# M. Sc.

## 2018

## 2nd Semester Examination

## BIO-MEDICAL LABORATORY SCIENCE AND MANAGEMENT

**PAPER—BLM-202**

**Subject Code—22**

*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.*

Answer *question no.1* and any *three* from the rest.

**1.** Answer *all* questions : 10×1

*(Choose the right answer)*

(a) What produced by B lymphocytes and are responsible for humeral immunity

(i) Maternal haemoglobin

(ii) Fetal haemoglobin

(iii) Immunoglobin

(iv) Glycated haemoglobin

(b) Hydrophobicity is found in following amino acid for sickle cell anaemia.

(i) Glutamate
(ii) Saline
(iii) Threonine
(v) Cysteine

(c) Reticulocytes are high in

(i) Infant
(ii) Adolescent
(iii) Adult
(iv) Geriatric person

(d) Hematocrit in Hemolysis is

(i) Normal
(ii) Increased
(iii) Decreased
(iv) Same

(e) If RBC tend to smell MCV will

(i) Increase
(ii) Decrease
(iii) Same
(iv) None of the above.

(f) Counting limit of blood would be controlled by

(i) FACS
(ii) Floating calibrator
(iii) differentiation of charges (ion)
(iv) Impedance

(g) IFN-V releases from

(i) Th-1 and Th-2 cells

(ii) Th-1 and Nk cells

(iii) Th-2 and Nk cells

(ii) None of the above.

(h) Rh typing is used to determine

(i) Whether the blood group is positive and negative

(ii) Whether you have specific protein on red cell surface

(iii) Both of the above

(iv) None of the above

(i) Erythropaetin synthesizes in

(i) Suprarenal gland

(ii) Kidney

(iii) Bone marrow

(iv) Thymus.

(j) Hinz body is found in

(i) Hereditary spherocytosis

(ii) G-6-PD deficiency

(iii) Both of the above

(iv) None of the above.

2. (a) Discuss diagrammatically the transition of different haemoglobins in embryonic life to post birth state.

   (b) What is the relevance of lower p50 value of HbF than adult Hb ?

   (c) What is hereditary spherocytosis ? 4+4+2

3. (a) Discuss the primary, secondary and tertiary structure of haemoglobin.

   (b) Elaborate the different abnormalities of red blood cells with its clinical significance. 3+7

4. (a) What are the types of antigenic construction found in case of Blood Group 'O'?

   (b) What is "Bombay 'O' blood group"?

   (c) Enumerate your idea about Fisher-Race nomenclature of Rh typing.

   (d) Which is the chromosomal locus responsible for endcoding G-6-PD ? 3+2+3+2

5. Write short notes on (Any *two*) 2×5

   (a) Sickle cell anaemia

   (b) $Th_1$ and $Th_2$ cells.

   (c) Leukaemia

**6.** (a) How do leparin and sodium citrate prevent blood coagulation ? 1½+1½

(b) What are the causes of HDN ? 2

(c) Why is hydrops fetalis ? Write the clinical symptoms of it. 2+3

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