Total No. of Questions—8]　　　　　[Total No. of Printed Pages—3

Seat
No.

[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]

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*)   Putchar( )

          (*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]

<center>Or</center>

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]