

Faculty of Science**B.Sc (Computer Science) I-Year, CBCS-II Semester Backlog Examinations –January, 2021****PAPER: OBJECT ORIENTED PROGRAMMING WITH C++**

Time: 2 Hours

Max Marks: 80

I. Answer any **Four** of the following questions

(4x20=80 Marks)

1. What is the difference between function and virtual function? Explain function overloading with an example?
2. a)What is OOP? Explain its benefits and applications in detail?
b) What are user defined and derived data types and explain with an example program?
3. What is a Class? Explain member function, Inline function, nesting of member function with an example code?
4. Explain Constructors and Destructors in detail?
5. Discuss multiple, Hierarchical and Hybrid Inheritance?
6. What is polymorphism? Explain using an example program showing virtual and pure virtual function implementation?
7. What is Template? Explain Class Template with multiple parameters and overloading of template function?
8. Explain Exceptional Handling mechanism in C++ using an example program?

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PAPER: DATA STRUCTURES AND FILE PROCESSING

Time: 2 Hours

Max Marks: 80

I. Answer any **FOUR** of the following questions

(4x20=80 Marks)

1. a) Define Data Structure and Algorithm. List and Explain types of Data structures
With examples.
b) Explain Storage collection of objects with mixed size.
2. a) Convert infix expression $(A-B)*[C/(D+E)+F]$ into Postfix expression.
b) Discuss about Applications of stack and Multiple stacks.
3. a) Write the following algorithm for singly linked list.
Insert the item as a first node in the list and delete the node of given item
in the list.
b) Write about Doubly Linked list.
4. a) Explain Recursive functions with an example ?
b) Discuss about Priority Queue and Applications of queue?
5. Explain insertion of a node in Binary Tree and Binary tree Traversal with an example?
6. Explain AVL Tree operations with an example?
7. Describe Hash Function, Dictionary and Skiplist?
8. Explain different file organization methods in detail?
