R13

Code No: 115EN

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech III Year I Semester Examinations, February/March - 2016
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) List the types of computers. [2]
b) Give the format of an Instruction and explain the significance of each field. [3]
c) What is virtual memory? [2]
d) Differentiate between hardwired control unit and microprogrammed control unit. [3]
e) What is the difference between synchronous and asynchronous data transfer? [2]
f) Define interrupt? List the causes of interrupts. [3]
g) What is a System call? Give example. [2]
h) What are the necessary conditions for deadlock to occur? [3]
i) What is a Directory? List its attributes. [2]
j) How can you justify the free space management give better output? [3]

Part-B

(50 Marks)

2.a) Give a note on Floating point Representation.
b) Explain about the Bus structures. [5+5]

OR

3. Explain various addressing modes with examples. [10]

4.a) Describe the principle based on which cache memory works.
b) Consider a cache consisting of 256 blocks of 8 words each, for a total of 2048 words, and assume that the main memory is addressable by a 16-bit address. The main memory has 64K words which are divided into 8192 blocks of 8 words each. Find the number of bits in Tag, Block and word field of the main memory address for direct mapping scheme. [5+5]

OR

5. Give a detailed note on design of micro controlled unit. [10]

6. Describe in brief the different modes by which data transfer can take place between a computer unit and its I/O devices. [10]

OR

7. Write short notes on the following:
a) IEEE 1394
b) Serial Communication. [5+5]

8.a) Draw and explain the role of TLB in memory management.
b) Differentiate between a page and a frame. [5+5]

OR

9.a) List and explain the different types of operating systems.
b) Briefly explain about Operating systems Generation. [5+5]

10.a) Explain file access methods in detail.
b) Write notes on File mounting. [5+5]

OR

11.a) Explain in detail about File system implementation.
b) What are the advantages and disadvantages of linked allocation? [5+5]

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