

Pre. Ph.D. Course Work (2017 Course) : SUMMER - 2018  
(Biotechnology)

SPECIFIC SUBJECT : Paper - II : BIOTECHNOLOGY

Date : Tuesday  
Day : 26/06/2018

S-2018-4756

Time : 10.00 AM TO 01.00 PM  
Max. Marks : 100

**N.B.**

- 1) Attempt **ANY FIVE** questions from **Section – I** and **ANY FIVE** from **Section - II**.
- 2) Answer to both the sections to be written in **SEPARATE** answer books.
- 3) Figures to the right indicate **FULL** marks.

**SECTION - I**

- Q.1** Illustrate the impact of any two applications of biotechnology in the area of environment with suitable examples. (10)
- Q.2** What do you understand by “Toxicity”? How is toxicity determined? Design an experiment to determine toxicity of a compound on cells. (10)
- Q.3** What are the different methods of bioremediation? Explain their advantages over conventional methods. Describe any one method of bioremediation in brief. (10)
- Q.4** Elaborate on the applications of animal cell culture technique in research. (10)
- Q.5** What are the different DNA sequencing methodologies? Bring out a comparative analysis of these methods. (10)
- Q.6** What is PCR? What are the different types of PCR? Describe ‘Real Time PCR’ in brief. (10)

**SECTION - II**

- Q.7** What is HPLC? State its principle. What are its advantages over liquid chromatography? Describe its applications. (10)
- Q.8** What are therapeutic agents? Explain the advantages and disadvantages of monoclonal antibodies as therapeutic agents. (10)
- Q.9** What are the different components of a research proposal? Describe the different heads to be considered under budget in a proposal. (10)
- Q.10** What is ‘Data Analyses’ and ‘Data Annotation’? Explain both with one example from each. (10)
- Q.11** Elaborate on the use of nanoparticles for medical application. (10)
- Q.12** Write short notes on: (Any Two) (10)
- 1) Fullerenes and their uses
  - 2) Mass spectrometry
  - 3) Bio fertilizers.

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