3 SEM TDC BOT M 3

2016

(November)

BOTANY

(Major)

Course: 303

(Microbiology and Biotechnology)

Full Marks: 48

Pass Marks: 19 (Backlog)/14 (2014 onwards)

Time: 2 hours

The figures in the margin indicate full marks for the questions

1. (a) Write the correct option of the following:

1×3=3

- (i) The solidifying agent in a PDA medium is potato/dextrose/agaragar.
- (ii) The soil microflora available to the surrounding regions of the root but not attached to the root are called rhizoplane/rhizosphere/toposphere microflora.
- (iii) The plant viruses contain RNA/DNA/both RNA and DNA.

- (b) (i) Fill in the blank: 1
 The Bt-toxin is produced by the bacterium ____.

 (ii) Complete the following reaction: 1
 C₆H₁₂O₆ Yeast Enzyme 2C₂H₅OH + ____
- Glucose Ethyl alcohol
- 2. Write short notes on the following: $2\frac{1}{2} \times 4 = 10$
 - (a) Backcross
 - (b) Green manuring
 - (c) Bacterial flagella
 - (d) Explant in tissue culture
- 3. (a) What is the basic concept of microbiological science? What is its prime objective? Give an account of the contribution of scientists to the development of microbiology during the 20th century till date.

 3+2+5=10

a side may and Or

(b) Give a statement of virus and its biological status. Mention the differences between plant virus and animal virus. Give a critical view on replication of virus.

3+3+4=10

4. (a) What is genetic engineering? What is the role of genetic engineering in biotechnology? Give an account of the merits and demerits of genetic engineering. 2+3+6=11

Or

- (b) What are the basic principles of tissue culture? Give the composition of a common medium for tissue culture.

 Give short accounts of protoplast fusion and somatic hybridization. 3+5+3=11
- 5. Write short notes on any four of the following: 3×4=12
 - (a) Cyanobacterial biofertilizer
 - (b) Rhizosphere microflora
 - (c) Sterilization of culture media
 - (d) Mycoplasma
 - (e) Antibiotic and human welfare
 - (f) Laminar airflow chamber

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