

S.Y.B.SC. SEM – IV (CBCS - 2016 Course) : SUMMER - 2019

SUBJECT: BOTANY: PLANT BIOTECHNOLOGY

Day: Saturday

Date: 11/05/2019

S-2019-0848

Time: 11.00 A.M. To 02.00 P.M.

Max Marks. 60

N.B.

- 1) All questions are **COMPULSORY**.
 - 2) Draw neat and labeled diagrams **WHEREVER** necessary.
 - 3) Figures to the right indicate **FULL** marks.
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Q.1 Attempt **ANY TWO** of the following: (12)

- a) Give the application of tissue culture in agriculture.
- b) Describe protein based nanoparticles.
- c) Give scope and importance of biotechnology.

Q.2 Attempt **ANY TWO** of the following: (12)

- a) Explain chemical synthesis verses biological synthesis of nanomaterials.
- b) Describe activate sludge fermenter of waste water treatment.
- c) Give sources and advantages of *SCP*.

Q.3 Attempt **ANY TWO** of the following: (12)

- a) Describe the petrocrops that you have studied.
- b) What is explant? Describe a method for obtaining explant.
- c) Give the requirement for the growth of *Spirulina*.

Q.4 Attempt **ANY THREE** of the following: (12)

- a) What is genetic engineering? Give properties of plasmid.
- b) Describe mass cultivation of *Rhizobium*.
- c) Give products and byproducts of fermentation.
- d) What are restriction enzymes? Give their brief account.

Q.5 Attempt **ANY FOUR** of the following: (12)

- a) Give application of Azo-rhizo fertilizer.
- b) Which are the process of anaerobic waste water treatment.
- c) Give the uses of *SCP* of yeast.
- d) Comment on importance of biological fuels.
- e) Explain concept of environmental biotechnology.
- f) Describe role of *Azotobactor* in biofertilizer

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