R18

Code No: 155AP

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, January - 2025

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)	Discuss the types of computers.	[2]
b)	Explain the about Instruction Cycle.	[3]
c)	Write about Memory Hierarchy.	[2]
d)	Difference between RAM and ROM.	[3]
e)	List out the Peripheral Devices.	[2]
f)	Explain the Input-Output Interface.	[3]
g)	Draw the process state diagram.	[2]
h)	Differentiate the features of UNIX OS and windows OS.	[3]
i)	Discuss the various file operations.	[2]
j)	List the various file attributes.	[3]

PART – B

(50 Marks)

2.a) Explain the functional organization of a digital computer and explain the function of each element of a computer.
b) What is floating-point representation? Explain the IEEE standard for floating-point representation with examples. [5+5]

OR

3.a) Discuss the DATA Transfer and Manipulation operations.
b) Explain the logic micro operations and shift micro operations in Register Transfer Language. [5+5]

4. With the help of a neat block diagram, explain the decision-making capabilities in the Control unit. [10]

OR

5.a) Elaborate the RAID concept with the functions of each level.
b) Explain the need of cache memory. [5+5]

6.a) Using block diagram, explain the working of DMA Controller.
b) Discuss in detail about Input-Output process. [5+5]

OR

7.a) Discuss in detail about asynchronous serial transfer.
b) Explain the RS232, USB, IEEE 1394. [5+5]

8.a) Discuss the Operating System Services and Systems Calls.

b) Define deadlock. What are the four conditions necessary for deadlock? How it can be prevented. [5+5]

OR

9. Explain the basic Scheme of page replacement and about the various page replacement strategies with examples. [10]

10.a) Explain about Directory Structure in OS.

b) Explain the three allocation methods in file system implementation. [5+5]

OR

11. What is mounting of a file system? How does mounting take place in the different operating systems? Explain with an example. [10]

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