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SEAT No. _____

No. of Printed Pages : 2

SARDAR PATEL UNIVERSITY
M.Sc (III Semester) Examination
Wednesday, 27th March, 2019
2:00 pm to 5:00 pm
Biotechnology
PS03EBIT21 – Advanced Immunology

TOTAL MARKS: 70

Q.1 Write both correct option as well as answer to the MCQ questions in your main answer book (08 Marks)

1. The Arthus reaction is considered to be which of the following hypersensitivity types?
 - a. Type I hypersensitivity
 - b. Type II hypersensitivity
 - c. Type III hypersensitivity
 - d. Type IV hypersensitivity
2. Early embryonic antigens are classified as:
 - a. TATA
 - b. TSTA
 - c. Both
 - d. None
3. Which of the following is an organ specific autoimmune disorder:
 - a. IDDM
 - b. Grave's disease
 - c. Myasthenia Gravis
 - d. None of these
4. Which maternal antigens are protective against diseases such as diphtheria, tetanus, streptococcal infections, and measles?
 - a. IgA and IgE
 - b. IgA and IgG
 - c. IgD and IgE
 - d. IgG and IgM
5. Rejection of allografts:
 - a. does not depend on MHC mismatching.
 - b. demonstrates immunological specificity.
 - c. demonstrates immunological memory.
 - d. Both B and C.
6. Which cell type is found in both B- and T-cell lineages?
 - a. Common lymphoid progenitors
 - b. Common pro-B-T cells
 - c. Immature B cell
 - d. Naïve lymphoid progenitor
7. Which of the following molecules would double-negative T cells fail to express?
 - a. CD3
 - b. CD4
 - c. MHC class I
 - d. TAP
8. Hematopoiesis produces:
 - a. B cells only.
 - b. myeloid lineage cells only.
 - c. lymphoid and myeloid lineage cells.
 - d. erythroid, lymphoid, and myeloid lineage cells.

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(P.T-0)

- Q.2 Answer any seven from the following: 14
- Differentiate between active and passive immunization.
 - Explain the terms TATA and TSTA.
 - What is 'Clonal Anergy'?
 - Briefly, discuss the types of Immunoglobulin gene libraries for antibody engineering?
 - Explain 'Hygiene hypothesis' for more incidences of asthma and other forms of allergy in developing countries.
 - What is a conjugate vaccine? Explain how conjugate vaccine protects against Haemophilus influenzae type b (Hib).
 - Citing suitable examples state the different types of graft.
 - What is the role of notch ligand in early T cell development?
 - Explain how 'positive selection' differs from 'negative selection'?
- Q.3 (A) Discuss vaccine strategies involved in live attenuated and inactivated or killed vaccines, and describe unique advantages and challenges. 6
- (B) Write a short note on monoclonal antibody production and state the applications of monoclonal antibodies. 6
- OR
- (B) Write a short note on antibody engineering. 6
- Q.4 (A) Write a brief overview on T-independent B-cell responses and state the functional differences between two novel subclasses of B cells mediate that mediate the responses to T-independent antigens. 6
- (B) Briefly describe regulation of T_H1 and T_H2 subset of T cell differentiation and add a note on the role of polarizing cytokines? 6
- OR
- (B) Compare and contrast the structure or processes involved in T cell and B cell development. 6
- Q.5 (A) Discuss the general mechanism involved in Type-I hypersensitivity in detail and explain the therapeutic role of pharmacological agents used in treating manifestation of Type-I hypersensitivity. 6
- (B) Citing suitable examples, explain the role of immunosuppressive therapy in allogenic transplantation. 6
- OR
- (B) Explain early and late inflammatory response in asthma 6
- Q.6 (A) Write a brief account on 'Cancer Immunotherapy'. 6
- (B) Describe any two animal models of immunodeficiency have that have been used to study basic immune function 6
- OR
- (B) Write a brief overview on establishment and maintenance of tolerance. 6

