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## Question Paper Code : X 60386

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020  
Fifth/Sixth 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. Define attribute.
2. What is compile time polymorphism in OOPS ?
3. What is data abstraction ?
4. Give an example to show the usage of `dynamic_cast` in C++.
5. What is the use of Try, Throw and Catch statements ?
6. Give any five functions used for file processing.
7. Why is java language called as 'robust' ?
8. How does Java make an executable file ?
9. What are exceptions ?
10. What is multithreading ?

PART – B

(5×16=80 Marks)

11. a) Explain the Object Oriented programming concepts.

(OR)

- b) Write a C++ program for the following :

Ramesh's basic salary is input through the keyboard. His dearness allowance is 40% of basic salary and house rent allowance is 20% of basic salary. Write a program to calculate his gross salary. Use constructors, Destructor and Member Functions.



12. a) i) Write a C++ program using operator overloading to add two time values in the format HH:MM:SS to the resulting time along with rounding off when 24 hours is reached. A time class is created and operator + is overloaded to add the two time class objects. **(10)**
- ii) Explain in detail about friend functions in C++ with example. **(6)**

(OR)

- b) i) What is multiple inheritance ? Discuss the syntax and rules of multiple inheritance in C++. How can you pass parameters to the constructors of base classes in multiple inheritance ? Explain with suitable example. **(8)**
- ii) What is the difference between a virtual function and a pure virtual function ? Give example of each. **(8)**

13. a) i) Explain IO streams used for file operation.
- ii) Write a C++ program to create a file with odd numbers and create another file with set-of even numbers and merge these two files and store it in another file. **(8+8)**

(OR)

- b) i) Write a C++ program to generate user defined exception whenever user inputs odd numbers.
- ii) Explain function templates with an example. **(9+7)**

14. a) i) Explain about various string operations in Java. **(8)**
- ii) Write a java program to find the maximum number of the given array. **(8)**

(OR)

- b) i) Explain about packages in Java. **(8)**
- ii) Write a program to convert an Integer array to String. **(8)**

15. a) Discuss the concept of interfaces and inner classes in detail. Provide examples wherever necessary. **(16)**

(OR)

- b) Explain the concept of threads in Java. Write a Java program with threads to solve producer consumer problem. **(16)**
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