

6 SEM TDC BIOTCH G 1

2015

(May)

BIOTECHNOLOGY

(General)

Course : 601

(Plant, Animal and Env. Biotech.)

Full Marks : 48

Pass Marks : 19

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

1. Choose the correct answer : 1×5=5

(a) The phase of suspension culture where the rate of cell multiplication is highest, is

(i) lag phase

(ii) log phase

(iii) linear phase

(iv) stationary phase

(2)

- (b) In vitro production of secondary metabolites is much higher from
- non-differentiated tissue
 - differentiated tissue
 - partly differentiated tissue
 - None of the above
- (c) Which of the following has been produced commercially from mammalian cell culture?
- Antibacterial antibiotic
 - Insulin
 - Antiviral vaccine
 - Lactate dehydrogenase
- (d) Which enzymes would be needed to degrade plant cell wall for protoplast formation?
- Cellulase, hemicellulase and pectinase
 - Cellulase, aldolase and hexokinase
 - Hemicellulase, isomerase and pectinase
 - All of the above
- (e) A cybrid is formed by fusing
- normal protoplast with a whole cell
 - normal protoplast with an enucleated protoplast
 - normal protoplast with a hybrid cell
 - normal protoplast with a haploid cell

(Continued)

(3)

2. Explain briefly the following : $3+3+2+2=10$
- Bt. toxin
 - Cell line
 - Callus
 - Totipotency
3. What is shoot tip culture? What are the differences between shoot tip culture and meristem culture? Mention the application of shoot tip culture in plant science. $2+5+4=11$
- Or
- How are haploids produced in tissue culture? Mention the significance of haploids. $7+4=11$
4. What do you mean by methanogens? Give at least two examples of methanogens. Mention their role in production of biogas. $4+2+5=11$
- Or
- What are ores? Discuss the role of micro-organisms in enrichment of ores. $2+9=11$
5. Write explanatory notes on any two of the following : $5\frac{1}{2}\times 2=11$
- Transgenic plants
 - Microbial degradation of pesticides
 - Vermiculture
 - Interferon
