C 2033 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION MARCH 2021

(CBCSS)

General Biotechnology

GBT 4E 05—INDUSTRIAL AND FOOD BIOTECHNOLOGY

(2019 Admissions)

Time : Two Hours and a Half Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend* **all** *questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Section A

Answer any **four** *questions.*
Each question carries a weightage of 2.

1. What is HACCP ?
2. What is *Saccharomyces cerevisiae* used for ?
3. What are the uses of invertase ?
4. Write briefly on starter cultures for yogurt production ?
5. What are neutraceuticals ?
6. What are recombinant enzymes ?
7. Comment on the use of microbes for the production of bioalkanes.

(4 × 2 = 8 weightage)

Section B

Answer any **four** *questions.*
Each question carries a weightage of 3.

8. Explain the importance of fermentation in the diary industry.
9. Write a note on lactic acid bacteria and their importance in food industry.

Turn over

10. Explain the use of biosensor devices for bioprocess control.
11. Discuss the microbiological aspects of vitamin B_{12} production.
12. What are probiotics ? How are they beneficial ?
13. What are the potential safety concerns associated with food biotechnology ?
14. Write a note on food additives.

(4 × 3 = 12 weightage)

Section C

Answer any **two** *questions.*
Each question carries a weightage of 5.

15. Discuss the microbial production of enzymes for applications in food industry.
16. Discuss the application of bioprocess technology in food industry.
17. Describe the methods of immobilization of microbiai cells and enzymes.
18. Discuss the microbiological aspects of production of alcoholic beverages.

(2 × 5 = 10 weightage)

C 2031 (Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER M.Sc. DEGREE (REGULAR) EXAMINATION MARCH 2021

(CBCSS)

General Biotechnology

GBT 4E 03—STEM CELL BIOLOGY—Part B

(2019 Admissions)

Time : Two Hours and a Half Maximum : 30 Weightage

General Instructions

1. *In cases where choices are provided, students can attend* **all** *questions in each section.*
2. *The minimum number of questions to be attended from the Section / Part shall remain the same.*
3. *There will be an overall ceiling for each Section / Part that is equivalent to the maximum weightage of the Section / Part.*

Section A

Explain any **four** *questions.*
Each question carries a weightage of 2.

1. Embryonic stem cells.
2. FACS.
3. Neural stem cells.
4. Induced pluripotent stem cells.
5. Mesenchymal stem cells.
6. Somatic stem cells.
7. Any *two* conventional methods for stem cell separation.

(4 × 2 = 8 weightage)

Section B

Describe any **four** *questions.*
Each question carries a weightage of 3.

8. Difference between pluripotent and multipotent stem cells.
9. Types of adult stem cells.

Turn over

10. Stem cell therapy for diabetes.

11. Ethical issues with isolation of embryonic stem cells.

12. Stem cell isolation methods.

13. Model organisms used for stem cell study.

14. Stem cell therapy for kidney failure.

(4 × 3 = 12 weightage)

Section C

Discuss in detail any **two** *questions.*
Each question carries a weightage of 5.

15. Stem cell therapy for neurodegenerative diseases.

16. Applications of stem cells in cancer therapy.

17. Ethical issues in stem cell research.

18. Stem cell characterization techniques.

(2 × 5 = 10 weightage)