

Total No. of Printed Pages—4

6 SEM TDC BIOTCH G 1

2018

(May)

BIOTECHNOLOGY

(General)

Course : 601

(Plant, Animal and Environmental
Biotechnology)

Full Marks : 48

Pass Marks : 19/14

Time : 2 hours

The figures in the margin indicate full marks
for the questions

1. Choose the correct answer. 1×5=5

- (a) Cybrids are
- (i) hybrid plants derived from cross-pollination
 - (ii) nuclear hybrids
 - (iii) recombinant cells
 - (iv) cytoplasmic hybrids

8P/577

(Turn Over)

(2)

(b) Which of the following microorganisms is known as super-bug for hydrocarbon degradation?

- (i) *Pseudomonas putida*
- (ii) *Bacillus cereus*
- (iii) *Bacillus subtilis*
- (iv) *Acinetobacterium* sp.

(c) DMSO is used as

- (i) gelling agent
- (ii) alkylating agent
- (iii) mutagen
- (iv) cryoprotectant

(d) The final stage of plant tissue culture before the new plants are taken out for cultivation in the fields is known as

- (i) micropropagation
- (ii) caulogenesis
- (iii) hardening
- (iv) embryogenesis

(e) Which of the following is commercially produced by mammalian cell culture?

- (i) Insulin
- (ii) Renin
- (iii) Plasminogen activator
- (iv) Antibacterial antibody

8P/577

(Continued)

(3)

2. Write briefly about the following : 4+3+3=10

- (a) Hybridoma and myeloma technology
- (b) Somaclonal variation
- (c) Role of phosphate solubilizing bacteria

3. What is surface sterilization? Write the detail methodology for surface sterilization of shoot and also elaborate shoot culture method.

2+3+6=11

Or

Explain how haploidic plants can be obtained by plant tissue culture method with a suitable diagram.

9+2=11

4. What is bioremediation? Explain how aromatic hydrocarbons can be degraded by microorganisms.

2+9=11

Or

What is bioleaching of mineral ores? Explain how minerals can be recovered with the help of microbes.

2+9=11

5. Write short notes on/Answer any two of the following :

5½×2=11

- (a) Vermicomposting process with a labelled diagram

8P/577

(Turn Over)

- (b) Production of Bt cotton with a suitable diagram
- (c) Production of biogas with a suitable diagram
- (d) Explain how recombinant proteins can be expressed in animal cells.
