Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 80384

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Fifth Semester

Electrical and Electronics Engineering

CS 2311/CS 59/10133 EE 604/10133 CS 304 — OBJECT ORIENTED
PROGRAMMING

(Common to Electronics and Instrumentation Engineering and Instrumentation and
Control Engineering)

(Regulations 2008/2010)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1.   What is object oriented programming?

2.   Define data abstraction.

3.   Give the use of scope resolution operator.

4.   What is meant by runtime polymorphism?

5.   What is a namespace?

6.   What is the difference between throw and throws?

7.   Is JVM's platform independent? Justify.

8.   How do we allocate an array dynamically in Java?

9.   State the uses of interfaces in Java.

10. Mention the purpose of three categories of exceptions in Java.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Define polymorphism. Describe the type of polymorphism with example. (8)

    (ii) Explain the order in which constructors are called when an object of a derived class is created. (8)

Or

    (b) Write a complete C++ program to do the following: (16)

    (i) 'Student' is a base class, having two data members : entryno and name; entryno is integer and name of 20 characters long. The value of entryno is 1 for Science student and 2 for Arts student, otherwise it is an error.

    (ii) 'Science' and 'Arts' are two derived classes, having respectively data items marks for Physics, Chemistry, Mathematics and marks for English, History, Economics.

    (iii) Read appropriate data from the screen for 3 science and 2 arts students.

    (iv) Display entryno, name, marks for science students first and then for arts students.

12. (a) (i) Create a class MAT of size m x n. Define all possible matrix operations for MAT type objects using operator overloading. (12)

    (ii) Explain the friend functions and its advantages and disadvantages with an example. (4)

Or

    (b) (i) Write a detailed note on multiple and multilevel inheritance with examples. (10)

    (ii) What is meant by virtual function? Explain with an example. (6)

13. (a) Write a program to find the factorial value of any number entered through the keyboard. Include any two exceptional handling in the program and explain how the exceptions are handled. (16)

Or

    (b) Write a program that merges lines alternately from two files and writes the results to new file. If one file has less number of lines than the other, the remaining lines from the larger file should be simply copied into the target file. (16)

80384

14. (a) (i) Explain about java features. (6)

        (ii) Discuss about Java command line arguments. (4)

        (iii) Write a Java program to find the sum of the following series.

$$1 - 2 + 3 - + ... + n$$ (6)

Or

(b) (i) Distinguish between

        (1) Abstract class and class.

        (2) Interface and class. (4)

        (ii) Discuss about benefits of abstract class. (3)

        (iii) Explain dynamic method dispatch with an example. (9)

15. (a) (i) Write a java program to implement multiple inheritance using interface. (8)

        (ii) What is multithreading? Explain with an example. (8)

Or

(b) (i) Write a java program to add 2 integers and raise exception when any other character except number (0 - 9) is given as input. (8)

        (ii) Write short notes on various I/O streams in java. (8)

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80384