

Question Paper

Exam Date & Time: 31-Mar-2021 (01:30 PM - 04:30 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Manipal Academy of Higher Education, Manipal MPharm Theory End-Semester Examinations.

Advanced Pharmaceutical Biotechnology [PBT-MPB104T - S2]

Marks: 75

Duration: 180 mins.

SECTION - A

Answer all the questions.

Answer the following (10 marks x 5 = 50 marks)

- 1) Discuss the steps involved in production of recombinant human insulin. (10)
- 2) Explain in detail the benefits of Pharmacogenomics. Discuss the goals and issues of concern with respect to Human Genome Project. (10)
- 3) Explain the growth requirements of animal cell cultures. Add a note on steps involved in preparation of a plant tissue culture. (10)
- 4) Sketch the parts of a Biosensor and enlist their function. Write briefly on the characteristics of an ideal Biosensor and mention their applications. (10)
- 5) "The entire drug development process usually takes about 10 - 15 years before an approved drug comes into market". Justify the given statement and elaborate on the challenges faced by Pharmaceutical companies during the whole process. (10)

SECTION - B

Answer all the questions.

Answer the following (5 marks x 5 = 25 marks)

- 6) Write short notes on transgenic animals. (5)
- 7) Explain the steps involved in in vivo gene therapy and write briefly on how it differs from ex-vivo gene therapy. (5)
- 8) With suitable examples, describe the anchorage dependent cells. (5)
- 9) What are embryonic stem cells? How they are different from adult stem cells? Explain (5)
- 10) Explain the role of four enzymes involved in DNA sequencing based on "Sequencing by Synthesis". (5)

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