

SVKM'S NMIMS

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Programme: B. Pharm / B. Pharm + MBA

Year: IV

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Marks: 70

Subject: Pharmaceutical Biotechnology

Time: 2.00 pm to 5.00 pm

Duration: 3 hrs.

Date: 25 November 2019

No. of Pages : 02

FINAL EXAMINATION

Instructions:

Attempt all Questions from Section A and any four questions from Section B

Section A

Q1. Explain following terms (7*2)

- a. Downstream processing
- b. Immunogens
- c. Immobilized enzyme bioreactor
- d. Open read frame
- e. Two organic carriers for immobilization
- f. Stationary phase of microbial growth
- g. Hyaluronidase

Section B

Q2. a) Describe fluorescent *in situ* hybridization (FISH) and how is it used to construct a physical map? (7)

b) Distinguish between 'genetic mapping' and 'physical mapping'. What are the strengths and weaknesses of the two techniques? (7)

Q3. a) Give complete Microbial Transformations of Plant Origin Compounds to cortisone. (7)

b) Explain any two methods for selection of microorganisms for transformation reaction. (7)

Q4. a) Classify different antimicrobial agents on the basis of their mode of action, and indicate it with a neat diagram and examples. (7)

b) Explain fed batch fermentative production of Penicillin and its downstream processing. (7)

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Q5. a) Define Recombinant Vaccines. What are methods to characterize vaccines and maintain its storage conditions? (7)

b) Give method for preparation of monoclonal antibodies, and its application in Immunodiagnostics. (7)

Q6. a) Classify methods for enzyme immobilization, and compare specific features of each method(7)

b) How does the kinetics of immobilized enzymes gets affected, explain while comparing it with free enzyme system. (7)

Q7. Write short notes on any two: (7*2)

- a. Nucleic acid technology
 - b. 2D gel electrophoresis
 - c. Types of reactions mediated by microorganisms
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