

**PC – 387 CV-19**  
**M.SC ZOOLOGY (3<sup>rd</sup> SEM.)**  
**Examination December 2020**  
**Paper – III**

**IMMUNIOLOGY AND DEVELOPMENTAL BIOLOGY**

[Maximum Marks-080

[Minimum Passing Marks-29

Time: Three Hours]

नोट : दोनों खण्डों से निर्देशानुसार उत्तर दीजिए। प्रश्नों के अंक उनके दाहिनी ओर अंकित हैं।

**Note :** Answer From Both the Section as Directed. The Figures in the right-hand margin indicate marks.

Section-A

Q.1 Choose the correct answer.

1X20

- (a). An antigen is-
- (i) A substance that the immune system recognizes.      (ii) A type of immune cell  
(iii) A cell that attacks microbes      (iv) All of these
- (b) Any agent that may stimulate the immune system and specific antigenic affect by itself:
- (i) Antigens      (ii) Allergens      (iii) Adjuvant      (iv) Carrier
- (c) What type of immunologic reaction Occurs when specific antibodies are mixed with whole cell antigens?
- (i) Agglutination      (ii) Precipitation      (iii) Immunodiffusion      (iv) Complement fixation
- (d) A complement component which is strongly chemolactic for neutrophils is:
- (i) c3      (ii) c3b      (iii) c5a      (iv) c5b
- (e) The classical and alleviating pathways meet at complement component:
- (i) c3      (ii) c4      (iii) c4b      (iv) c5
- (f) The TB skin test is an example of –
- (i) Delayed hyper sensitivity      (ii) Serum sickness      (iii) Cytotoxic reaction      (iv) None of the about
- (g) Type II hyperentunity is due to:
- (i) Age      (ii) Activation of cytotoxic T cell      (iii) pollen      (iv) Mismatched blood group in transfusion.
- (h) Bursa of fabricius is an organ of birds. This organ is emaciated with:
- (i) Generation of basophiles      (ii) Production of uric acid  
(iii) Metabolism of fatty acid      (iv) Generation of B cell.
- (i) All of the following one categorized as secondary lymphoid organ except:
- (i) Spleen      (ii) Thymus      (iii) Lymph node      (iv) Sub epithelial collection of lymphocytes
- (j) A secondary immune response:
- (i) Occure several month      (ii) Is mediated by cells  
(iii) Has a very short lag period      (iv) Can be in induced by one high dose of antigen
- (k) Between fertilization and the 1<sup>st</sup> cleavage division, action filament pull the cytoplasm of the frog egg towards the point of sperm entry in a proven called:
- (i) Cortical rotation      (ii) Dorsalization      (iii) Blastulation      (iv) gastrulation
- (L) The process in which three germ layers form is called –
- (i) Fertilization      (ii) Cleavage      (iii) Gastrulation      (iv) Organogenesis
- (m) The ventricular proliferation zone is:
- (i) a region of cell division in the neural plate      (ii) a region of cell divisions in hensem's node  
(iii) a region of cell division in neuroectoderm of drosophila      (iv) a region of cell division in the neural tube
- (n) The one of segments as a developmental strategy in vertebrate is evident is
- (i) the endoderm      (ii) The axial skeleton only

- (iii) me hind brains only (iv) Both axial skeleton and hind brains
- (o) Development in a fertilized egg start from  
 (i) Fragmentation (ii) Regeneration (iii) Invagination (iv) Cleavage
- (p) Which of the immunoglobulin can nose placenta?  
 (i) IgG (ii) IgA (iii) IgD (iv) IgM
- (q) An antibody is a:  
 (i) Glycoprotein (ii) Carbohydrates (iii) Protein (iv) Fatly acids
- (r) The physical barrier that form part of the immune system are:  
 (i) Skin, mucous and body temperature (ii) Skin and mucous membrane  
 (iii) Bones and mucous membrane (iv) Nerves and skin
- (s) The acquired immune system is based an lymphoeylies  
 (i) true (ii) false
- (t) Bodies internal defense or second line of defense include:  
 (i) Phagocytes (ii) Fenes (iii) Interferon (iv) All of there

Section-B

Answer all question

Unite-I

Q.2 – Give detailed account of cells involved in immune system.

15X4

Or

Describe structure of primary, secondary and tertiary lymphoid organs.

Q.3 – Write structure and function of various clam of immunoglobulin's.

Or

Write in short about

- (i) B-cell receptors  
 (ii) T-cell receptors

Unite-III

Q.4 – Write a detail note on MHC.

Or

Write notes in brief :

- (i) MAC  
 (ii) Type I Hypersensitivity

Unite-IV

Q.5. Write an essay an cleavage and it significance

Or

Write short notes on :

- (i) Morphogenetic movement in gastrutation  
 (ii) Tabulation