

Registration No. :

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Total number of printed pages – 2

B. Tech  
**PCCS 4304**

**Sixth Semester Back Examination – 2015**

**OPERATING SYSTEM**

**BRANCH : IT**

**QUESTION CODE : M 235**

**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 system process.
  - (b) What is a system call ?
  - (c) What is a trap ?
  - (d) Define Threads.
  - (e) What is Co-operative Process ?
  - (f) Define Multithreading.
  - (g) What is Overlays ?
  - (h) What is Hit ratio ?
  - (i) What is demand paging ?
  - (j) What are the File types ?
2. (a) Explain multiprocessor system. 5
- (b) Explain operating system structure in detail. 5

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3. Explain in detail about the critical section problem. 10
4. (a) Consider a logical address space of eight pages of 1024 words each mapped onto a physical memory of 32 frames : 5
- (i) How many bits are in the logical address ?
- (ii) How many bits are in the physical address ?
- (b) Compare the Global and Local Allocation. 5
5. Given memory partitions of 100 KB, 500 KB, 200 KB, 300 KB, and 600 KB( in order), how would each off the first-fit, best-fit, and worst-fit algorithms place processes of 212 KB, 417 KB, 112 KB, and 426 KB (in order) ? Which algorithm makes the most efficient use of memory ? 10
6. Consider the following page-reference string : 10
- 1, 2, 3, 4,,2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6
- How many page faults would occur for the following replacement algorithms, assuming two, three frames? Remember that all frames are initially empty, so your first unique pages will all cost one fault each.
- o LRU replacement
  - o FIFO replacement
  - o Optimal replacement
7. Explain in detail about file system structure and implementation. 10
8. Define disk scheduling. Explain in detail about any three disc scheduling algorithm. 10

