

Department of Computer Science & Engineering

Title: PREVIOUS YEAR QUESTION PAPER

QUESTION PAPER 1

Roll No.

Total Pages : 02

BT-7/M-20

37160

STEM CELL TECHNOLOGY

BT-419N

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *Five* questions in all, selecting at least *one* question from each Unit.

Unit I

1. Write a complex pattern of cell responses from a simple morphogenic gradient. **15**
2. Write short notes on the following :
 - (a) Developmental potential of all the cells of every mammalian embryo. **10**
 - (b) The role of Intercellular clock. **5**

Unit II

3. Write a note on epidermis and its renewal by stem cell. **15**
4. Describe the formation of new skeletal muscle cell from fusion of myoblasts and change in the muscle cells with change to protein isoforms. **15**

Unit III

5. Write short notes on the following :
- (a) Connective tissue cell family **5**
 - (b) Regulation of the production of cells by sequential action of signalling molecules. **10**
6. Write short notes on the following :
- (a) Continuous remodeling of bone by cells within **10**
 - (b) Stabilization of the body structure by connective tissues framework. **5**

Unit IV

7. Describe the classification and manifestation of hemopoietic stem cell disorders. **15**
8. Write notes on the following :
- (a) Preservation and clinical use of blood and blood components **10**
 - (b) Hemaphoresis procedures. **5**

QUESTION PAPER 2

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in total, selecting at least *one* question from each unit.

UNIT-I

1. (a) Describe the historical events in the field of food biotechnology. (7)
- (b) Write short notes on the following :
 - (i) Food as Substrate for Microorganisms.
 - (ii) Food Fermentation Industries. (4×2=8)
2. (a) Explain the methods of waste disposal from various food industries. (10)
- (b) Write the scope and significance of fermented products. (5)

UNIT-II

3. Briefly explain the following :
 - (a) Low Calorie Sweetners.
 - (b) Food Colouring.
 - (c) Probiotics. (5×3=15)

4. What are nutraceuticals? Describe the types, sources and significance of nutraceuticals with the help of suitable examples. (15)

UNIT-III

5. (a) Explain the factors affecting spoilage affecting microbial growth. (9)
- (b) Explain the terms : (i) Pasteurization ; (ii) Blanching ; (iii) Canning. (6)
6. Describe the methods of food preservation. (15)

UNIT-IV

7. (a) What do you understand by HACCP? (7)
- (b) How is monitoring of food regulated ? What is the role of food organizations? (8)
8. (a) Describe the need and significance of food packaging. (5)
- (b) Discuss the types of food packaging with special emphasis to flexible and biodegradable packaging. (10)
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QUESTION PAPER 3

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *five* questions in all, selecting at least *one* question from each unit.

UNIT-I

1. (a) Describe the basic concepts of statistics. (4)
(b) Write the formulae and significance of Mean, Median and Mode. (7)
(c) How is Statistics significant over mathematics? (1)
2. (a) What is frequency distribution curve ? Explain with help of examples. (5)
(b) What are variables ? (2)
(c) Explain in brief basic Quantitative method, standard deviation and variance. (08)

UNIT-II

3. Describe briefly the concepts, procedure and types of probability distribution. (15)

4. (a) What is Null Hypothesis ? How is it estimated? (5)
(b) What do you mean by students Ttest? Describe in brief. (5)
(c) Write the method and significance of Chi square test. (5)

UNIT-III

5. Write short notes on :
(a) Rest.
(b) Two Way Anova.
(c) Three Way Anova. (15)
6. Explain the analysis of correlation, covariance and multiple regressions by taking suitable examples. Also write their significance. (15)

UNIT-IV

7. What do you mean by approximation and error in statistics? Describe the basic concepts and significance of this in various tests. (15)
8. (a) Explain Genetic Algorithm. (7)
(b) Discuss the applications of statistical methods in biotechnology. (08)