

[This question paper contains 2 printed pages.]

Your Roll No. ....

3217

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MEE

Paper—EE.611

(Programming Languages and Operating System)

Time : 3 Hours

Maximum Marks : 100

(Write your Roll No. on the top immediately  
on receipt of this question paper.)

Attempt any five questions.

All questions carry equal marks.

1. (a) Explain the term pointer. Discuss the concept of array of pointers with the help of a suitable example. 10
- (b) What is a structure? How can it be passed during a function call? Draw similarity between a structure variable and a system defined variable with the help of proper examples. 10
2. (a) How are input and output streams handled in C++? Discuss your answer in the context of hybrid inheritance applicable in C++. 10
- (b) What is copy constructor? Can it be overloaded? Explain with the help of a suitable example. 10

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3. (a) How many types of inheritances are applicable in C++? Discuss them with the help of suitable C++ code snippets. 10
- (b) What is runtime polymorphism? How can it be implemented using pointer to an object? Discuss the utility of a keyword attached to the member function that effectively implements runtime polymorphism. 10
4. (a) What happens when a system is switched on to power? Explain this process in detail. Also give in brief the process-state transition diagram and its basic constructs. 10
- (b) How is pre-emptive priority scheduling implemented in windows? Explain by giving a suitable example with the Gantt chart. 10
5. What are cooperating processes? What do you mean by critical section of a cooperating process? Write four mechanisms to control the access of critical sections of these processes. Also explain, mutual exclusion, progress and bounded wait for cooperating processes. 20
6. (a) What is the difference between internal and external fragmentation? How is it handled in paging and segmentation, explain briefly? 10
- (b) Explain and implement Least Recently Used (L.R.U.) algorithm for page replacement policy.