REV-01
BCA/69/74

2024/05

SET A

BACHELOR OF COMPUTER APPLICATION
SECOND SEMESTER
COMPUTER ORGANIZATION
BCA-201

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs. **Full Marks: 70**

Objective

Time: 30 mins. **Marks: 20**

Choose the correct answer from the following: ***1×20=20***

1. The NOR gate is equivalent to bubble input..... gate.
   a. OR b. AND
   c. NOT d. EXOR
2. Min terms in SOP is represented by.....
   a. ZERO b. ONE
   c. CROSS d. PAIR
3. Number of AND gate required to construct a full adder circuit using two half adder is:
   a. 2 b. 3
   c. 5 d. 4
4. The RAR microinstruction is equivalent to.....
   a. SHL b. SHR
   c. CIR d. CIL
5. $(736.4)_8$ in decimal representation is.....
   a. 478.5 b. 376.4
   c. 436.7 d. None of the above
6. Program Counter (PC) is register used to.....
   a. Count number of instruction b. Store the result after execution
   c. Store the address of next instruction d. Store the address of previous instruction
7. Size of Instruction Register (IR) in a basic computer is.....
   a. 8 bits b. 12 bits
   c. 16 bits d. 32 bits
8. In 8-bit microprocessor, how many op-codes are possible?
   a. 246 b. 278
   c. 250 d. 256
9. Which of the following is unidirectional?
   a. Address bus b. Data bus
   c. Both a & b d. None
10. Hit ratio is a term used to measure..... of a computer.
    a. Speed b. Memory Capacity
    c. Accuracy d. Performance

11. During a write operation if the required block is not present in the cache then..... occurs.
    a. Write miss
    b. Write latency
    c. Write hit
    d. Write delay

12. After binary multiplication the result is accumulated in.....
    a. E Register
    b. Q Register
    c. EA Register
    d. EAQ Register

13. Which one of the following is not a valid classification of Computer Architecture according J.M Flinn's?
    a. SISD
    b. MISD
    c. DISD
    d. MIMD

14. Serpentine writing technology is used in.....
    a. Cache memory
    b. Hard disk
    c. Optical Disk
    d. Tape memory

15. LRU is a commonly used cache replace policy, which means.....
    a. Load Register Used
    b. Least Recently Used
    c. Last Recent Used
    d. Local Register Used

16. The CISC stands for.....
    a. Computer Instruction Set Compliment
    b. Complete Instruction Set Compliment
    c. Computer Indexed Set Components
    d. Complex Instruction set computer

17. The iconic feature of the RISC machine among the following is.....
    a. Reduced number of addressing modes
    b. Increased memory size
    c. Having a branch delay slot
    d. All of the mentioned

18. Pipe-lining is a unique feature of.....
    a. RISC
    b. CISC
    c. ISA
    d. IANA

19. Two level memory is a principle known as.....
    a. Direct Memory Access
    b. Associative memory
    c. Locality of Reference
    d. Virtual memory

20. The multiplier is stored in.....
    a. PC Register
    b. Shift register
    c. Cache
    d. None of the mentioned

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Descriptive

Time : 2 hr. 30 mins. Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. Explain Pin Configuration of 8085 microprocessor with the help of a suitable block diagram. 10

2. a) Explain Edge Triggered Flip Flop with block diagram. 5+5=10
   b) What is micro-program? Write down three examples of Logic and Shift micro-operations.

3. a) Given A= 10110 B= 10010 , then compute AxB with suitable algorithm. 5+5=10
   b) What is interrupt signal? What are different interrupt signal available? Explain.

4. a) What is control word? Explain with example how a computer executes instructions with relevance to control word. 5+5=10
   b) Write an Assembly program to add two numbers.

5. a) What is Clock? Why it is used in digital circuit? Define synchronous vs asynchronous communications. 5+5=10
   b) What is peripheral? Write down the role on interface unit in IO devices.

6. Elaborate RAID technology used in disk memory organization. 10

7. a) What is pipeline processing? Explain with a suitable example. 5+5=10
   b) Realize a Full adder using two Half adder circuits.

8. Write short notes on: (*any two*) 5+5=10
   a) Infiniband
   b) PCI Bus
   c) Superscaller processor

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