R0576	Sub. Code
	453N08

M.A. DEGREE EXAMINATION, NOVEMBER – 2023

Ninth Semester

Home Science (Specialization – I : Nutrition and Dietetics)

ADVANCED BIOCHEMISTRY

(CBCS-2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Classify Blood groups.

2. What are the electrolytes that help to regulate water balance?

3. What are polysaccharides? Give example.

4. Define Glycolysis.

5. Draw the structure of protein.

6. Differentiate the purines and pyrimidines.

7. Write the biological functions of lipids.

8. What are the steps of Beta-Oxidation of fatty acid?

9. List out the four pituitary hormones.

10. What are the primary role of electron transport chain?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write about the composition of blood.

Or

(b) How the body maintains acid-base balance? Explain.

12. (a) Explain the physical and chemical properties of carbohydrates.

Or

(b) Differentiate glycogenesis and glycogenolysis.

13. (a) Discuss the properties of amino acids.

Or

(b) Write short note on Transamination.

14. (a) Explain the biological importance of fats.

Or

(b) Elaborate the biosynthesis of phospholipids.

15. (a) Elucidate the biochemical properties of water-soluble vitamins.

Or

(b) Write short notes on Thyroid hormones.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Explain the mechanism and regulation of blood coagulation.

17. Illustrate the TCA cycle.

18. Elucidate the biosynthesis and degradation of purines and pyrimidines.

19. Elaborate the structure of lipids and discuss the chemical properties of fats.

20. Explain the enzymes in differential diagnosis of diseases and their clinical significance.

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R0577	Sub. Code 453N09

M.A. DEGREE EXAMINATION, NOVEMBER – 2023

Ninth Semester

Home Science (Specialization – I : Nutrition and Dietetics)

FOOD MICROBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define food microbiology.

2. List out the different types of bacteria.

3. How many stages are there in the growth curve of bacteria?

4. How does oxygen cause food spoilage?

5. Name any four water borne diseases.

6. What are the changes will occur during food spoilage?

7. Mention the methods of identification of microorganisms.

8. Define isolation technique.

9. Write the methods on the removal of microorganisms in foods.

10. Expand MAP and CAP.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Briefly explain the general morphology of bacteria.

Or

(b) Describe the desirable importance of microorganism in food.

12. (a) Discuss the extrinsic parameters of food affecting the microbial growth.

Or

(b) Write about the factors responsible for microbial spoilage.

13. (a) Differentiate food infection and intoxication.

Or

(b) Write about the water borne diseases and its prevention.

14. (a) Write any one method for the microbiological examination of food.

Or

(b) Explain the Rapid dye reduction tests for the determination of microbiological examination of food.

15. (a) Explain the principles of food preservation.

Or

(b) What is MAP and list out advantages and disadvantages?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Enumerate the classifications of bacteria according to morphology.

17. Explain the types of food spoilage in detail.

18. Elaborate the water borne diseases and its prevention.

19. Explain the rapid methods used for the detection of specific organisms and toxins.

20. Explain the chemical and biological methods used of food preservation.

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R0578	Sub. Code
	453N10

M.A. DEGREE EXAMINATION, NOVEMBER – 2023

Ninth Semester

Home Science (Specialization – I Nutrition and Dietetics)

RESEARCH METHODOLOGY AND STATISTICAL ANALYSIS

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Name any two tools of data collection.

2. What is meant by problem identification?

3. State any two uses of quartile deviation?

4. Define Mean

5. What is correlation?

6. State the purpose of bibliography in research.

7. The number of rooms in the seven hotels in Chennai city is 71,30,61,59,31,40 and29. Find the median.

8. List any four types of Probability sampling technique.

9. Expand – ANOVA.

10. What is research report?

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Explain the process of Research.

Or

(b) Write a note on descriptive research.

12. (a) The weight of 6 students in Kg are 14,26,28,20,35,30 Find the median.

Or

(b) Discuss Mean Deviation and its uses.

13. (a) Difference between Correlation and Regression.

Or

(b) Basic concepts in testing of hypothesis.

14. (a) Calculate Karl Pearson's coefficient of correlation from the following data:

X	6	8	12	15	18	20	24	28	31
Y	10	12	15	15	18	25	22	26	28

Or

(b) Calculate the regression coeffiecient for the following data:

X	1	2	3	4	5	6	7
Y	9	8	10	12	11	13	14

15. (a) Write a note on analysis of variance.

Or

(b) What are the steps involved in research report?

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write a brief note on preliminaries of research report.

17. There is a certain sample of 2000 families, 1400 families are consuming tea. Out of 1800 BPL families, 1236 families are consuming tea. Use Chi — Square test and state whether there is significant difference between the consumption tea among BPL and non-BPL families.

18. The following data are the weight of students of in a class. Find the Mean, Median and mode.

Weight (kg)	10	20	30	40	50	60	70
Number of students	4	7	12	15	13	5	4

19. Explain in detail on sampling methods

20. Three composition instructors recorded the number of spelling errors which their students made on a research paper. At 1% level of significance tests whether there is significant difference in the average number of errors in the three classes of students.

Instruction 1	2	3	5	0	8		
Instruction 2	4	6	8	4	9	0	2
Instruction 3	5	2	3	2	3	3	

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R0579	Sub. Code
	453EC6

M.A. DEGREE EXAMINATION, NOVEMBER – 2023

Nineth Semester

Home Science
(Specialisation I : Nutrition and Dietetics)

Elective : FUNCTIONAL FOODS AND NUTRACEUTICALS

(CBCS – 2019 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. What is functional food?

2. What are the two categories of functional foods?

3. What are phenols?

4. Write the general Properties of Terpenoids.

5. What is Microwave-Assisted Extraction?

6. What are the two methods of chemical extraction of phytochemicals?

7. Give any four advantages of prebiotics.

8. How is the consumption of Lactic Acid Bacteria beneficial?

9. What is an immunomodulators?

10. Define Nutrigenomics.

Part B (5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Bring out the significance of functional foods.

Or

(b) Classify functional foods.

12. (a) Briefly explain about glucosinates and phytoestrogens.

Or

(b) Write the significance omega-3 in human health.

13. (a) Discuss about the extractive methods of active materials.

Or

(b) How will you store the raw materials with minimal damage to sensitive bioactive compounds?

14. (a) Analyze the importance of dietary fibre in human health.

Or

(b) Write short notes on Lactobacillus and Bifidobacterium.

15. (a) Write the role of nanotechnology in functional food industry.

Or

(b) Explain the concept of personalized medicine.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Examine the role of nutraceuticals in health and management of obesity.

17. Give an account of the natural occurrence of phytochemicals.

18. Briefly explain about the recent development in the isolation of phytochemicals.

19. Elaborate on prebiotics and its ingredients in foods.

20. Elaborate on Nutrigenomics.

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