Registration No. :

Total number of printed pages – 2

B. Tech

PCCS 4304

Sixth Semester Back Examination – 2015

OPERATING SYSTEM

BRANCH (S) : AEIE, BIOMED, EEE, EIE, ELECTRICAL, IEE, MM, MME

QUESTION CODE : M 397

Full Marks – 70

Time : 3 Hours

Answer Question No. 1 which is compulsory and any five from the rest.
The figures in the right-hand margin indicate marks.

1. Answer the following questions :   2 ×10

    (a)   Define operating system. Mention its importance.

    (b)   How can you categorize system calls ?

    (c)   What is thread scheduling? Where can it be used ?

    (d)   Define monitor. Name any two operations associated with it.

    (e)   Define resource allocation graph with an example. Write its importance.

    (f)   Differentiate between internal fragmentation and external fragmentation.

    (g)   What is thrashing ?

    (h)   Write any two functions of virtual file system.

    (i)   Mention the differences between block-device and character-device.

    (j)   Define constant angular velocity. Where is it used ?

2. Differentiate between preemptive and nonpreemptive scheduling. Describe any
    two preemptive scheduling algorithms with suitable example.   10

P.T.O.

3. What do you mean by process synchronization ? Show the use of semaphore for synchronizing purpose. Mention the importance of binary semaphore.   10

4. (a) Draw and describe process state diagram.   5

   (b) Define readers-writers problem. Suggest and explain a method for solving this problem.   5

5. (a) Illustrate the important steps of Banker's algorithm by taking a suitable example.   5

   (b) Define paging. Explain how paging can be used as an efficient memory management scheme.   5

6. (a) Compare the different access method associated with file.   5

   (b) Briefly describe the different schemes for defining the logical structure of a directory.   5

7. (a) What do you mean by disk scheduling ? Explain the working of any two disk scheduling algorithms. Discuss their performance.   10

8. Write short notes any **two** of the following :   5×2

   (a) Operating system services

   (b) Demand paging

   (c) Disk management

   (d) LINUX system.