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**Sixth Semester B.E. Degree Examination, Dec.2016/Jan.2017**  
**Operating Systems**

Time: 3 hrs.

Max. Marks:100

**Note: Answer any FIVE full questions, selecting  
atleast TWO questions from each part.**

**PART – A**

- 1 a. Mention the different classes of operating systems. What is the prime concern addressed in each class? (04 Marks)
- b. Explain the functions of multiprogramming supervisor in detail. Also give the architectural support. (10 Marks)
- c. Differentiate between Hard Real time Systems vs. Soft Real time Systems. (06 Marks)
- 2 a. List the features operating system fails to handle when installed in a different machine. (02 Marks)
- b. Explain (i) System generation (ii) Configuration tools (iii) Dynamic configuration of supervisor. (12 Marks)
- c. Explain monolithic structure of O.S. Give its drawbacks. (06 Marks)
- 3 a. Explain four kinds of process interaction. (04 Marks)
- b. What are Event Control Blocks (ECBs)? Explain the fields contained in ECBs. Also explain event handling actions of kernel with diagram. (08 Marks)
- c. What is a process? Explain with a neat diagram process states and state transitions in Unix. (08 Marks)
- 4 a. Give the difference between static and dynamic memory allocation. (04 Marks)
- b. Explain with diagram merging free areas using bounding tags. (08 Marks)
- c. Explain slab allocator used in solaris as one of kernel memory allocator. (08 Marks)

**PART – B**

- 5 a. What is demand paging? With a diagram explain the following with respect to demand paging: (i) Page faults (ii) Page in and page out operations (iii) Page replacement. (12 Marks)
- b. Discuss memory mapping of a file by a process with diagram. Give its advantages. (08 Marks)
- 6 a. Discuss the various attributes of a file. (04 Marks)
- b. List the various operations carried out on directories. Explain mounting of a file system. (08 Marks)
- c. Describe file system actions at open, close and at file operations. (08 Marks)
- 7 a. With a neat schematic diagram, explain the concept of scheduling. (05 Marks)
- b. Discuss the following non-preemptive scheduling policies:  
(i) FCFS scheduling (ii) Shortest request next (SRN) (iii) Highest Response ratio next (15 Marks)
- 8 a. Explain Interprocess Message Control Block (IMCB). (04 Marks)
- b. Write a note on mailboxes. Give the advantages of mailboxes. (07 Marks)
- c. Explain the three interprocess communication features supported by unix. (09 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.