

Code No: 155AP

**R18**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**

**B. Tech III Year I Semester Examinations, March - 2021**

**COMPUTER ORGANIZATION AND OPERATING SYSTEMS**

**(Electronics and Communication Engineering)**

**Time: 3 Hours**

**Max. Marks: 75**

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

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- 1.a) Explain how the floating-point numbers are represented and used in digital arithmetic operations. Give an example.
- b) List and explain the different types of addressing modes in detail. [5+10]
- 2.a) With a neat block diagram, explain in detail the microprogrammed control unit and explain its operations.
- b) Write about Address Sequencing and explain the selection of addresses for control memory. [8+7]
- 3.a) A DMA module is transferring the characters to memory using cycle stealing, from a device transmitting at 9600 bps. The processor is fetching instructions at the rate of 1MIPS. By how much will the processor be slowed down due to DMA activity?
- b) List and explain the Peripheral Components in detail. [7+8]
- 4.a) Discuss the computer operating systems functions, protection and security.
- b) What is meant by Swapping? Explain the Contiguous Memory Allocation. [8+7]
- 5.a) Explain why logging metadata updates ensures recovery of a file system after a file system crash.
- b) Describe the allocation methods and free-space management. [8+7]
- 6.a) Explain the Register Transfer Bus and Memory Transfers.
- b) Make a comparison between the hardwired control and microprogrammed control. Is it possible to have a hardwired control associated with a control memory? Explain. [7+8]
- 7.a) What is Demand paging? Explain with an example. How to transfer a paged memory to contiguous disk space?
- b) Differentiate the features of UNIX OS and windows OS. [7+8]
8. Explain the following:
  - a) USB
  - b) IEEE 1394
  - c) FIFO Page-Replacement Algorithms[5+5+5]

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