

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
B.Sc. Winter 2017-18 Examination

Semester: 5
Subject Code: 11102302
Subject Name: Tissue Culture Techniques

Date: 22/12/2017
Time: 2.00 pm to 4.30 pm
Total Marks: 60

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Explain role the various components in macro stock and micro stock of MS media. (08)**
- Q.1. B) Answer the following questions (Any two)**
- (a) Define: 1. Anther culture 2. Herbicide resistant plants. (04)
 - (b) Draw the pathway used to generate blue rose. (04)
 - (c) Short note: Any 2 PTC hormones. (04)
- Q.2. A) Answer the following questions.**
- (a) Fill in the blanks. (04)
 1. Charcoal is used in _____ media and not used in _____ media
 2. The companies _____ and _____ were pioneers in generating genetically modified plants for agriculture.
 - (b) Short note: Protoplast fusion and somatic hybridization in plants. (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Differentiate between suspension culture and agar based culture. (03)
 - (b) Schematic diagram: Binary vector system in agrobacterium mediated gene transfer. (03)
 - (c) Short note: Ti plasmid. (03)
- Q.3. A) Explain gene therapy in detail with examples. (08)**
- Q.3. B) Answer the following questions (Any two)**
- (a) Short note: Insulin production in *E.coli*. (04)
 - (b) Short note: HeLa cells (04)
 - (c) Short note: Applications of ATC. (04)
- Q.4. A) Answer the following questions.**
- (a) Fill in the blanks. (04)
 1. Cryo preservation for animal tissue is done using _____ at _____ °C
 2. Animal cells are incubated at _____ °C, 5% CO₂ and _____% humidity.
 - (b) Define totipotency and pluripotency. (04)
- Q.4. B) Answer the following questions (Any two)**
- (a) Short note: Role of serum in ATC media. (03)
 - (b) Using the graph explain the life of a mortal cell line. (03)
 - (c) Short note: MOET (03)