

VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.TECH -DEGREE EXAMINATIONS- APR/MAY - 2019
BIOTECHNOLOGY
FIRST SEMESTER
ADVANCED BIOPROCESS ENGINEERING
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions**Part-A (10 x 2 =20 Marks)**

- 1 Comment on sterilization and its types.
- 2 Write a note on Filter sterilization of Liquid.
- 3 Mention few important points to be considered in the design and construction of Fermenter.
- 4 Write about the principles of Membrane bioreactors.
- 5 Mention the limitations of Static method of Gassing out?
- 6 Mention the Importance of P_H and Temperature maintenance.
- 7 How to separate Soluble Products?
- 8 Differentiate Micro and Macro scale production.
- 9 Mention the commercially available medium for mammalian cell culture?
- 10 Define Solid State Fermentation (SSF).

PART-B (5 x 16 = 80)

- 11 a. Explain briefly about thermal death kinetics.
OR
b. Give a detailed note on Development of Bacterial inoculum and the importance of Bacterial Fermentation processes.
- 12 a. Briefly explain the Growth Pattern and Kinetics in Batch Culture.
OR
b. Give an account on design and operations of Novel bioreactors.
- 13 a. Briefly explain about control loops and self adapting controllers.
OR
b. Give a detailed note on Types of control system.
- 14 a. Explain the unstructured kinetic models for Microbial growth.
OR
b. Write detailed notes on the Chromatographic development techniques.
- 15 a. Give a brief account on economics of tissue culture.
OR
b. What is invitro fertilization? Bring out its significance.

VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.TECH -DEGREE EXAMINATIONS- APR/MAY - 2019
BIOTECHNOLOGY
THIRD SEMESTER
BIOINDUSTRIES AND ENTREPRENEURSHIP
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions
Part-A (10 x 2 =20 Marks)

- 1 List the Qualities Needed For Motivational Leadership.
- 2 Gist the metrices in Operation management.
- 3 What are the specific activities under PATSER?
- 4 Give a note on Strategy evaluation and correction.
- 5 What are the types of containment levels?
- 6 Give the different types of vectors used in gene therapy.
- 7 Define Venture capital.
- 8 Give few suggestions on profiling the bioentrepreneur.
- 9 What is Price/Sales Ratio?
- 10 Suggest few key policy recommendations and interventions in Biotechnology.

PART-B (5 x 16 = 80)

- 11 a. Describe in detail about controlling and decision making.
OR
b. Explain in detail the concept of supply chain management
- 12 a. Describe the process of strategic planning and state its importance.
OR
b. Write short notes on a) Generic strategy alternatives b) Stability expansion.
- 13 a. Write in detail about Levels of containment in biosafety.
OR
b. Explain in detail about stem cell, types and applications.
- 14 a. Discuss in detail about Biotechnology innovations benefits society.
OR
b. Give a detailed note on profiling the bioentrepreneur.
- 15 a. Explain briefly on Biotechnology investment trading rules.
OR
b. Write a detailed note on Government funding for Biotechnology.

VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.TECH -DEGREE EXAMINATIONS- APR/MAY - 2019
BIOTECHNOLOGY
THIRD SEMESTER
RESEARCH METHODOLOGY

(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

- 1 Write short note on types of research design.
- 2 What is meant by Thesis?
- 3 What is meant by samples?
- 4 Write the significance of frequency polygons.
- 5 Calculate the arithmetic mean of 2,4,6,8,10
- 6 State the assumptions in ANOVA.
- 7 Write the principle behind chromatographic techniques.
- 8 Define stationary phase.
- 9 How does cuvette helps in analysing sample.
- 10 Define atomic absorption spectroscopy.

PART-B (5 x 16 = 80)

- 11 a. Writ brief notes on the following:
a. Exploratory research designs.
b. Diagnostic research designs. C. Descriptive research designs.
d. Experimental research designs.

OR

- b. Define thesis. Write note on thesis writing and its Structure, Style and discourse markers.
- 12 a. Write note on data. Explain in detail about collection and presentation of data.

OR

- b. Give brief note on discrete scale and continuous scale.
- 13 a. A normal population has a mean of 6.8 and standard deviation of 1.5. A sample of 400 numbers gave a mean of 6.75. Is the difference significant?

OR

- b. a) The nicotine content in milligrams in two samples of tobacco were found to be as follows

(Sample A	24	27	26	21	25	
Sample B	27	30	28	31	22	36

Can it be said that the two samples came from the same normal population

- b) Two random samples gave the following results.

Sample	Size	Sample Mean	Sum of squares of deviations from the mean
1	10	15	90
2	12	14	108

Test whether the samplers come from the same normal population.

- 14 a. Explain in detail about the principle and applications of paper chromatography.

OR

- b. Write detail about gas chromatography and its principle behind it.

- 15 a. Explain in detail about principle and applications of UV-Septrophotometer.

OR

- b. Write down the principle, instrumentation and applications of atomic absorption spectroscopy.

VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.TECH -DEGREE EXAMINATIONS- APR/MAY - 2019
BIOTECHNOLOGY
THIRD SEMESTER
ELECTIVE - ENVIRONMENTAL BIOTECHNOLOGY
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions
Part-A (10 x 2 =20 Marks)

- 1 Give any two differences between symbiotic and free living bacteria in the soil.
- 2 Explain biotic and abiotic factors.
- 3 Define vermicomposting and list the feedstock used in it.
- 4 List the sources of air pollutants.
- 5 Write a short note on dye industry pollutants.
- 6 Give an account on industrial waste.
- 7 List the various methods of collection of MSW
- 8 What are the alternative waste treatment technologies?
- 9 Write short note on industry specific assessment methods.
- 10 Comment on Global Dimming

PART-B (5 x 16 = 80)

- 11 a. Elaborate the different types of microorganisms present in the soil and discuss about positive and negative roles played by them.

OR

 - b. Explain briefly about a) Gene bank b) Ecological adaptations.
- 12 a. Describe the approaches of *In situ* bioremediation with special emphasis on Land forming, Bioaccumulation and Bioaugmentation

OR

 - b. Give a detailed account on biodegradation of surfactants and pesticides.
- 13 a. Discuss in detail about the sources and disposal of pharmaceutical wastes.

OR

(P.T.O)

b. “Waste is no more a waste but a resource” – Justify the statement with suitable examples.

14 a. Describe various Methods for collection and disposal of MSW.

OR

b. How will you classify Hazardous waste management?

15 a. Write notes on a] EIA (b) Environmental issues at regional level.

OR

b. What are the steps taken by the Government to control deforestation?

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M.TECH -DEGREE EXAMINATIONS- APR/MAY - 2019
BIOTECHNOLOGY
THRID SEMESTER
ELECTIVE - FOOD SCIENCE AND TECHNOLOGY
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours

Maximum Marks:100 Marks

Answer **ALL** questions

Part-A (10 x 2 =20 Marks)

- 1 How does aldose differ from ketose?
- 2 Write the structural organization of Protein.
- 3 What is food microbiology
- 4 Define souring
- 5 What is Canning?
- 6 Indicate the importance of carotenoids and anthocyanins as food colorants
- 7 Give the advantages of rapid freezing
- 8 Define microwave processing of foods
- 9 Give the steps involved in beverage production
- 10 Define about Minchin

PART-B (5 x 16 = 80)

- 11 a. What are fatty acids? Classify with suitable example.

OR

b. Explain the deficiency symptoms of (a) Macro minerals (b) Micro minerals
- 12 a. Explain different irradiation techniques in food preservation

OR

b. Explain in detail about bacterial food infections
- 13 a. Explain briefly about the Intentional food additives with example.

OR

b. What is a food additive? Classify additives for antimicrobial preservation.
- 14 a. How organic acids, sulphur and nitrogen compounds function as preservatives?

OR

b. Give an brief account on staphylococcus food intoxication
- 15 a. State and explain applications of vegetable based food products

OR

b. Explain about meat and meat products.
