

Code No: 55031

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, November - 2015

OPERATING SYSTEMS

(Common to CSE, IT)

Time: 3 hours

Max. Marks: 75

Answer any five questions
All questions carry equal marks

- 1.a) Define Operating system. What are the goals of operating system?
- b) Write briefly about operating system structure. [8+7]
- 2.a) What are the criteria for CPU scheduling algorithms? Briefly explain.
- b) Calculate average turnaround time and average waiting time for the following problem by applying preemptive shortest job first algorithm [7+8]

PID	BURST TIME	ARRIVAL TIME
P1	2	1
P2	5	0
P3	2	2
P4	6	3

- 3.a) What is critical section problem? Give semaphore solution to critical section problem.
- b) What is race-condition? Give an example for it. [8+7]
- 4.a) What is external fragmentation? In which memory management technique it occurs? Explain the solution for it.
- b) Explain how memory management is handled in UNIX. [8+7]
- 5.a) What is Dead lock? What are the necessary conditions for dead lock to occur?
- b) How resource allocation graphs are useful in describing deadlock situation? Explain. [6+9]
- 6.a) Define File. What are access methods?
- b) Explain different methods for free space management. [7+8]
- 7.a) Give the overview of Mass-storage structure.
- b) Write about kernel I/O subsystem [8+7]
- 8.a) What is access matrix? How access matrix is used in protection?
- b) What is cryptography? How it is used as security tool? [8+7]