

[This question paper contains 4 printed pages.]

Sr. No. of Question Paper : 6831                                      D                                      Your Roll No.....

Unique Paper Code : 107479

Name of the Course : B.Sc. (Life Sciences) / Applied Life Sciences

Name of the Paper : Immunology, Molecular Biology and Development Biology

Semester : IV

Duration : 3 Hours

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.

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

(i) Hapten

(ii) Peptide bond

(iii) Glycolysis

(iv) Promoter

(v) Placenta

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

(i) MHC

(ii) RNA

*P.T.O.*

(iii) NAD

(iv) UTR

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

'A'

'B'

Spermatogenesis

Plasmamembrane

Cellulose

Protein

Protease

Mitochondria

Beta-oxidation

testis

Phospholipids

Cell wall

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

(i) B-cell epitopes and T-cell epitopes

(ii) Glycolysis and Gluconeogenesis

(iii) DNA and RNA

(iv) Epiboly and Emboly

(e) Fill in the blanks : (4)

(i) AIDS is spread due to \_\_\_\_\_ (virus/bacteria).

(ii) Tryptophan is a \_\_\_\_\_ type of amino acid. (aromatic/aliphatic)

(iii) \_\_\_\_\_ tags the protein for degradation. (Ubiquitin/Proteasome)

(iv) Eggs of birds are \_\_\_\_\_ type. (megalecithal/alecithal).

- (f) State whether the following statements are True or false : (4)
- (i) All immunogens are antigen.
  - (ii) Fats are solid at room temperature.
  - (iii) Glycolysis is common pathway for aerobic and anaerobic respiration.
  - (iv) Neurons are epidermal in origin.
2. What is vaccination ? Write in detail about different types of vaccines currently in use ? (12)
3. Write short notes on :
- (a) Citric acid cycle
  - (b) Genetic code
  - (c) Fertilization (4+4+4=12)
4. (a) Explain pentose phosphate pathway ?
- (b) Explain the mechanism of transamination and oxidative deamination in aminoacid catabolism ? (6+6=12)
5. (a) Explain the Mechanism of DNA replication ?
- (b) Explain central dogma in molecular Biology ? (9+3=12)
6. (a) Explain different levels of structure of protein ?
- (b) Describe about different types of RNA with their functions ? (6+6=12)

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7. Write short notes on following :

(a) Cleavage

(b) Gametogenesis

(c) Placenta

(4+4+4=12)