Code No: 115EN

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, May - 2018
COMPUTER ORGANIZATION AND OPERATING SYSTEMS
(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	Classify the Arithmetic Micro operations.	[2]
b)	Explain the role of program counter in Instruction execution.	[3]
c)	Draw and Explain the Microinstruction Format.	[2]
d)	What is virtual memory?	[3]
e)	Define synchronous bus with read and write cycles.	[2]
f)	Differentiate synchronous and asynchronous communication.	[3]
g)	Define logical address and physical address.	[2]
h)	Explain the three main purposes of an operating system.	[3]
i)	Define Free-Space list.	[2]
j)	Discuss the inadequacies of simple file system.	[3]

PART - B

(50 Marks)

2.a) Calculate the arithmetic operations (+70) + (+80) and (-70) + (-80) with binary numbers in signed 2's complement representation. Use eight bits to accommodate each number together with its sign. Show that overflow Occurs in both cases.

b) Explain different Shift-Micro-operations with examples. [5+5]

OR

3.a) Explain Binary Adder- Sub tractor with Diagram in detail.

b) Explain in detail about RISC architecture. [5+5]

4. Explain the Organization of Micro programmed control unit in detail. [10]

OR

5.a) Explain organization of a 1 K × 1 memory chip with neat diagram.

b) Explain Associative mapping technique with its advantages and disadvantages. [5+5]

6. Discuss the following:
a) Parallel priority Interrupt.
b) Priority Encoder. [5+5]

OR

7.a) Discuss Handshaking method of Asynchronous data transfer technique.

b) Discuss USB Serial communication protocol in detail. [5+5]

8. Explain the Bankers algorithm for deadlock avoidance with Example. [10]

OR

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

10.a) Explain in detail about File sharing and protection.
   b) Discuss about Tree structured directories with diagram. [5+5]

OR

11.a) Explain File system mounting in detail.
   b) Explain about Acyclic-Graph Directories structure with diagram. [5+5]

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