

Duration: 3 Hours

Maximum Marks: 100

**Instructions:-**

- 1) Please check if you have received the correct question paper.
- 2) All the questions are compulsory. Choice is internal.
- 3) Figures to the right indicate full marks.
- 4) All questions carry equal marks.
- 5) Draw flowcharts /diagrams wherever necessary.

- Q1A Fill in the blanks (**any three**): 3
- i) Immune complexes do not precipitate if \_\_\_\_\_ is in excess.
  - ii) The smaller complement component formed on activation and generally contributing to MAC formation is \_\_\_\_\_.
  - iii) ABO blood typing uses \_\_\_\_\_.
  - iv) Most efficient antibody for complement activation is mainly \_\_\_\_\_.
  - v) Test for use of steroids in athletes is based on \_\_\_\_\_ agglutination.
- Q1B) Answer in brief **any one**: 3
- i) Explain the process of enhancing phagocytosis during complement activation.
  - ii) Define and explain the terms affinity and avidity.
- Q1C) Write a note on **any one**: 6
- i) Activation of complement by alternate pathway
  - ii) Agglutination inhibition reactions for diagnosis
- Q1D) Answer **any one**: 8
- i) Explain the use of agglutination reactions for clinical detection of any two diseases.
  - ii) Explain the activation of the complement system involving antibodies.
- Q2A Fill in the blanks (**any three**): 3
- i) Transplant from a goat to a camel, is a type of \_\_\_\_\_.
  - ii) Chromosome \_\_\_\_\_ codes for Human Class II MHC.
  - iii) \_\_\_\_\_ is an APC.
  - iv) The class I MHC is present on all \_\_\_\_\_ cells.
  - v) \_\_\_\_\_ is an example of autoimmune disorder.
- Q2B) Briefly explain **any one**: 3
- i) Positive selection
  - ii) Acute transplant rejection

- Q2C) Attempt **any one**: 6
- With the aid of a neat diagram, describe the structure and function of a MHC-II molecule.
  - Elaborate on any one organ specific autoimmune disorder.
- Q2D) Answer for **any one**: 8
- Discuss polymorphism as a means of creating diversity on MHC.
  - Elaborate on the immunological stages of graft rejection.
- Q3A) Fill in the blanks (**any three**): 3
- In HIV, Protease enzyme is responsible for \_\_\_\_\_.
  - \_\_\_\_\_ ratio decreases during AIDS.
  - \_\_\_\_\_ sarcoma is more prevalent in people suffering from AIDS.
  - A structural component that is found in all viruses is \_\_\_\_\_.
  - \_\_\_\_\_ is the extracellular form of a virus.
- Q3B) Explain **any one** giving the full form of the abbreviation: 3
- EEV (ii) OPV
- Q3C) With the aid of a neat diagram explain the structure of **any one**: 6
- HIV
  - Typical virus
- Q3D) Answer in detail **any one**: 8
- Elaborate on the structure and replication of poliovirus.
  - Elaborate on therapy being used to manage AIDS.
- Q4A) Fill in the blanks (**any three**): 3
- \_\_\_\_\_ is also known as senescence.
  - During ageing \_\_\_\_\_ protein levels are depressed.
  - \_\_\_\_\_ is a potential cross linker.
  - Alzheimer's associated symptoms in the early stage resemble \_\_\_\_\_.
  - Diabetes \_\_\_\_\_ is associated with low insulin levels.
- Q4B) Answer in brief **any one**: 3
- What is Gerontology?
  - State any two points of difference between Diabetes mellitus and Diabetes insipidus.
- Q4C) Write a short note on **any one**: 6
- Theories propagated to explain ageing .
  - Pathophysiology of Alzheimer's disease



- Q4D) Attempt **any one**: 8
- i) Do you agree that the changes in enzymes as well as length of telomere contribute to ageing? Support your answer with valid reasons.
  - ii) Explain - Diabetes mellitus is caused not only due to an endocrine disorder.
- Q5A) Write brief note on **any one**: 4
- i) Ouchterlony reaction
  - ii) Effects of the complement system.
- Q5B) Answer **any one**: 4
- i) Write briefly on dendritic cells.
  - ii) Describe the types of grafts generally never rejected.
- Q5C) Answer **any one**: 4
- i) Write a brief on symptoms of AIDS .
  - ii) What reasons contribute to ineffectiveness of anti-influenza vaccine?
- Q5D) Attempt **any one**: 4
- i) Explain the role of free radicals in ageing.
  - ii) Write a brief on Diabetes insipidus.
- Q5E) State true or false (**any four**): 4
- i) Each antigen can bind to an antibody through its epitope.
  - ii) Agglutination reactions take more time.
  - iii) All types of arthritis are autoimmune disorders.
  - iv) C5a is an anaphylatoxin.
  - v) The viral envelope is made of glycoproteins.
  - vi) Vaccinia virus has helical symmetry.

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