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J 3081

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

Sixth Semester

Biotechnology

BT 1014 — MOLECULAR PATHOGENESIS

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How will you test the presence of endotoxin.
2. Distinguish between antibiotics and bacteriocins.
3. List the various antigen presenting cells involved in antibody formation.
4. List the ideal attributes of a successful invasive pathogen.
5. Distinguish between necrosis and apoptosis.
6. How do ADP ribosylation play a role in pathogenesis?
7. In which type of infection do you find attaching and effacing lesions?
8. Highlight the uses of transposons in the study of pathogenesis.
9. Distinguish between cytopathic and cytotoxic effects.
10. What are peptide vaccines? Give example.

PART B — (5 × 16 = 80 marks)

11. (a) Discuss the killing of intracellular pathogen by cellular defense mechanism.

Or

- (b) Explain the etiology of diarrhoeal diseases. How will you classify these pathogens based on their pathogenesis? Discuss one example under each category.

12. (a) Explain in detail the virulence gene regulation at transcription and translational level with examples.

Or

- (b) Explain the mode of action of Cholera toxin, Shiga toxin labile and stable toxins of enterotoxigenic E.Coli.

13. (a) Explain in detail the steps involved in erythrocytic invasion of Plasmodium.

Or

- (b) Discuss the intracellular trafficking of Influenza virus.

14. (a) Write note on the following:

- (i) Zymography.
- (ii) Sequence Tagged Mutagenesis.
- (iii) Transcriptional profiling.
- (iv) Recombinant In Vivo Expression Technology.

Or

- (b) Explain how understanding of molecular pathogenesis helped to come up with new therapeutic strategies. Give an example from viral and bacterial pathogen.

15. (a) Write a detailed note on immuno and DNA based diagnostic tools employed in pathogenes identification.

Or

- (b) What is quorum sensing? Explain the mechanism. How is it related to pathogenesis? Give examples.