

Code No: 154CJ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech II Year II Semester Examinations, April/May - 2023****COMPUTER ORGANIZATION AND OPERATING SYSTEMS****(Electronics and Computer 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) Write the structure of the Bus and explain. [2]
- b) Differentiate between Arithmetic Micro Operations and Logic Micro Operations. [3]
- c) Define Cache Memory and explain its functionality. [2]
- d) Write a note on PROM. [3]
- e) What is an IO Processor? [2]
- f) Write the differences between an Isolated I/O and Memory-Mapped I/O. [3]
- g) Differentiate between Distributed System and a Real-Time System. [2]
- h) What is the purpose of paging the page tables? Explain. [3]
- i) List any four file operations. [2]
- j) What are the objectives of File management System? [3]

PART – B**(50 Marks)**

- 2.a) Describe about Shift Micro Operations.
- b) What is an Addressing mode? List and explain the various addressing modes with examples. [5+5]

OR

- 3.a) What is the functionality of Arithmetic Logic Shift Unit? Explain.
- b) Give an overview of Register Transfer Language. [5+5]

- 4.a) What is the difference between hardwired control and a micro programmed control? Explain.
- b) With a neat block diagram, explain in detail about micro programmed control unit and explain its operations. [5+5]

OR

- 5.a) What is Virtual Memory? Explain in detail.
- b) Give an overview of RAID Technology. [5+5]

- 6.a) What is interrupt? Discuss about interrupt priorities.
- b) Discuss about different modes of Data Transfer. [5+5]

OR

- 7.a) With the help of a block diagram, explain the working of DMA Controller.
- b) Explain about Serial Communication RS 232 Protocol. [5+5]

- 8.a) Compare and contrast various page replacement algorithms.
b) What is System Call? List and explain different categories of system calls. [5+5]

OR

- 9.a) Discuss Characteristics of deadlock. How to avoid deadlock? Illustrate with an example.
b) Explain the Contiguous Memory Allocation techniques. [5+5]

- 10.a) Write short notes on file sharing and file protection.
b) What are the different file allocation methods? Discuss. [5+5]

OR

11. Explain the following terms with neat diagrams and examples:
a) Two level directory structure
b) DAG structure. [5+5]

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Used papers 2023