

M.Sc. (Micro) Semester - 3 (CBCS) Examination**Oct/Nov. -2019 – [NEW COURSE]****Bioprocess Engineering and Fermentation Microbiology (Core)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

SECTION-I**1. Answer the following**

- A. Write a short note on raw materials used in the industrial media. **07**
B. Explain role of starch and cellulose in cultivation of microbes. **07**

OR

1. Explain the Batch culture kinetics with suitable figure. **14**

2. Answer the following

- A. Describe the batch sterilization process. **07**
B. Explain filter and dry heat sterilization techniques. **07**

OR

2. Explain the stirred tank and continuous fermentation process with diagram. **14**

3. Do as direct (any seven out of eight questions each of one mark) **07**

1. Explain growth factors and its importance.
2. Describe filter sterilization.
3. Give the importance of oxygen transfer in activated sludge process.
4. How would you sterilize the media? Explain.
5. Mention the advantages of continuous culture.
6. Define aerator.
7. Explain uses of plant waste material in fermentation industries.
8. Define molasses.

SECTION-II

1. Explain the production of vitamins B12. **14**

OR**1. Answer the following**

- A. Write note on fermented food prepared from the Milk. **07**
B. Short note: glutamic acid production. **07**

2. Discuss the SCP production and clarify its nutritional values. **14**

OR**2. Answer the following**

- A. Write a short note on Xanthan gum. **07**
B. Explain production of Ergot Alkaloids. **07**

3. Do as direct (any seven out of eight questions each of one marks) **07**

1. Describe the term Sauerkraut.
2. What is EPS? Explain in brief.
3. Mention the nutritional values of milk.
4. Describe the raw material used in production of beer.
5. What is Starter culture?
6. Mention the application of Ergot Alkaloids in food industry.
7. *Gluconobacter* are used for the production of _____.
8. What are the safety measures of SCP?
