

Total No. of Questions : 6]

SEAT No. :

[Total No. of Pages : 2

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M.Sc.

BIOTECHNOLOGY

**BT-33b: Advanced Immunology
(2008 Pattern) (Semester - III)**

Time : 1½ Hours]

[Max. Marks : 40]

Instructions to the candidates:

- 1) Attempt total of four questions selecting at least two questions from each section.*
- 2) Answers to the sections must be written on separate answers book.*
- 3) Neat diagram must be drawn wherever necessary.*
- 4) Figures to the right indicate full marks.*

SECTION-I

Q1) a) Describe the structure and role of thymus. **[5]**

b) Give a brief account of Toll-Like receptors and signal transduction in innate immune response. **[5]**

Q2) a) Explain the Alternative pathway of complement activation. **[5]**

b) All the antigens are not immunogens–Justify **[5]**

Q3) Write explanatory notes on:

a) Chronic rejection of graft. **[5]**

b) Rheumatoid arthritis. **[5]**

P.T.O.

SECTION-II

- Q4)** a) Give a concise account of any one animal model in immunology. [5]
b) What is combined vaccine? Give atleast two examples of it. Write its advantages. [5]
- Q5)** a) Define stem cells. Describe their types in brief. Mention two uses of stem cells. [5]
b) Write at least five important criteria needed to be considered to develop an efficient vaccine. [5]
- Q6)** Write explanatory notes on: [10]
a) Antibody engineering.
b) Immunodiagnostics.

