

M.Sc. Semester - 4 (CBCS) Examination
Oct/Nov -2020 [OLD COURSE]
FERMENTATION TECHNOLOGY -2 (ELECTIVE - 1)

Time: 2:00 Hours**Marks: 56****Instructions:**

1. Figures to the right indicate marks.
 2. There are five questions in the question paper.
 3. Answer any four of the following questions.
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Q. 1 Answer the following (any seven out of ten, each of **two** marks) 14

1. What is downstream process?
2. Mention the techniques used in separation of fermented product.
3. Mention two purification methods used in fermentation technology.
4. Enlist the medium components used for ethanol fermentation.
5. Mention two examples of ethanol producing bacteria.
6. Define: whey and mention its application.
7. Mention the industrial application of lactic acid.
8. Discuss the application of pectinase.
9. Enlist the production medium used in penicillin production.
10. Describe industrial application of dextran.

Q. 2 Answer the following (any two out of three, each of **seven** marks) 14

1. How extract the fermented product? Discuss in detail.
2. Write a note on product crystallization and mention its advantages.
3. Discuss microbial cell separation in detail.

Q.3 (A) Answer the following 14

1. Explain value added By-product produced from the ethanol fermentation. [5]
2. Write a note on biomass production from molasses. [5]
3. Write a short note on spent sulphite liquor. [4]

OR

Q.3 (B) Answer the following (each of **seven** marks) 14

1. Discuss preparation and application of immobilized cell.
2. Describe the ethanol production using yeast.

Q.4 (A) Answer the following (any two out of three, each of **five** marks) 10

1. Explain the citric acid production.
2. Write a note on glutamic acid production.
3. Discuss penicillin production.

Q.4 (B) Answer the following (any one out of two) 04

1. Describe steps involved in the extraction penicillin antibiotics.
2. Write a short note on vitamin B12.

Q.5 Answer the following (any two out of four, each of **seven** marks) 14

1. Discuss the amylase production with industrial application.
2. Write a note on xanthan gum.
3. Discuss source and production of enzyme.
4. Describe protease production and mention its industrial application.
