

PARUL UNIVERSITY
FACULTY OF APPLIED SCIENCE
M.Sc/IMSc. Winter 2019-20 Examination

Semester: 3/9

Subject Code: 11202202

Subject Name: Cell Culture Technology & Tissue Engineering

Date: 04/12/2019

Time: 2:00pm to 4:30pm

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) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**
 (a) Describe different media which are involved in animal tissue culture
- Q.1. B) Answer the following questions (Any two)**
- (a) Explain Somatic embryogenesis (04)
 (b) Short note on haploid production (04)
 (c) Describe Callus culture (04)
- Q.2. A) Answer the following questions.**
- (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks) (04)
 1. Define Dedifferentiation
 2. What is redifferentiation
 (b) Write short note on balanced salt solutions (04)
- Q.2. B) Answer the following questions (Any two)**
- (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. Which different chemicals are used for chemofusion?
 2. Define totipotency
 3. Define somaclonal variation
 (b) What is cell line? Describe its various type (03)
 (c) Advantages and disadvantages of micro propagation (03)
- Q.3. A) Short note. (08)**
- (a) What is organ culture? Describe its various technique (any two).
 (b) List out different substrate used in ATC.
- Q.3. B) Answer the following questions (Any two)**
- (a) Short note on cell suspension culture (04)
 (b) What is Apoptosis? Intrinsic pathway in Apoptosis (04)
 (c) Write down Clinical applications of stem cell therapy (04)
- Q.4. A) Answer the following questions.**
- (a) What is stem cell? How many types are there? Write different characteristics of it (04)
 (b) How to disaggregate explant in Animal tissue culture. (04)
- Q.4. B) Answer the following questions (Any two)**
- (a) Short note/ Multiple choice questions. (Each of 01 marks) (03)
 1. The phenomenon of the reversion of mature cells to the meristematic state leading to the formation of callus is known as
 a) Differentiation b) Dedifferentiation c) either (a) or (b) d) none of these
 2. The production of secondary metabolites require the use of
 a) Protoplast b) Cell suspension c) Meristem d) Auxillary buds
 3. In a developing embryo, stem cells can differentiate into
 a) ectoderm b) endoderm c) mesoderm d)all of above
 (b) Describe protoplast isolation (03)
 (c) Advantages Of Somatic Embryogenesis (03)