Code No: 154CJ **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech II Year II Semester Examinations, September/October - 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)	Define Reduces Instruction Set Computer (RISC).	[2]
b)	List and briefly explain functional units of computer.	[3]
c)	What is the purpose of control memory?	[2]
d)	What is cache memory? What is the principle of cache memory?	[3]
e)	Define serial communication.	[2]
f)	Define interrupt. List types of interrupt.	[3]
g)	Define page fault. What are the steps to perform in case of page fault?	[2]
h)	What is thrashing?	[3]
i)	List out the file types.	[2]
j)	Differentiate sequential access and direct access.	[3]

PART – B

(50 Marks)

2.a)	Write a short notes on multi processors and multi computers.	
b)	List and explain logic micro operations.	[5+5]
	OR	
3.a)	Explain shift micro operations.	
b)	Discuss about instruction cycle.	[5+5]
4.a)	Differentiate hardwired and micro programmed implementation of control memory.	
b)	Write a short note on semiconductor RAM memory.	[5+5]
	OR	
5.a)	List and explain about secondary memory devices.	
b)	What is micro program? Give an example for it.	[5+5]
6.a)	Explain about direct memory access feature of computer system.	
b)	Explain about asynchronous data transfer modes.	[5+5]
	OR	
7.a)	Explain about IEEE 1394 serial communication protocol.	
b)	Write about input – output processor.	[5+5]

8.a) Explain the concept of deadlock prevention.
b) Discuss about memory management in UNIX operating system. [5+5]

OR

9.a) Explain Banker's algorithm for deadlock avoidance.
b) Consider the following address sequences recorded for a particular process: 4,7,6,1,7,6,1,2,7,2. Apply LRU replacement, optimal replacement to find the number of page faults and assume three frames. [5+5]

10.a) List and explain file attributes.
b) Explain about indexed file allocation method. Is it better than linked allocation and contiguous allocation methods? Justify your answer. [5+5]

OR

11.a) Explain about directory structures.
b) Discuss about different methods to handle free space management. [5+5]

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