

R15

Code No: 125EN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January/February - 2023

COMPUTER ORGANIZATION AND OPERATING SYSTEMS

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

- 1.a) Draw the functional block diagram of a computer system. [2]
- b) What is Instruction cycle? Explain. [3]
- c) Compare and contrast between Hardwired Control and Micro Programmed Control. [2]
- d) Discuss in brief about RAID [3]
- e) Write short notes on the IOP. [2]
- f) Differentiate between Isolated I/O and Memory Mapped I/O. [3]
- g) What is thrashing? How it is eliminated? [2]
- h) Write down the differences between paging and segmentation. [3]
- i) List out the attributes of a File. [2]
- j) Describe about FAT. [3]

PART - B

(50 Marks)

2. What is the need of addressing modes? Explain different types of addressing modes. [10]

OR

- 3.a) With a neat sketch, explain about Arithmetic Logic Shift Unit. [5]
- b) With an example, explain different types of Instruction formats. [5]

- 4.a) Explain the use of Micro Program sequencer for control memory. [5]
- b) Describe in detail about block diagram of Micro Programmed Control Unit. [5]

OR

- 5.a) Explain any two different types of mapping functions in Cache Memory. [5]
- b) Write short note on the following: [5]
 - i) RAM
 - ii) ROM

- 6.a) Discuss in detail about Input-Output Interface unit. [5]
- b) Enumerate the Strobe Control method of Asynchronous Data Transfer. [5]

OR

7. With a neat sketch, explain the working of Direct Memory Access. [10]

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8.a) What is a System call? Explain different types of system calls for the basic Operating System functionalities.

b) Discuss in detail about Structure of an Operating System.

[5+5]

OR

QA

9.a) Write about deadlock avoidance algorithm in detail.

b) With an example, explain FIFO Page Replacement Algorithm.

[5+5]

10.a) Discuss in detail about different access methods of a File.

b) Explain the two level directories Structure of a File.

[5+5]

OR

11. Explain in detail about different types of file allocation methods.

[10]

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