

Total No. of Questions : 8]

SEAT No. :

P2736

[5030]-301

[Total No. of Pages : 2

M.Sc.

MICROBIOLOGY

MB - 701 : Immunology

(2013 Pattern) (Semester - III) (Credit System)

Time : 3 Hours]

[Max. Marks : 50

Instructions to the candidates:

- 1) Attempt any three questions from 1 to 4 (Core credits).*
- 2) Attempt any two questions from 5 to 8 (Non-core credits).*
- 3) All questions carry equal marks.*
- 4) Draw neat-labeled diagrams wherever necessary.*
- 5) Use of logarithmic tables and scientific calculators is allowed.*
- 6) Figures to the right indicate full marks.*

Q1) Attempt any two of the following: **[10]**

- a) Explain the role of Toll-like receptors (TLRs) in innate immune mechanisms.
- b) Explain the structure of TCR-CD₃ complex.
- c) Describe in brief the characters of cytokine receptor families.

Q2) Attempt any two of the following: **[10]**

- a) Diagrammatically represent regulation of alternative complement pathway.
- b) Justify, "The mechanism of central tolerance induction is clonal deletion".
- c) Comment on role of T cells in immune regulation.

Q3) Attempt any two of the following: **[10]**

- a) Describe the ELISPOT assay, giving its applications.
- b) Describe use of animal models for study of AIDS.
- c) Explain culturing of anchorage-dependent cells *in vitro*.

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Q4) Attempt any two of the following: **[10]**

- a) With the help of diagrams, explain role of adhesion molecules in immune activation.
- b) Describe cytokine mediated regulation of immune responses, giving suitable examples.
- c) Explain assay methods to evaluate phagocytic cell function.

Q5) Attempt any two of the following: **[10]**

- a) How tumors escape host defense mechanisms?
- b) What are tumor vaccines? Explain giving examples.
- c) Discuss use of immune adjuvants in prevention and treatment of tumors.

Q6) Attempt any two of the following: **[10]**

- a) How host immune system responds to extracellular bacterial pathogens?
- b) Explain the pathophysiology in cutaneous leishmaniasis.
- c) Describe immuno-prophylaxis of tuberculosis.

Q7) Attempt any two of the following: **[10]**

- a) Explain the mechanism of symptoms development in systematic lupus erythematosis.
- b) How T cell deficiency disorders are diagnosed?
- c) Discuss the immuno-therapeutic approaches for rheumatoid arthritis.

Q8) Attempt any two of the following: **[10]**

- a) Discuss evolution of cellular defenses in lower invertebrate species.
- b) Justify, "To defend against life threats in terrestrial environment, functional and inducible specific humoral factors appeared during course of evolution of immune system among vertebrate species".
- c) Discuss the complexity of immune system among different species of vertebrates.

