

M.Sc. DEGREE EXAMINATION NOVEMBER 2015  
BIOINFORMATICS  
THIRD SEMESTER

COURSE : ELECTIVE  
PAPER : IMMUNOINFORMATICS AND PHARMACOLOGY  
TIME : 3 HOURS MAX. MARKS: 100

SECTION A

(20x1=20)

I. Choose the correct answer

- The intensity of the inflammatory response depends on
  - The site of infection
  - The extent & severity of the infection
  - If there is an infection
  - How much blood loss has occurred
- The change in the isotype of antibody produced by the B-Cell is called
  - Class swithching
  - Negative Selection
  - Positive Selection
  - Extravasation
- In man MHC is a collection of genes on
  - Chromosome – 6
  - Chromosome – 7
  - Chromosome – 8
  - Chromosome – 9
- Exogenous antigens stimulate
  - To cells
  - T-helper cells
  - Class I MHC
  - Class II MHC
- Which of the following needs to be established before the search for a lead compound takes place?
  - the pharamcophore
  - Structure-activity relationships
  - a bioassay
  - QSPR

Fill in the blanks

- VDJ domain stands for\_\_\_\_\_.
- Two essential features of adaptive immune responses are\_\_\_\_\_ and \_\_\_\_\_.
- CD4 stands for \_\_\_\_\_.
- HLA stands for\_\_\_\_\_.
- The process of identification of the molecular determinants for antibody – antigen recognition is known as\_\_\_\_\_.

**Define the following**

11. Immunopathology.
12. MHC
13. Haptens
14. VIDA
15. Alternative splicing.
16. Auto immune disorders.
17. Allelic exclusion
18. ADME
19. Lipinski rule
20. Hematopoiesis

**SECTION-B****Answer any four questions in 200 words****(4x10=40)**

21. Write a detailed account on the features of antigens.
22. Describe the structure of Immunoglobulin and its types with diagram.
23. Explain in detail about the cells involved in adaptive and innate immune responses with neat labeled diagrams.
24. Write a detailed account on IMGT system.
25. Describe the ADME properties for the drug molecule.
26. Mention the web based vaccine design tools and databases available.

**SECTION-C****Answer any TWO questions in 1000 words****(2x20=40)**

27. Describe the antigen processing and presentation in detail.
28. Discuss the drug discovery process in detail with a schematic diagram.
29. What are the characteristics of an inflammatory response & explain how it contributes to an effective innate immune response.
30. Explain the concept of viral bioinformatics and its significance.

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