

**Pre. Ph.D. Course Work (2017 Course) : (Biotechnology) :
SUMMER - 2019**

SUBJECT: PAPER – II : BIOTECHNOLOGY

Day : Wednesday
Date : 24/04/2019

Time : 10.00 AM TO 1.00 PM
Max. Marks : 100

S-2019-5324

N.B.

- 1) Attempt any **FIVE** questions each section.
- 2) Figures to the right indicate **FULL** marks.

SECTION – I

- Q1** Discuss any two significant contributions of biotechnology in agriculture. (10)
- Q2** What are cell surface markers? How are they used to characterize cells and what is its relevance for research? (10)
- Q3** When is compound said to be toxic? What are the consequences of toxicity? Explain with suitable example. (10)
- Q4** Describe briefly *in-vitro* approaches for genetic improvement of commercial plants. (10)
- Q5** What are the different methods of DNA sequencing? Describe any one in brief. (10)
- Q6** Discuss the advantages and applications of Plant Tissue Culture. (10)

SECTION –II

- Q7** What are Vaccines? How are they produced? Explain using a suitable example. (10)
- Q8** What are the essential elements of a research proposal? What items should be included under the “budget” head? (10)
- Q9** What are Carbon Nanotubes? Explain its applications (10)
- Q10** State the principle of GC-MS technique. What are its advantages and applications? (10)
- Q11** What are biofuels? How are they produced? What are its advantages? (10)
- Q12** Write Short Notes on: (ANY TWO) (10)
- a) Single Cell Proteins
 - b) HPLC
 - c) Biofertilizers