**SET A**

**MCQ (1x30=30)**

Qn1. When arithmetic, logic and control unit of a computer are combined into a single unit, it is known as

1. central processing unit
2. memory unit
3. I/O unit
4. operating unit

Qn2. Two main types of branch instructions are

1. conditional branch
2. unconditional branch
3. logical branch
4. both a and b

Qn3 Which of the following 4-bit combinations is/are invalid in the BCD code ?

1.1010

2. 0010

3. 0101

4. 1000.

Qn4 On getting, an interrupt, CPU

1. Finishes the current instruction and moves to interrupt service routine
2. Immediately moves to interrupt service routine without completing current instruction.
3. Releases the control on I/O lines and memory lines.
4. Makes the peripheral device which requested the interrupt wait for fixed intervals of time.

Qn5. Gray code representation of 14 is

1. 1010
2. 1100
3. 1001
4. 1110

Qn6 . 'megabytes' of computer storage capacity consists of

1. one million bytes
2. two million bytes
3. three million bytes
4. four million bytes

Qn7. How many address lines are needed to address each memory location in a 2048 x 4 memory chip?

* 1. 10
  2. 11
  3. 8
  4. 12

Qn8. A name or number used to identify a storage location is called

* 1. A byte
  2. A record
  3. An address
  4. All of above

Qn9 . The difference between memory and storage is that memory is …. and storage is …

* 1. Temporary, permanent
  2. Permanent, temporary
  3. Slow, fast
  4. All of above

Qn10. Which was the computer conceived by Babbage?

* 1. Analytical engine
  2. Arithmetic machine
  3. Donald Knuth
  4. All of above

Qn11. Assume that you have a 3-input NAND gate but need only a 2-input gate. The unused input should be \_\_\_\_\_\_\_\_.

* + - * 1. connected to ground
        2. left open
        3. connected to a HIGH
        4. any of the above

Qn 12. Maximum number in decimal that can be represented by binary 2 digits is

* 1. 2
  2. 3
  3. 4
  4. 5

Qn 13. Octal number 12570 is equals to binary number

1. 5496
2. 9456
3. 6549
4. 5926

Qn 14. A Karnaugh map is a systematic way of reducing which type of expression?

* + 1. product-of-sums
    2. exclusive NOR
    3. sum-of-products
    4. those with overbars

Qn 15. Which of the following expressions is in the sum-of-products (SOP) form?

* + 1. (A + B)(C + D)
    2. (A)B(CD)
    3. AB(CD)
    4. AB + CD

Qn 16. An AND gate with schematic “bubbles” on its inputs performs the same function as a(n)\_\_\_\_\_\_\_\_ gate.

* + 1. NOT
    2. OR
    3. NOR
    4. NAND

Qn 17. The Boolean expression C + CD is equal to \_\_\_\_\_\_\_\_.

* + 1. C
    2. D
    3. C + D
    4. 1

Qn 18. When four 1s are taken as a group on a Karnaugh map, the number of variables eliminated from the output expression is \_\_\_\_\_\_\_\_.

* + 1. 1
    2. 2
    3. 3
    4. 4

Qn 19. Digital systems are called \_\_\_\_\_\_\_\_.

* + - * 1. binary systems
        2. logic systems
        3. numbering systems
        4. ADC systems

Qn 20. The number of 16k × 4 memories needed to construct a 128k × 8 memory is \_\_\_\_\_\_\_\_.

* + 1. 4
    2. 8
    3. 12
    4. 16

Qn 21. The storage element for a static RAM is the \_\_\_\_\_\_\_\_.

* + 1. diode
    2. resistor
    3. capacitor
    4. flip-flop

Qn 22. Circuits whose output depends on directly present input is called

1. combinational circuit
2. sequential circuit
3. combinational sequence
4. series

Qn 23. How many 2K × 8 ROM chips would be required to build a 16K × 8 memory system?

* + 1. 2
    2. 4
    3. 8
    4. 16

Qn24. . External devices that are connected to a computer system are known as

1. expansion cards
2. peripheral devices
3. buses
4. slots

Qn 25. A computer Program that translates one program inst5ruction at a time into machine language is called a/an

* 1. Interpreter
  2. CPU
  3. Compiler
  4. Simulator

Qn26. The main circuit board in the system unit is also called the:

* 1. Busboard
  2. Daughterboard
  3. Clipboard
  4. Motherboard

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Qn27. Decoding and execution of instructions rapidly, one after another is called

1. AL unit
2. backup device
3. keyboard
4. control unit

Qn28. Microprocessors that are used for one particular job are classified as

1. dedicated microprocessors
2. dedicated computers
3. dedicated microcomputers
4. dedicated mega computers

Qn29. Actual equipment of computer system that can be touched are

1. hardware
2. software
3. applications
4. bugs

Qn30. For code conversion how many bits are required for BCD input and Excess-3 outputs?

1. 3 inputs and 2 outputs
2. 4 inputs and 4 outputs
3. 4 inputs and 3 outputs
4. None

**Short answers questions (5x6=30)**

Qn1. What is Cache memory? Explain its types? Why do we need cache memory?

Qn2. What is Primary memory? What are the characteristics of memory? Draw the memory hierarchy structure?

Qn3. What is System bus? Explain with basic diagram?

Qn4. What is K-map? Explain it with example. Compare the HLL and LLL.

Qn5. What is Chipset? What is difference between Computer architecture and computer organization?

**Long questions (2x10=20)**

1.

a. What is VM? What are the benefits of VM in computer world? Explain the Page table and address translation of virtual memory? (10)

b. What do you mean by complement? Why do we need complement system in computer? Explain r’s and (r-1)’s complement with example.(10)

2. a. Why memory is prominent in computer? Explain the different types of ROM.

Differentiate between RAM and ROM. (10)

B. Explain the different memory slots and Expansion Slots? (10)

What is motherboard? What are the features of Motherboard?