

This Question paper Contains 3 printed pages

Roll No.

S.No. of Question paper : **1832** E
 Unique paper code : **107479**
 Name of the paper : **Immunology, Molecular biology and Development biology.**
 Name of the course : **B.Sc (Life Sciences)/Applied Life Sciences**
 Semester : **IV**

Duration: 3hours

Maximum marks: 75

Instructions for Candidates:

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **five** question in all including **question no. one** which is compulsory.
3. Draw suitable well labelled diagrams where ever necessary.

Q.1 (a) Define the following : (5)

- (i) Immunogen
- (ii) Phospholipids
- (iii) Protease
- (iv) Central dogma
- (v) Megalecithal egg

(b) Expand the following (any three) : (3)

- (i) AIDS
- (ii) ATP
- (iii) DNA
- (iv) ORF

(c) Match the column 'A' and 'B': (5)

'A' Antigen Chitin Citric acid Cycle Protein Synthesis Oogenesis	'B' Mitochondria Ovary Ribosome Antibody Exoskeleton
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P.T.O.

(d) Draw well levelled diagrams of the following (no description required): (4)

- (i) Immunoglobulin
- (ii) t-RNA

(e) Differentiate between **any three** of the following: (6)

- (i) Primary and secondary immune response
- (ii) Saturated and unsaturated fattyacids
- (iii) Transcription and translation
- (iv) Blastula and gastrula

(f) Fill in the blanks (4)

- (i) _____ is the father of vaccination.
- (ii) Linkages that joins aminoacids in proteins are _____ linkage.
- (iii) Replication of DNA takes place in _____ phase of cell cycle.
- (iv) The movement of the cells from one place in the embryo to another place to establish a particular structure is called _____.

Q.2 (a) How does innate immunity differ from acquired or specific immunity ? 6+3+3

(b) Write down the properties of B-cell epitopes ?

(c) Why all immunogens are not antigen ? Explain.

Q.3 (a) What is polysaccharide ? Write down different types of polysaccharides with their functions. (1+3+2)

(b) Explain the watson and crick model of DNA structure. 6

Q.4 (a) Explain gluconeogenesis ? 4+4+4

(b) Describe the chemical Mechanism of Beta-oxidation with reference to palmiticacid.

(c) Name the protein which tag the protein for degradation and write down the Mechanism of protein degradation in brief ?

P.T.O.

- Q.5 (a) What is an enzyme ? Classify enzymes according to the type of reactions it catalyzes.
- (b) Write down Mechanism of enzyme action ? 6+6=12
- Q.6. (a) Explain the Mechanism of transcription in prokaryotes.
- (b) Write down different features of genetic code ? 9+3=12
- Q.7 (a) What is placenta ? Write down different types of placenta with its function ?
- (b) Write short note on spermatogenesis ? 9+3=12