

**DEPARTMENT OF MICROBIOLOGY AND FST (FOOD SCIENCE &
TECHNOLOGY)
GITAM INSTITUTE OF SCIENCE
GANDHI INSTITUTE OF TECHNOLOGY AND MANAGEMENT (GITAM)
(Declared as Deemed to be University u/s 3 of the UGC Act, 1956)**

**Food Science & Technology
GRCET - 2019**

Syllabus

PART-A

Research Methodology: Meaning of Research, Objectives of Research, Motivation in Research, Types of Research, Research Approaches, Significance of Research, Research Methods versus Methodology.

Defining the Research Problem: What is a Research Problem? Selecting the Problem, Necessity of Defining the Problem.

Research Design: Meaning of Research Design, Need for Research Design, Features of a Good Design.

Sampling Design: Census and Sample Survey, Implications of a Sample Design, Steps in Sampling Design, Criteria of Selecting a Sampling Procedure.

PART – B

UNIT I

Technology of foods: Plant foods: Composition, structure, nutritive value, Post-harvest technology of -cereals, pulses, fruits & vegetables, milling technology, processed fruits and vegetable products. Animal foods: Milk- Composition, physico-chemical properties, processing of milk, types and milk products. Structure, composition, functional properties and processing of - egg, poultry, meat & marine foods.

UNIT II

Food spoilage, preservation and packaging: Microorganisms causing spoilage, spoilage of perishable and non- perishable foods, canned foods, fermented foods. Probiotics and prebiotics. Principles and methods of food preservation, additives and preservatives, Advanced food processing techniques. Flexible and rigid packaging materials and properties, smart packaging. Nutrition labeling, nutrition and health claims.

UNIT III

Dietetics and clinical Nutrition: Carbohydrates, lipids & proteins: Classification, structure & properties. Vitamins:-sources, occurrence, structure, functions in food systems, effect of processing. Food groups, RDA, Nutrient deficiency disorders, principles of diet therapy, diet in diabetes, obesity, hypertension, cancer. Functional foods, nutraceuticals, Antioxidant rich foods.

UNIT IV

Food Product development, safety and quality assurance: classification and scale-up, launching of a new product, test marketing and commercialization, plant layout. Scope and principles behind entrepreneurship development, entrepreneurial qualities. PFA, AGMARK, FPO, MPO, BIS, ISI, FSSAI, GMP, GHP, GAP, HACCP, CODEX Alimentarius, Risk assessment.

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Model Paper

PART-A

Section- I: Consists of FIFTY Objective type questions. 50 x 1 = 50 Marks

1. The statement of purpose in a research study should:
 - (a) Identify the design of the study
 - (b) Specify the type of people to be used in the study
 - (c) Identify the intent or objective of the study
 - (d) Describe the study

2. Which of the following would generally require the largest sample size?
 - (a) Cluster sampling
 - (b) Simple random sampling
 - (c) Systematic sampling
 - (d) Proportional stratified sampling

Section- II:

1. Sampling is.....
2. A hypothesis is..... 10 x 2 = 20 Marks

PART-B

Section- I: Consists of FIFTY Objective type questions. 50 x 1 = 50 Marks

1. Vitamin C is rich in: ()
 - a) Guava
 - b) Papaya
 - c) Watermelon
 - d) Grapes
2. Fat content of skimmed milk is: ()
 - a) 3.5
 - b) 2.5
 - c) 1.5
 - d) 0.5
3. Microorganism present in canned foods is: ()
 - a) *Lactobacillus cremori*
 - b) *Salmonella typhi*
 - c) *Aspergillus niger*
 - d) *Clostridium botulinum*

Section- II: Consists of TEN two mark questions. 10 x 2 = 20 Marks

1. Zinc, an essential trace element for most organisms, is present in the active site of the enzyme carboxypeptidase. The zinc most likely functions as a(n) _____
2. _____ bonds are created during the formation of the primary structure of a protein.
3. The retort process for canned food items is primarily aimed at the destruction of which potential public health concern _____

4. _____ reactions break apart polymers