

B.E. Sixth Semester (Computer Sci. & Engg., Computer Engg.) (CGS)
10332 : Operating Systems : 6 KS 01 / 6 KE 01

P. Pages : 2

Time : Three Hours



AU - 2781

Max. Marks : 80

- Notes :
1. Answer **three** question from Section A and **three** question from Section B.
 2. Due credit will be given to neatness and adequate dimensions.
 3. Assume suitable data wherever necessary.
 4. Illustrate your answer necessary with the help of neat sketches.
 5. Use of pen Blue/Black ink/refill only for writing the answer book.

1. a) Describe in detail the eight system components of an OS. 6
- b) What is meant by virtual machines in the context of operating system. 7

OR

2. a) What is a thread? Explain the user level and kernel level threads in brief and the action taken by each of them to context switch between themselves. 7
- b) Explain three main reasons for OS evaluation. 6
3. a) List and describe the five scheduling criteria used in evaluating various scheduling policies. 7
- b) What is meant by process priority? What are different types of priorities? What role does priority play in a process scheduling? 7

OR

4. a) What is meant by preemptive scheduling? How does it affect the system performance vis-a-vis non-preemptive scheduling? 7
- b) What is meant by Race condition? Why do race condition occur? Give an algorithm to avoid it between two processes. 7
5. a) "We can provide memory protection by using a relocation register and with a limit register". Illustrate this with the help of diagram. 6
- b) Explain all strategies used to solve dynamic storage allocation problem. 7

OR

6. a) Explain paging model of logical and physical memory with the help of diagram. 6
- b) Describe paging using Translation look-aside buffer in detail. 7
7. a) Compare and describe various methods of directory implementation. 7

- b) What are the different protection approaches to the file? Explain in detail. 7

OR

8. a) Explain file system implementation with the help of file control block. 7
b) Explain file system mounting and file sharing in detail. 7
9. a) Describe Spooling and Device Reservation. 6
b) Explain Transforming I/O to Hardware operations with the help of life cycle of an I/O request. 7

OR

10. a) Consider a disk having 0 to 195 cylinders and the head is at 55, a disk queue with requests for I/O to blocks on cylinders is 98, 183, 37, 122, 14, 124, 65, 67. Calculate total head movement to serve all I/O request using
i) C-look ii) C-scan. 7
b) Explain swap-space management with the help of BSD text-segment swap map. 6
11. a) What is buffer cache? Explain its structure in detail. 6
b) How memory management is done in Linux OS? 7

OR

12. a) Describe the structure of buffer POOL. 6
b) Explain in the context of Linux OS 7
i) Driver Registration.
ii) Conflict Resolution.
