

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER-IV (New) EXAMINATION – WINTER 2015

Subject Code: 2140702

Date: 01/01/2016

Subject Name: Operating System

Time: 2:30pm to 5:00pm

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1 (a)** Explain different types of OS and also Explain different types of tasks done by OS. **07**
- (b)** Define and explain following terms: **07**
(i) Authentication (ii) Mutual Exclusion (iii) Monitor (iv) Segmentation
- Q.2 (a)** Define a process. Explain the process state transition with a neat diagram. **07**
- (b)** What is PCB? Discuss its major fields. **07**
- OR**
- (b)** Explain the classical thread model with its implementation strategies. **07**
- Q.3 (a)** Explain Context Switching. Discuss performance evaluation of FCFS (First Come First Serve) & RR (Round Robin) scheduling. **07**
- (b)** Explain the IPC Problem known as Dining Philosopher Problem. **07**
- OR**
- Q.3 (a)** Explain the use of Banker's Algorithm for multiple resources for Deadlock Avoidance with illustration. **07**
- (b)** Explain IPC Problem – Readers & Writers Problem. **07**
- Q.4 (a)** Explain the following UNIX commands **07**
(i) grep (ii) cut (iii) chmod (iv) finger
- (b)** Explain the following allocation algorithms: 1) First-fit 2) Best-fit 3) Worst-fit **07**
- OR**
- Q.4 (a)** Write short note: RAID levels. **07**
- (b)** Explain SSTF and LOOK disk scheduling algorithms. **07**
- Q.5 (a)** Explain any two File Allocation Methods from the following: (i) Contiguous Allocation (ii) Linked Allocation (iii) Indexed Allocation **07**
- (b)** Explain Swapping in Detail. **07**
- OR**
- Q.5 (a)** Explain the Trojan Horse and Trap doors program threats. **07**
- (b)** Explain UMA and NUMA multiprocessors. **07**
