Digital Electronics B.Sc. I.T. SEM I

1. The representation of octal number (532.2)8 in decimal is _____
   a) (346.25)10
   b) (532.864)10
   c) (340.67)10
   d) (531.668)10

2. Convert the hexadecimal number (1E2)16 to decimal:
   a) 480
   b) 483
   c) 482
   d) 484

3. Convert binary to octal: (110110001010)2 =?
   a) (5512)8
   b) (6612)8
   c) (4532)8
   d) (6745)8

4. Perform binary addition: 101101 + 011011 = ?
   a) 011010
   b) 1010100
   c) 101110
   d) 1001000

5. For arithmetic operations only _____
   a) 1's complement is used
   b) 2's complement
   c) 10's complement
   d) 9's complement

6. Carry out BCD subtraction for (68) – (61) using 10's complement method.
   a) 00000111
   b) 01110000
   c) 100000111
   d) 011111000

7. How many bits would be required to encode decimal numbers 0 to 9999 in straight binary codes?
   a) 12
   b) 14
   c) 16

d) 18

8. In Boolean algebra, the OR operation is performed by which properties?
   a) Associative properties
   b) Commutative properties
   c) Distributive properties
   d) All of the Mentioned

9. Simplify Y = AB’ + (A’ + B)C.
   a) AB’ + C
   b) AB + AC
   c) A’B + AC’
   d) AB + A
10. A full adder logic circuit will have _____
   a) Two inputs and one output
   b) Three inputs and three outputs
   c) Two inputs and two outputs
   d) Three inputs and two outputs
11. TTL inputs are the emitters of a _____
   a) Transistor-transistor logic
   b) Multiple-emitter transistor
   c) Resistor-transistor logic
   d) Diode-transistor logic

12. Don’t care conditions can be used for simplifying Boolean expressions in _____
   a) Registers
   b) Terms
   c) K-maps
   d) Latches
13. In parts of the processor, adders are used to calculate _____
   a) Addresses
   b) Table indices
   c) Increment and decrement operators
   d) All of the Mentioned
14. In which operation carry is obtained?
   a) Subtraction
   b) Addition
   c) Multiplication
   d) Both addition and subtraction
15. _____
   a) Hexadecimal
   b) Binary coded
   c) Octal
   d) Decimal

16. What are the two types of basic adder circuits?
    a) Sum and carry
    b) Half-adder and full-adder
    c) Asynchronous and synchronous
    d) One and two's-complement
17. It is possible for an enable or strobe input to undergo an expansion of two or more MUX ICs to the digital multiplexer with the proficiency of large number of ____
    a) Inputs
    b) Outputs
    c) Selection lines
    d) Enable lines
18. In S-R flip-flop, if Q = 0 the output is said to be _____
    a) Set
    b) Reset
    c) Previous state
    d) Current state
19. Reflected binary code is also known as _____
    a) BCD code
    b) Binary code
    c) ASCII code
    d) Gray Code
20. Flip-flops are _____
    a) Stable devices
    b) Astable devices
    c) Bistable devices
    d) Monostable devices
21. In digital logic, a counter is a device which _____
    a) Counts the number of outputs
    b) Stores the number of times a particular event or process has occurred
    c) Stores the number of times a clock pulse rises and falls
    d) Counts the number of inputs
22. Which one is a 4-bit binary ripple counter?
    a) IC 7493
    b) IC 7490
    c) IC 7491
    d) IC 7492
23. To operate correctly, starting a ring shift counter requires _____
    a) Clearing all the flip-flops
    b) Presetting one flip-flop and clearing all others
    c) Clearing one flip-flop and presetting all others
    d) Presetting all the flip-flops
24. How is an strobe signal used when serially loading a shift register?
    a) To turn the register on and off
    b) To control the number of clocks
    c) To determine which output Qs are used
    d) To determine the FFs that will be used

25. The terminal count of a typical modulus-10 binary counter is _____
    a) 0000
    b) 1010
    c) 1001
    d) 1111