VINAYAKA MISSIONS RESEARCH FOUNDATION
(Deemed to be University)
M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Third/Fifth 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   What are the main functions of management?

2   List the types of motivation.

3   Differentiate strategic and tactical planning.

4   Why strategy evaluation is important?

5   Explain gender bias.

6   Give some controversies over the organ donation

7   List any four leading companies in biotechnology.

8   How does the healthcare industry use biotechnology?

9   What are the 4 major industrial areas in biotechnology?

10 Define tactics

PART-B (5 x 16 = 80)

11 a.   What do you understand by leadership style? Describe the different styles of leadership.
OR
b.   Define decision making and explain the process of decision making that affects the efficiency of the business decisions.

12 a.   Elaborate about strategic implementation process.
OR
b.   What is strategy evaluation? Discuss the steps involved in strategy evaluation framework.

13 a.   Write a detailed note on National and international laws in Bioethics.
OR
b.   Writ short notes on: a) ethical issue on life and death b) personhood) ethical issues in abortion.

14 a.   Discuss the essential skills do entrepreneurs need.
OR
b.   Elaborate in detail about origin of Bio-entrepreneurship and relation between biotechnology and Bio-entrepreneurship

15 a.   Elaborate about Venture capital financing of Biotechnology with example.
OR
b.   Discuss in detail about Perception analysis of biotech companies with a case study.

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VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Third /Fifth 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   Define conservation

2   Comment on gene bank.

3   What is bio argumentation?

4   Comment on Biophile.

5   Define condensates.

6   Explain the main criteria for the identification of waste.

7   Give the flow chart of waste minimization methodology.

8   Explain Pyrolysis.

9   Write the uses of life cycle assessment

10   Define EIA.

PART-B (5 x 16 = 80)

11 a.   Define Ecosystem. Explain in detail about food chain and food web with neat diagram.

OR

  b.   Define pollution and explain the causes, effects and solutions of Air pollution.

12 a.   Define phytoremediation. Briefly explain the role of few plant species in the pollution control.

OR

  b.   Comment on bio fertilizer and explain the process of vermicomposting and its significance.

13 a.   Explain the various physical methods of treatment.

OR

  b.   Illustrate the characteristics of waste water.

14 a.   Explain in detail about waste to energy.

OR

  b.   List the type of Incinerators. With a neat sketch, explain any one.

15 a.
     What is the recent advancement in generating energy from biodegradable and non biodegradable waste?

OR

  b.   Explain in detail about incineration disposal technique.

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VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Third 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   Write biotechnological role in food industry
2   Elaborate in detail about the sources of different minerals.
3   Write about food borne bacterial pathogens
4   Define Meat processing and curing
5   Define Blanching.
6   Give the role of wood smoke and antibiotics as preservatives.
7   Define cold sterlization.
8   Write about botulism
9   Give the steps involved in beverage production
10   Give short notes on sauerkraut

PART-B (5 x 16 = 80)

11 a.   What are fatty acids? Classify with suitable example.
OR
   b.   Describe the sources, daily requirements, functions and deficiency symptoms of Vitamin K.

12 a.   Explain different irradiation techniques in food preservation
OR
   b.   Draw the structure of B1, G1 aflatoxin and patulin.

13 a.   Explain briefly about the Intentional food additives with example.
OR
   b.   What is a food additive? Classify additives for antimicrobial preservations.

14 a.   How organic acids, sulphur and nitrogen compounds function as preservatives?
OR
   b.   Explain the role of Neurotoxins in food borne illness.

15 a.   State and explain applications of vegetable based food products
OR
   b.   Explain about fish and poultry products.

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VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Second Semester
IMMUNOTECHNOLOGY
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours   Maximum Marks:100 Marks

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

1   Define Hematopoises and Lymphopoises.

2   Comment on mononuclear phagocytes

3   What is clonal anergy?

4   Briefly explain macrophage microbicidal Assay.

5   Name few drugs used for treating tuberculosis.

6   Write the importance of MHC molecules in defence mechanism.

7   Comment on cross reactivity.

8   List the applications of Western blot technique.

9   Differentiate attenuated and inactivated vaccines.

10   comment on multivalent subunit vaccines.

PART-B (5 x 16 = 80)

11 a.   With a neat sketch explain the organization and structure of lymphoid organs.
OR
   b.   What are APCs? Explain how the macrophages degrade particulate antigen.

12 a.   Write the properties of cytokines and list the functional groups of cytokines with their targets and effects.
OR
   b.   Discuss in detail about the role of interleukins in cell mediated immunity.

13 a.   Describe the causative agent, pathogenesis and diagnosis of leprosy
OR
   b.   Write short notes on the following:
        a. rabies
        b. typhoid

14 a.   Write in detail about a) radioimmunoassay. b) immunomics.
OR
   b.   What is ELISA? Write its principle, types and applications with a neat labelled sketch.

15 a.   Discuss in detail about designing of DNA vaccine.
OR

b.   Discuss in detail about combinatorial libraries for antibody production

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M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Third/Fifth 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   Differentiate between Action researches ex post Facto research.
2   Define Pilot study.
3   Write the uses of Sampling distributions.
4   Write the significance of tabulation in frequency distribution.
5   Calculate the arithmetic mean of 2,4,6,8,10
6   Define Analysis of variance
7   What are the applications of paper chromatography?
8   Write down the applications of thin layer chromatography.
9   Note down the applications of colorimeter in biotechnology.
10 What are the applications of UV-Spectrophotometer?

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.   Explain the following.
        a. Abstract.
        b. Informative abstracts.
        c. Bibliography.
        d. Reference styles.
        e. End notes.
        f. Abbreviations used in scientific writing.

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.   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.   List out the applications of thin layer chromatography in various field.

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

OR

b.   Describe in detail about Instrumentation of Flame Photometry.

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VINAYAKA MISSIONS RESEARCH FOUNDATION
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M.E -DEGREE EXAMINATIONS - FEB-2022
BIOTECHNOLOGY
Second Semester
STEM CELL BIOLOGY
(Candidates admitted under 2017 Regulations-CBCS)

Time : Three Hours   Maximum Marks:100 Marks

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

1   Expand ICM. Add a short note on it

2   Write a note on germ layers.

3   Write short notes on cell cytotoxicity.

4   What is gas foaming?

5   Give brief account on Aldefluor assay.

6   Comment on the adult cell importance in cloning.

7   List the advantages and limitations of human embryonic stem cells.

8   Give the current advantages and limitations of human somatic stem cells.

9   Comment on nuclear nuclear transplantation and therapeutic transplantation.

10   Explain in short about syngeneic and allogenic stem cell transplant

PART-B (5 x 16 = 80)

11 a.   Write in detail about the mammalian stem cells development.

OR

b.   What are the advantages and disadvantages in using cord blood cells for patients?

12 a.   Give the role of Scaffolds in tissue reconstruction.

OR

b.   Discuss in detail about cells Assays for cell viability and cytotoxicity

13 a.   Explain the process of the development of human neurospheres in neurons.

OR

b.   Explain the Stem cells and cloning and its importance.

14 a.   Discuss about the current advantages and limitations of human somatic stem cells.

OR

b.   Enumerate human embryonic stem cell public policy.

15 a.   Enumerate in detail about nuclear transplantation methods.

OR

b.   How hematopoietic stem cells can be used to treat autoimmune diseases?

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