This question paper contains 3 printed pages.

4612 *Your Roll No.* .....

B.Sc. Prog. / II **AS**

LS–203 : CELL BIOLOGY, BIOCHEMISTRY AND IMMUNOLOGY

Time : 3 hours *Maximum Marks* : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer five questions in all, including Q.No. 1 which is compulsory.

1. (*a*) Differentiate between the following:

   (*i*) RER and SER

   (*ii*) Catabolism and Anabolism

   (*iii*) Isoenzymes and Coenzymes

   (*iv*) Transamination and Deamination

   (*v*) Primary and Secondary Immune Response.

10

(*b*) Expand the following abbreviations:

(*i*) GERL

(*ii*) PAGE

(*iii*) MHC

(*iv*) NK cells

P. T. O.

(*v*) MALT

(*vi*) AMP. 6

(*c*) Define the following terms:

(*i*) Epitope

(*ii*) Zwitterions

(*iii*) Immunogens

(*iv*) Zymogens. 4

(*d*) Give the scientific contribution of the following:

(*i*) Altman and Benda

(*ii*) Virchow. 2

(*e*) Write the name of the antibody on the basis of the following characteristic:

(*i*) Which readily crosses placenta

(*ii*) First antibody to be produced in a primary immune response

(*iii*) Which mediates hypersensitivity reaction. 3

(*f*) Give the location of the following enzymes:

(*i*) Glycosyl transferase

(*ii*) Succinate dehydrogenase. 2

2. (*a*) Discuss the role of Golgi in cell secretion. Describe different steps in this process. 10

(*b*) What are Peroxisomes? What is the significance of Peroxisomes? 2

3. Describe polymorphism in lysosomes. Write various functions of lysosomes. 12

4. (*a*) Mitochondria and chloroplasts are intracellular parasites. Discuss. 5

(*b*) Explain competitive and non-competitive enzyme inhibition. 7

5. (*a*) How does innate immunity differ from acquired or specific immunity? 3

(*b*) Explain Clonal Selection theory. 6

(*c*) What is the difference between Active and Passive immunisation? 3

6. Schematically represent the various steps of the TCA cycle. Calculate the energy yield of oxidation of one molecule of glucose under aerobic conditions. 12

7. Write short notes on any *two* of the following:

(*a*) Breakdown of glucose to pyruvate with the help of flow diagram with formulae

(*b*) Radioautography

(*c*) Antigen presenting cells (APC). 6,6