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BICS-013

B. TECH.-VIEP-COMPUTER SCIENCE AND ENGINEERING (BTCSVI)

Term-End Examination

June, 2019

BICS-013 : COMPUTER ORGANISATIONS

Time : 3 Hours *Maximum Marks : 70*

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

1. (a) What is a bus as used in a computer system ? Discuss the three bus system used in computers. 5

   (b) Why and how bus arbitration is required in computers ? Explain. 5

2. (a) Compare RISC and CISC processors for a computer system. 5

   (b) Explain the use of serial port and serial interface for computer system. 5

3. (a) What do you mean by a 2D and $2\frac{1}{2}$D memory ? Explain. 4

   (b) Discuss the use of magnetic disk storage in a computer system. How is data stored and retrieved in such systems ? 6

4. What is the need of an I/O Interface ? Using a suitable block diagram, discuss a typical interface between a keyboard and a processor. 10

5. (a) Differentiate between a hardwired and a microprogrammed control unit. 4

   (b) Why is DMA important for a computer system ? Draw the block diagram of a typical DMA controller. 6

6. (a) Differentiate between synchronous and asynchronous serial communication using suitable examples. 5

   (b) Discuss how data can be stored and retrieved using stack. 5

7. Using an example of your choice, illustrate the use of Hamming code in error detection and correction. Make suitable assumptions. 10

8. (a) What do you mean by locality of reference in the context of memory system in a computer ? 5

   (b) Discuss the use of normalization used in representation of floating point numbers in computers. 5

9. (a) Explain the hardware implementation and flow chart for Booth's algorithm. 7

   (b) Define access time, seek time, transfer time for memory system of a computer. 3

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

    (a) Interrupts

    (b) ASCII code

    (c) Error detection codes