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Seat No.	
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**[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]

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- (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]