

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA – SEMESTER I - EXAMINATION – WINTER-2021

Subject Code: 619406**Date: 16/03/2022****Subject Name: Basic Computer Concepts****Time: 10:30 AM to 01:00 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)** What is Logic Gate? Explain following Gates with its purpose, Truth Table and Graphical Symbol. a. AND b. OR c. NOT d. NAND e. NOR f. XOR **07**
- Q.1 (b)** What are the four main functions of a computer? **07**
- Q.2 (a)** Explain and draw hierarchical view/top-level view of the internal structure of a traditional single-processor computer. **07**
- Q.2 (b)** Discuss about Multicore Computer Structure with diagram. **07**
- OR**
- Q.2 (b)** List and explain classes of Interrupts. 7. List and briefly define two approaches to dealing with multiple interrupts **07**
- Q.3 (a)** Briefly discuss about the Top-Level View of Computer Components with diagram **07**
- Q.3 (b)** What is the instruction cycle? Explain with a diagram. **07**
- OR**
- Q.3 (a)** List and briefly define the possible states that define an instruction execution with and without interrupt. (Also draw state diagram) **07**
- Q.3 (b)** List and explain classes of Interrupts. **07**
- Q.4 (a)** Write a short note on Internal Structure of CPU with diagram **07**
- Q.4 (b)** Discuss about Time Sharing Systems. 11. List and briefly define the major types of OS scheduling. **07**
- OR**
- Q.4 (a)** Discuss about DMA Block Diagram. What is fly-by DMA controller? **07**
- Q.4 (b)** Justify the statement: "Operating System as Resource Manager" **07**
- Q.5 (a)** How are data read from and written onto a magnetic disk? **07**
- Q.5 (b)** What are the advantages of SSDs over HDDs? **07**
- OR**
- Q.5 (a)** Define the terms seek time, rotational delay, access time, and transfer time. **07**
- Q.5 (b)** Briefly define the seven RAID levels. **07**
