

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