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

Seat No.	

[5252]-167

S.E. (Computer) (Second Semester) EXAMINATION, 2017

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 concepts related to Object Oriented Programming : [6]

(1) Array of objects

(2) Class as ADTs

(*b*) What are characteristics of friend function ? Write a code to overload ">>" operator using friend function. [6]

Or

2. (*a*) What is significance of : [6]

(1) Data encapsulation

(2) Data abstraction and Information Hiding with reference to Object Oriented Programming ?

P.T.O.

(*b*) Explain with suitable examples : [6]

(1) Function prototypes

(2) Default and constant arguments.

3. (*a*) Explain with suitable examples : [6]

(1) Virtual destructors

(2) Early and Late binding

(*b*) What is importance of : [6]

(1) Pure Virtual Functions

(2) Hybrid Inheritance ?

Or

4. (*a*) What are difference streams operators supported by C++ for Managing Console I/O Operations ? [6]

(*b*) What do you mean by Multicore and Multiprocessors Systems? What are challenges of software development with these systems ? [6]

5. (*a*) Explain the following : [8]

(1) Hardware thread

(2) Software thread

(3) Hybrid thread

(4) User level thread.

(*b*) Describe scheduling and managing policy of thread with respect to multithreading environment [5]

Or

6. (*a*) Explain method of thread creation and joining with suitable code. [8]

(*b*) What do you mean by context switch ? What are similarities and differences between thread and process ? [5]

7. (*a*) What do you mean by race conditions and deadlock ? Explain use of read-write-locks to prevent race conditions and deadlocks. [8]

(*b*) What are different thread strategy approaches that can be used while creating a multithreaded application ? [5]

Or

8. Write short notes on : [13]

(1) Message Queue

(2) POSIX Semaphore

(3) Relationship between co-operating tasks.