

Code No: 155AP

**R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year I Semester Examinations, February - 2022**

**COMPUTER ORGANIZATION AND OPERATING SYSTEMS**

**(Electronics and Communication Engineering)**

**Time: 3 Hours**

**Max. Marks: 75**

**Answer any five questions  
All questions carry equal marks**

---

- 1.a) Illustrate the diagram for connection between the processor and the memory and explain basic operational concepts of computer.
- b) Obtain the 9's and 10's complement of the following six digit decimal numbers: 123901, 090567. [7+8]
- 2.a) What is an Addressing mode? List and explain the various addressing modes with an example.
- b) Explain the arithmetic micro operations. [9+6]
3. With the help of a neat block diagram, explain the decision-making capabilities in the Control unit. [15]
- 4.a) Explain the characteristics of memory system.
- b) Explain about the Address sequencing.
- c) Give a brief note on RAID. [5+5+5]
- 5.a) Using block diagram, explain the working of DMA Controller.
- b) When a device interrupt occurs, how does the processor determine which device issued the Interrupt? Explain. [7+8]
6. What is the basic advantage of using interrupt-initiated data transfer over transfer under Programmed control without an interrupt? Explain interrupt-initiated I/O in detail. [15]
- 7.a) Differentiate between internal and external fragmentation. Which one occurs in paging Scheme?
- b) What is a system call? Explain how a user application invoking the open () system call is handled. [8+7]
- 8.a) Explain briefly about Acyclic-Graph Directories structure with diagram.
- b) Explain why logging metadata updates ensures recovery of a file system after a file-System crash. [7+8]

---ooOoo---