

Code No: 153BK

**R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B.Tech II Year I Semester Examinations, March - 2021**

**OBJECT ORIENTED PROGRAMMING USING C++**

(Common to CSE, IT)

**Time: 3 hours**

**Max. Marks: 75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Explain briefly different paradigms for problem-solving with illustrations.
- b) Can you achieve polymorphism without inheritance? Justify your answer. [7+8]
- 2.a) Write a recursive function to sort an array of integers into ascending order using the following idea: Place the smallest element in the first position, then sort the rest of the array by a recursive call.
- b) Does C++ automatically check array indexes to see whether they are in bounds? Justify your answer.
- c) Discuss pointers to functions. [5+5+5]
- 3.a) With an example explain constant Member function.
- b) Explain the usage of the pointer.
- c) Describe friends to a class. [5+5+5]
- 4.a) Write a program to illustrate dynamic creation of objects.
- b) Explain constructor overloading concept with an example. [8+7]
- 5.a) Write a program to implement multilevel inheritance.
- b) What is a virtual base class? Why is it necessary? [7+8]
- 6.a) Explain the role of abstract classes in polymorphism.
- b) What is meant by pure virtual function? How is different from a virtual function. [8+7]
- 7.a) Discuss the advantages of Streams and describe the Stream class hierarchy.
- b) Explain error handling in File I/O. [8+7]
- 8.a) What are the benefits of exception handling?
- b) How to create a user defined exception in C++? Explain with a suitable program. [8+7]

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