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

Code No. : 30600 E **Sub. Code : SMCS 32**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2020.

Third Semester

Computer Science – Core

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. The —————— register holds the operand read from memory.

   (a) Data

   (b) Accumulator

   (c) Instruction

   (d) Program counter

2. The ———— instruction adds the contents of the memory word specified by the effective address to the value of AC.

(a) Load to AC (b) ADD to AC

(c) Store AC (d) AND to AC

3. The selection lines in each ———— select one register or the input data for particular bus.

(a) demultiplexer (b) multiplexer

(c) encoder (d) decoder

4. The ———— notation, referred to as reverse polish notation.

(a) prefix (b) postfix

(c) infix (d) ASCII

5. A floating-point number is normalized if the most significant digit of the mantissa is ————.

(a) zero (b) non zero

(c) one (d) two

6. The Register ———— is shifted once to the right to form the new partial product.

(a) QEA (b) AVF

(c) SC (d) EAQ

7. The ———— command causes the interface to respond by transferring data from the bus into one of its registers.

(a) I/O (b) Control

(c) Status (d) Output

8. In the ———— method, the I/O device does not have direct access to memory

(a) IOP (b) DMA

(c) Interrupt (d) Programmed I/O

9. The memory unit that communicates directly with the CPU is called the ————.

(a) Auxiliary memory

(b) Main memory

(c) Cache memory

(d) Virtual memory

10. The tracks are commonly divided into sections called

(a) Sectors (b) Blocks

(c) Frames (d) Pages

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 timing and control.

Or

(b) Write a brief note on control memory.

12. (a) Describe briefly the general register organization.

Or

(b) What is program Interrupt? Explain briefly the different types of Interrupts.

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

Or

(b) Explain multiplication algorithm for signed – magnitude data.

14. (a) Explain asynchronous serial transfer with diagram.

Or

(b) Explain Daisy-chaining priority interrupt with diagram.

15. (a) Explain the hardware organization of associative memory with diagram.

Or

(b) Write notes on Associative memory page table.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Discuss in detail on Instruction cycle.

Or

(b) Discuss in detail on Address sequencing.

17. (a) Explain briefly the stack organization.

Or

(b) Explain briefly about Data Transfer and manipulation.

18. (a) Explain division algorithm for two fixed point binary numbers in signed magnitude representation.

Or

(b) Explain floating point arithmetic for addition and subtraction.

19. (a) Explain in detail on handshaking.

Or

(b) Describe in brief on input-output interface.

20. (a) Describe in detail on cache memory.

Or

(b) Discuss in detail on main memory.

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