

## DISTRIBUTION OF PRACTICAL MARK

Experiments 30 Viva - Voice 10 Record 10 = Total 50

### OPTION (J). FUNDAMENTALS OF COMPUTER SCIENCE (THEORY & PRACTICAL)

(Questions will be set from each unit/section)

Max. : 50 Min : 20

| Units | Topics   |
|-------|--|
| I     | Principles of object oriented programming object oriented paradigm, Basic concept of object oriented programming, Benefits of OOPs, objected oriented language, application of OOPs. Introduction to C++ , Structure of Program. compiling & linking of C++ program.   |
| II    | Classes, objects, constructor and Destructor operator overloading and type conversion, Inheritance, single Inheritance, Multilevel Inheritance, pointers, virtual functions and polymorphism Templates, class Templates, Function Templates, New Ansi C++ Features object oriented systems development procedure oriented paradigm, Development Tools, object oriented paradigm. |
| III   | Introduction to data base systems, operational Data, Data independence, data base system architecture Relational approach to data structures Relation, Domain and attributes, keys, Extension, Relational Data manipulation, Relational Algebra and Relational calculus. SQL- basic features, Integrity constraints Database design - Normalization upto BCNF.                   |
| IV    | Data Structure - Data types - Classification of data structure Linked Lists, stalk & Queues, Operation of Lists Stalk & Queu, Algorithm for lists stack & Queue Trees properties of tree, Types :- Binary, Binary search, Tree, B-Tree Hashing Techniques. Sorting Techniques - Selection sorts Bubble sort, Quick sort, heap sort.  |
| V     | Operating system: Services: offered classification of O/S Functions of O/S Process Management, File Management Memory Management I/O Management concepting virtual memory, security threads protection intruders, virus trusted system: Introduction to Distributed systems.   |