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BICS-013

B.Tech. – VIEP – COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

00733

June, 2018

BICS-013 : COMPUTER ORGANISATIONS

Time : 3 hours *Maximum Marks : 70*

Note : *Attempt any **seven** questions. All questions carry equal marks.*

1. (a) Explain the IEEE standards for representation of floating point number. *5*

(b) What is a bus ? Explain single bus structure in an architecture. *5*

2. Explain how serial communication is ensured in a computer system. Draw the block diagram and explain a serial communication interface used in a typical computer system. *10*

3. (a) What is an addressing mode ? Explain register, indirect, index addressing modes with an example of each. 5

(b) What are the assembler directives ? Explain any two such directives. 5

4. Why is DMA important in a computer system ? Explain with the help of a block diagram the process of DMA transfer in a computer system. 10

5. (a) What are microinstructions ? Discuss, using a suitable example and diagram, the use of prefetching microinstructions. 5

(b) Illustrate memory read and write operations with the help of a suitable diagram. 5

6. Discuss the different mapping techniques used in cache memories and their relative merits and demerits. 10

7. What do you mean by virtual memory ? Discuss how paging helps in implementing virtual memory. 10

8. (a) How is memory hierarchy useful in computer systems ? Draw and explain the working of a RAM cell. 5

(b) Draw the logic diagram of a look ahead carry adder. How is it useful over conventional adders ? 5

9. (a) What is the use of stack in a computer system ? Discuss various operations related to it. *5*

(b) Draw the flow chart representing the working of Booth's algorithm. *5*

10. Write short notes on any ***two*** of the following : *2×5=10*

(a) Interrupt

(b) Hamming Code

(c) Synchronous and Asynchronous Communication