(6 pages) **Reg. No. :** .....

Code No. : 40587 E **Sub. Code : SMCS 32**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2019.

Third Semester

Computer Science – Main

COMPUTER ARCHITECTURE

(For those who joined in July 2017 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. ———— is a group of bits that instruct the computer to perform a specific operations

(a) OP code

(b) Instruction code

(c) ASCII code

(d) EB CDIC code

2. The OP code must consists of atleast ———— bits for a given 2^n distinct operations

(a) 4 (b) 2

(c) n (d) $n-1$

3. The register that receives the information from the output bus is selected by a

(a) Decoder (b) Encoder

(c) Mux (d) DeMux

4. The operation of deletion item in a stack is called ————

(a) delete (b) POP

(c) push (d) remove

5. For signed integers, two complement addition is used to perform

(a) Division (b) Multiplication

(c) Subtraction (d) Addition

6. The ———— order bit of the multiplier in Q_n is tested

(a) high (b) middle

(c) low (d) first

7. _____ operations are the result of I/O instructions written in the computer program

(a) Programmed i/o (b) Interrupt

(c) DMA (d) Transfer

8. The DMA controller has _____ registers

(a) two (b) three

(c) four (d) five

9. Devices that provide backup storage are called _____

(a) Main memory

(b) Auxiliary memory

(c) Cache memory

(d) Virtual memory

10. Enable the CPU to process a number of independent programs concurrently is called

(a) Multi threading

(b) Multi tasking

(c) Multi programming

(d) Real time processing

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Write notes on computer instructions.

Or

(b) Explain about stored program organization.

12. (a) Explain different types of Addressing Modes.

Or

(b) What are the basic data manipulation Instructions? Explain.

13. (a) Explain addition and subtraction with signed – magnitude data.

Or

(b) Explain Booth multiplication algorithm.

14. (a) Explain I/O Bus and Interface moduls.

Or

(b) Explain parallel priority Interrupt with neat diagram.

15. (a) Discuss in brief on memory hierarchy.

Or

(b) Explain direct mapping cache organization with diagram.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Explain in detail about Computer Registers.

Or

(b) Explain in detail about Instruction codes.

17. (a) Describe about different instruction formats.

Or

(b) Discuss in detail on program control.

18. (a) Explain addition and subtraction with signed –2's complement data.

Or

(b) Explain multiplication and division algorithm for floating - point numbers.

19. (a) Explain in brief on various modes of data transfer.

Or

(b) Discuss in brief on Direct Memory Access.

20. (a) Write in brief on Virtual Memory.

Or

(b) Explain in detail on auxiliary memory.

———————