

This question paper contains 4 printed pages]

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S. No. of Question Paper : 1753

Unique Paper Code : 2532013602

Name of the Paper : **Advances in Immunology**

Name of the Course : **Microbiology**

Semester : **VI (Part-III)**

Duration : **3 Hours**

Maximum Marks : **90**

(Write your Roll No. on the top immediately on receipt of this question paper.)

Attempt any five questions.

All questions carry equal marks.

Attempt all parts of a question together.

1. Explain the following (any 6) :

3×6=18

- (i) Surrogate light chain
- (ii) Immunoprivileged sites
- (iii) National Immunization Schedule
- (iv) Tumor specific antigens
- (v) HLA typing
- (vi) Self MHC restriction
- (vii) Co-stimulatory signals
- (viii) VDJ Recombination.

P.T.O.

2. (a) Differentiate between the following (any 3) : 4×3=12
- (i) Type III and IV Hypersensitivity
 - (ii) Naive and Memory cells
 - (iii) Primary and Secondary immune response
 - (iv) Active and Passive immunisation.
- (b) Discuss various evasion mechanisms adopted by cancer cells to escape immune surveillance. 6
3. Write short notes on the following (any 3) : 6×3=18
- (i) Anticancer therapy
 - (ii) DNA and mRNA vaccines
 - (iii) Generation of Humoral immune response
 - (iv) Killing mechanisms of NK cells.
4. (a) Give salient features of the following diseases (any 4) : 3×4=12
- (i) Haemolytic anaemia
 - (ii) Goodpasture syndrome
 - (iii) Chediak Higashi syndrome
 - (iv) DiGeorge syndrome
 - (v) Multiple sclerosis.

- (b) Give the technical term or *one* word for the following (any 6) : $1 \times 6 = 6$
- (i) An abnormal immune response against self-antigens
 - (ii) Organ transplant from identical twin
 - (iii) First heavy chain to appear after gene rearrangement
 - (iv) The dead microorganism which is a component of Freund's complete adjuvant
 - (v) Type of vaccine involving a surface protein of a pathogen
 - (vi) Allergic condition affecting nasal mucosa
 - (vii) An immunodiagnostic using fluorescent probes
 - (viii) When T cells can perceive antigens presented only by own MHCs.
5. (a) Why do some vaccines require boosters ? 4
- (b) Discuss various mechanisms which transform normal cells into cancer cells. 6
- (c) Describe various immunosuppressive therapies used to enhance the survival of grafts. 8
6. (a) Expand the following abbreviations : $1 \times 6 = 6$
- (i) LAD

(4)

(ii) SLE

(iii) SCID

(iv) IDDM

(v) GVHD

(vi) TATA.

(b) What is chronic graft rejection ? How is it different from acute and hyperacute rejection ? 6

(c) Briefly describe the mechanism of Type I hypersensitivity. 6