Reg. No. : | | | | | | | | | | |

Question Paper Code: 31083

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2015.

Third Semester

Information Technology

01UIT303 – COMPUTER ORGANIZATION

(Regulation 2013)

Duration: Three hours Maximum: 100 Marks

Answer ALL Questions.

PART A - (10 x 2 = 20 Marks)

1. Differentiate between computer architecture and computer organization.
2. List down the various types of performance metrics.
3. What is *EBCDIC*?
4. Compare Nano programming with micro instruction?
5. Define Access time.
6. What are the classes of interrupts?
7. Why does increasing the capacity of cache tend to increase its hit rate?
8. What do you mean by interleaved memory?
9. In a cache with 64-byte cache lines, how many bits are used to determine the address?
10. What do you mean by DMA channel?

PART - B (5 x 16 = 80 Marks)

11. (a) Compare RISC and CISC machine architectures. (16)

Or

(b) Explain the various addressing modes in detail. (16)

12. (a) (i) Differentiate between arithmetic shift and logical shift. (8)

(ii) With suitable example illustrate the need for fast adder. (8)

Or

(b) (i) Give the general rules for subtraction and solve *1011-0111*. (8)

(ii) Explain one's complement and two's complement representation with appropriate examples. (8)

13. (a) Write short note on Hazards of pipelining. (16)

Or

(b) What are reasons of pipeline conflicts in pipelined processor? How are they resolved? (16)

14. (a) (i) Differentiate among direct mapping and associate mapping. (8)

(ii) If a cache has a capacity of 16*KB* and a line length of 128 bytes, how many sets does the cache have if it is 2-way, 4-way or 8-way set associative? Explain. (8)

Or

(b) (i) What are the advantages of virtual memory? (8)

(ii) If a cache memory has a hit rate of 75 percent, memory request take 12*ns* to complete if they hit in the cache and memory request that miss in the cache take 100*ns* to complete, what is the average access time of cache? (8)

15. (a) (i) What is meant by DMA? Explain its functions. (8)

(ii) Write about DMA transfer. (8)

Or

(b) (i) Write in brief about operation of USB. (8)

(ii) Compare the features of *i3*, *i5* and *i7* Intel core processors. (8)
