

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA - SEMESTER– III • EXAMINATION – WINTER 2017

Subject Code: 2630004**Date:02-01-2018****Subject Name: Operating Systems****Time:10:30 am to 1:00 pm****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) Define Process. List and explain the reasons for process creation and termination. **07**
 (b) Explain the five state process model and the various queues associated. **07**
- Q.2** (a) Define interrupt and interrupt handling. Explain the instruction cycle with interrupts. **07**
 (b) Explain the producer/consumer problem with reference to concurrent processing. **07**
- OR**
- (b) Define deadlock with example. Explain deadlock prevention and detection techniques. **07**
- Q.3** (a) What is dynamic partitioning? Explain first-fit, best-fit and next-fit placement algorithms with examples. **07**
 (b) What is real-time scheduling? Describe the characteristics of real-time operating systems. **07**
- OR**
- Q.3** (a) What is segmentation? How it differs from paging? Explain the address translation in both the cases. **07**
 (b) What is processor scheduling? Explain round-robin scheduling policy with example. **07**
- Q.4** (a) What is disc scheduling? Describe different disc scheduling policies in detail. **07**
 (b) Write short notes on **07**
 (1) DMA
 (2) File system security
- OR**
- Q.4** (a) What is meant by secondary storage management? Discuss different File allocation methods. **07**
 (b) Write short notes on **07**
 (1) Double buffering
 (2) File system Architecture
- Q.5** (a) What is client/server architecture? List its applications and discuss different classes of client/server architecture. **07**
 (b) List and explain I/O techniques in detail. **07**
- OR**
- Q.5** (a) Define cluster. Explain clustering methods with its advantages and disadvantages. **07**
 (b) Explain different RAID levels in detail. **07**
