



C09-IT-402

**3496**

**BOARD DIPLOMA EXAMINATION, (C-09)  
OCT/NOV—2014  
DIT—FOURTH SEMESTER EXAMINATION  
OPERATING SYSTEMS**

Time : 3 hours ]

[ Total Marks : 80

---

**PART—A**

3×10=30

**Instructions** : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. What is the purpose of system calls?
2. List the types of operating systems.
3. What does the short-term scheduler do?
4. Consider a system consisting of four resources of the same type that are shared by three processes, each of which needs at most two resources. Show that the system is deadlock-free.
5. What is SJF?
6. What is meant by shared memory in interprocess communication?
7. What is the page-fault frequency strategy?

- \* 8. Ideally, what criteria should we use to replace pages?
- 9. Write how the linked method allocates space in disks.
- 10. How can we protect files on a single-user system?

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

- 11. Write about multiprocessor systems.
- 12. Explain the process creation and termination.
- 13. Explain the deadlock detection.
- 14. (a) Write about the process state diagram.  
(b) Write about the process control block.
- 15. (a) Write about the swapping.  
(b) Write about the single-partition allocation.
- 16. Write about the virtual memory techniques.
- \* 17. Explain the advantages and disadvantages of the free disk space management approaches.
- 18. What are the file operations? Explain them.

\*\*\*