

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. [5+5]
 - 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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