MPY-102

M.Pharmacy I Semester

Examination, December 2014

Biotechnology and Bioinformatics

Time: Three Hours   *Maximum Marks: 70*

Note: i) Answer five questions. In each question part A. B. C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max. 100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals. Derivation, Design and Drawing etc.

1. a)   What is DNA sequencing?

b)   Give the function of RNA.

c)   Enumerate the various enzymes used in gene manipulation.

d)   Give an account of polymerase chain reaction based gene cloning.

Or

Discuss the functions of DNA with its replication and repair.

2. a)   What is germline gene therapy?

b)   Define vectors. Give example of vectors used for transferring genes to nerve cell.

c)   Describe the journey of clinical trials in gene therapy.

d)   What are conventional vaccines? Illustrate your answer giving suitable example. Also explain the need for new vaccines.

Or

Explain how genetically improved live attenuated vaccines can be used as new tool for development of vaccines. Support your answer with example.

3.   a) Explain the types of facilitated transport. Explain the different paths of apoptosis? Give the
b)   c) various strategies for combating cancer. List the main differences between mitosis and meiosis.
d)   Explain the process of meiosis in details with diagram.

Or

Explain the different pathways of apoptosis?

4. a)   What kinds of analysis can be done using bioinformatics tools?
b) c)   Define Probability Distributions. Describe in detail various applications of bioinformatics in
d)   pharmaceutical industries.
          Enlist the various sources of data that are utilized in various subject areas of bioinformatics.

Or

Why 'genome sequencing" is essential? Discuss the differences between genetic maps and physical maps?

5. a)   Define the term recombinant DNA technology.

b)   What are genomic protein targets?

c)   Elaborate the various in vivo transgenic models.

d)   How do on structural biology and rational drug design go hand in hand? Give an account oh the same with relevant examples.

Or

What do you understand by gene therapy? Discuss its application in therapeutics.