

DEPARTMENT OF COMPUTER SCIENCE  
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)

**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**

**Data Structures:** Understanding of fundamental data structures- Lists, Stacks, Queues, Heaps, Trees, Graphs and their applications. Searching and Sorting Techniques.

**Operating Systems:** Functions, Types of OS, Operating System Structure, Services, System Boot, Process, CPU Scheduling, Process Synchronization, Deadlocks, Memory Management, File Access Methods, Unix Structure and Simple Commands.

**Object Oriented Programming:** Principles of Object Oriented Programming, C++ Tokens, Expressions, Control Structures, Functions in C++, Classes and Objects, Constructors and Destructors, Operator Overloading, Inheritance, Polymorphism, Exception Handling.

**Database Management System:** Introduction, Data Models, Schemas and Instance, Three-Schema Architecture and Data Independence, E-R Diagrams, Relational Model, Database Design, Integrity Constraints, Normal Forms, SQL Queries.

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

**PART-B**

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

1. The collection of information stored in a database at a particular moment is called:
  - (a) Schema
  - (b) Instance of the database
  - (c) Data domain
  - (d) Independence
  
2. The topology that requires a central controller or a hub is :
  - (a) Mesh
  - (b) Star
  - (c) Bus
  - (d) Ring

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

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