

S.Y.B.SC. SEM – IV (2014 COURSE) :WINTER - 2017

SUBJECT: BOTANY: PLANT BIOTECHNOLOGY (B -41)

Day: Monday  
Date: 06/11/2017

W-2017-0634

Time: 03.00 PM TO 05.00 PM  
Max. Marks: 40

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
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**Q.1** Attempt any **TWO** of the following: **(10)**

- a) Explain the steps involved in plant tissue culture.
- b) Describe biogas production in detail.
- c) Give sources and disadvantages of *SCP*.

**Q.2** Attempt any **TWO** of the following: **(10)**

- a) What is bioreactors? Give tubular tower bioreactor.
- b) Describe the multidisciplinary nature of biotechnology.
- c) Explain chemical synthesis verses biological synthesis of nanomaterials.

**Q.3** Attempt any **TWO** of the following: **(10)**

- a) Describe the scope and importance of biotechnology.
- b) Explain the mass cultivation of *Rhizobium*.
- c) Give the application of tissue culture in an agriculture.

**Q.4** Attempt any **FIVE** of the following: **(10)**

- a) Enlist microorganisms involved in fermentation.
- b) Give importance of biological fuel.
- c) Enlist products and by products of fermentation.
- d) Which factors are required for growth of *Spirulina*?
- e) Enlist important petro-crops.
- f) Define BOD and COD.
- g) Give need of protein in diet.

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