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

[4757]-1076

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 side indicate full marks.

　　　　(*iii*)　Use of calculator is allowed.

　　　　(*iv*)　Assume suitable data if necessary.

1.　(*a*)　Explain the following terms with respect to object oriented
　　　　programming :　　　　　　　　　　　　　　　　　　[8]

　　　　(1)　Dynamic look-up

　　　　(2)　Delegation

　　　　(3)　Implicit and Explicit Function

　　　　(4)　Merits and demerits of friend function.

　　(*b*)　What are different formatting activities supported by Stream
　　　　manipulators ? Support with suitable examples.　　　　[4]

Or

2.　(*a*)　What is abstraction ? Why is it important ? Describe abstract
　　　　base class. Illustrate an example to explain it.　　　　[8]

(b) What do you mean by type conversion ? Explain the same with example. [4]

3. *(a)* What is the importance of Process control block ? Explain its structure. [4]

(b) Explain challenges in multicore software development. [4]

(c) What is overloading template ? Explain it with an example. [4]

Or

4. *(a)* Explain data-race and deadlocks in multicore programming. [8]

(b) Explain the exception handling mechanism in C++. [4]

5. *(a)* Explain the different attributes of the pthread_attr_t object which can be modified by the creator of the thread. [9]

(b) Explain the significance of hardware thread and software thread. [4]

Or

6. *(a)* Explain thread priorities and the different thread scheduling policies. [9]

(b) Compare process context and thread context. [4]

7. *(a)* Explain Interprocess Communication (IPC) and explain any *two* ways of implementing IPC. [8]

(b) Write a note on "Critical Section". [5]

Or

8. *(a)* Explain the use of semaphores and mutex to prevent race conditions and deadlocks. [8]

(b) Explain messages queues as the IPC mechanism. [5]