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[4857]-1077

**S.E. (Computer) (Second Semester) EXAMINATION, 2015
OBJECT ORIENTED AND MULTICORE PROGRAMMING
(2012 PATTERN)**

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) Neat diagrams must be drawn wherever necessary.

(ii) Figures to the right indicate full marks.

(iii) Use of calculator is allowed.

(iv) Assume suitable data, if necessary.

1. (a) Explain the following terms with example : [8]

(i) Copy constructor

(ii) Manipulators

(iii) Static data members

(iv) This pointer.

(b) With suitable examples, demonstrate the benefits of Operator Overloading. [4]

Or

2. (a) Explain why and when do we use protected Instead of Private ? With suitable examples, explain different types of inheritance. [8]

(b) Explain run-time polymorphism with a suitable example. [4]

P.T.O.

3. (a) What are the core services of an OS ? Describe process state transition diagram. [8]
- (b) What do you mean by Unformatted Console I/O Functions ? What is the use of the following Unformatted Console I/O Functions ? [4]
- (i) Getch()
- (ii) Puchar()
- (iii) Get()
- (iv) Put()

Or

4. (a) What is C++ template ? Describe type template parameters and non-type template parameters. [8]
- (b) What is Process and Thread ? How mapping of multiple threads on multiple cores takes place ? [4]
5. (a) What is deadlock ? What are different conditions that must be true for deadlock to happen ? [9]
- (b) Differentiate between preemptive scheduling and time slicing. [4]

Or

6. (a) Explain the different attributes of the pthread_attr_t object which can be modified by the creator of the thread. [9]
- (b) Write a short note on thread interface classes. [4]

7. (a) With suitable terminologies explain the following terminologies : [8]
- (i) Task synchronization
 - (ii) Critical section
 - (iii) Semaphore
 - (iv) Message Passing.
- (b) What do you mean by Thread safety ? With reference to Thread safety, what do you mean by conditionally safe and Not thread safe code ? [5]

Or

8. (a) Explain Interprocess Communication (IPC) and explain any *two* ways of implementing IPC. [9]
- (b) Explain the use of read-write-locks to prevent race conditions and deadlocks. [4]