

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 154751

Roll No.

B.Tech.

(SEM. VII) THEORY EXAMINATION, 2015-16

VACCINE TECHNOLOGY & IMMUNOINFORMATICS

[Time:3 hours]

[Total Marks:100]

SECTION-A

Q.1 Attempt all parts. All parts carry equal marks. Write answer of each part in short. (10×2=20)

- (a) What is vaccination?
- (b) What is role of TAP molecule?
- (c) Define immunogen.
- (d) Name two recombinant protein based vaccines available in the market.
- (e) What are the different generations of vaccine?
- (f) Define paratope.

- (g) Define the promiscuous epitopes.
- (h) What is Coombs test?
- (i) What is IEDB?
- (j) Differentiate between QSAR and QSPR?

SECTION-B

Note: Attempt any five questions from this section.

(10x5=50)

- 2. Explain the characteristics of adaptive immunity.
- 3. Explain the working principle and applications of ELISA.
- 4. What are the prediction approaches for linear B cell epitopes prediction?
- 5. What are MHC super motifs? How does QSAR can be used in defining the same?
- 6. Explain the principle of Rh typing.
- 7. What is current approach for industrial scale production of hepatitis B vaccine? Explain.

- 8. Compare the conventional and reverse vaccinology approach.
- 9. Write short note on application of 3D-QSAR in vaccine designing.

SECTION-C

Attempt any two questions from this section. (15x2=30)

- 10. Discuss the concept of reverse vaccinology along with the case study of Meningococcus B.
- 11. How does ANN algorithm can be used in conjunction with QSAR in solving immunological problem? Explain with help of suitable example.
- 12. Write detailed notes on:
 - i) Antigen-antibody interaction
 - ii) dbMHC

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