



Reg. No. : .....

Name : .....

**Third Semester B.Tech. Degree Examination, October 2016  
(2008 Scheme)  
08.306 : COMPUTER ORGANIZATION (RF)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carries **4** marks.

1. Differentiate synchronous data transfer with asynchronous data transfer.
2. How does execution time differ from processor time ?
3. What is byte addressability ?
4. What are the functions of I/O interface ?
5. What is the difference between subroutine and interrupt service routines ?
6. Why do we need DMA ?
7. What will be the width of address and data buses for a 512 K × 8 memory chip ?
8. What is virtual memory ? How is it implemented ?
9. What is memory interleaving and give its advantages ?
10. Define average memory access time for a computer system with two levels of caches. **(10×4=40 Marks)**



**PART – B**

Answer **any one** question from **each** Module. **Each** question carries **20** marks.

**Module – I**

11. a) Describe different types of addressing modes in detail. **12**
- b) What is stack ? Illustrate the use of stack in subroutine processing with suitable diagram. **8**

OR

P.T.O.



12. a) Explain basic instruction types and instruction sequencing. 10  
b) Discuss in detail the basic input and output operations. 10

**Module – II**

13. a) Explain single bus organization in detail. 10  
b) What is the importance of an interface ? Compare the features of SCSI and PCI interfaces. 10

OR

14. a) Explain the multiple bus organization of the data path. 10  
b) Discuss the DMA driven data transfer technique. 10

**Module – III**

15. a) Discuss the various mapping techniques used in cache memories. 10  
b) A computer system has a main memory consisting of 16 M-words. It also has a 32 K word cache organized in the block-set-associative manner, with 4 blocks per set and 128 words per block. Calculate the number of bits in each of the TAG, SET and WORD fields of the main memory address format. How will the main memory address look like for a fully associative mapped cache ? 10

OR

16. Explain the concept of virtual memory with any one virtual memory management technique. 20

**(3×20=60 Marks)**