

## OBJECTIVE TYPE QUESTIONS FOR PRACTICAL EXAMINATION

### Subject : Electronics-I ( EC 112)

1. Which mathematical notation specifies the condition of periodicity for a continuous time signal?
  - a.  $x(t) = x(t + T)$
  - b.  $x(t) = x(t + t^2)$
  - c.  $x(t) = e^{-\alpha t}$
  - d. None of the above
  
2. Signals can be \_\_\_\_\_
  - a. Analog
  - b. Digital
  - c. Either (a) or (b)
  - d. Neither (a) nor (b)
  
3. Frequency and period are \_\_\_\_\_
  - a. inverse of each other
  - b. proportional to each other
  - c. the same
  - d. none of the above
  
4. Causal signal lies on
  - a. Left side of Y-axis
  - b. Right side of Y-axis
  - c. Both side
  - d. None
  
5. Area of unit impulse function is
  - a. 1
  - b. 0
  - c.  $\infty$
  - d. Any finite value
  
6. The period of the function  $\cos \frac{\pi}{4}(t - 1)$  is
  - a.  $\frac{1}{8}$ s
  - b.  $\frac{1}{4}$ s
  - c. 4s
  - d. 8s
  
7. The integration of unit step function is
  - a. A Unit impulse function
  - b. A Unit pulse function
  - c. A ramp function of slop 1
  - d. None
  
8. A function will have only sine terms if.

- a.  $F(t) = -F(t)$
  - b.  $F(-t) = F(t)$
  - c.  $F(-t) = -F(t)$
  - d. None
9. If  $f(-t) = f(t)$  then the function is
- a. Odd
  - b. Even
  - c. Neither even nor Odd
  - d. Both
10. Fourier series expansion of an even contain only .
- a. Cosine term and a constant
  - b. Sine term and a constant
  - c. Cosine term
  - d. Sine term
11. A XOR gate has inputs A and B and output Y. Then the output equation is
- a.  $Y = AB$
  - b.  $Y = AB + A B$
  - c.  $Y = A B + A B$
  - d.  $Y = A B + A B$
12. At room temperature the current in an intrinsic semiconductor is due to
- a. Holes
  - b. Electrons
  - c. Ions
  - d. holes and electrons
13. The most commonly used semiconductor material is
- a. Silicon
  - b. Germanium
  - c. mixture of silicon and germanium
  - d. none of the above
14. In a zener diode
- a. the forward current is very high
  - b. sharp breakdown occurs at a certain reverse voltage
  - c. the ratio  $v-i$  can be negative
  - d. there are two  $p-n$  junctions
15. Zener diodes with breakdown voltages less than 5 V operate predominantly in what type of breakdown?
- a. Avalanche
  - b. Zener
  - c. Varactor
  - d. Schottky
16. The truth table shown is for a two-input:

A	B	Y
0	0	1
0	1	0
1	0	0
1	1	0

- a. NAND GATE
  - b. NOR GATE
  - c. X-OR GATE
  - d. X-NOR GATE
17. It is required to change a logic 0 state into a logic 1 state, and vice versa. The logic gate required to do this is known as:
- a. a buffer
  - b. an inverter
  - c. an exclusive-OR gate
18. Peak inverse voltage for a diode is the
- a. voltage corresponding to rated maximum voltage
  - b. maximum voltage that can be applied across the diode in the conducting direction
  - c. maximum voltage that can be applied across the diode in the non-conducting direction
  - d. none of the above.
19. The normal operating region for a zener diode is the
- a. forward-bias region.
  - b. reverse-bias region.
  - c. zero-crossing region.
  - d. reverse-breakdown region.
20. A circuit that removes positive or negative parts of waveform is called
- a. clamper
  - b. clipper
  - c. diode clamp
  - d. limiter
21. A circuit that adds positive or negative dc voltage to an input sine wave is called
- a. clamper
  - b. clipper
  - c. diode clamp
  - d. limiter
22. In a full wave rectifier, the current in each diode flows for
- a. whole cycle of the input signal

- b. half cycle of the input signal
  - c. more than half cycle of the input signal
  - d. none of these
23. Write the Boolean expression for an inverter logic gate with input  $C$  and output  $Y$
- a.  $Y = C$
  - b.  $Y = \bar{C}$
24. The output of an exclusive-OR gate is HIGH if \_\_\_\_\_.
- a. all inputs are LOW
  - b. all inputs are HIGH
  - c. the inputs are unequal
  - d. none of the above
25. A half wave rectifier is equivalent to
- a. clamper circuit
  - b. clipper circuit
  - c. clamper circuit with negative bias
  - d. clamper circuit with positive bias
26. IF the line frequency is 50 Hz, the output frequency of bridge rectifier is
- a. 25 Hz
  - b. 50 Hz
  - c. 100 HZ
  - d. 200HZ
27. In a center tap full wave rectifier, if  $V_m$  is the peak voltage between center tap and one end of the secondary, the maximum voltage coming across the reverse bias diode is
- a.  $V_m$
  - b.  $2 V_m$
  - c.  $V_m/2$
  - d.  $V_m/\sqrt{2}$
28. The ripple factor of a bridge rectifier is
- a. 0.482
  - b. 0.812
  - c. 1.11
  - d. 1.21
29. The maximum efficiency of full wave rectification is

- a. 40.6%
  - b. 100%
  - c. 81.2%
  - d. 85.6%
30. To get a peak load voltage of 40V out of a bridge rectifier. What is the approximate rms value of secondary voltage?
- a. 0 V
  - b. 14.4 V
  - c. 28.3 V
  - d. 56.6 V
31. Which rectifier requires four diodes?
- a. half-wave voltage doubler
  - b. full-wave voltage doubler
  - c. full-wave bridge circuit
  - d. voltage quadrupler
32. An OR gate has 4 inputs. One input is high and the other three are low. The output
- a. is low
  - b. is high
  - c. is alternately high and low
  - d. may be high or low depending on relative magnitude of inputs
33. The number of bits in ASCII is
- a. 12
  - b. 10
  - c. 9
  - d. 7
34. A Zener diode is based on the principle of
- a. Thermionic emission
  - b. Tunneling of charge carriers across the junction
  - c. Diffusion of Charge Carriers Across the junction
  - d. None of the Above
35. The output of an AND gate with three inputs, A, B, and C, is HIGH when \_\_\_\_\_.
- a.  $A = 1, B = 1, C = 0$
  - b.  $A = 0, B = 0, C = 0$
  - c.  $A = 1, B = 1, C = 1$
  - d.  $A = 1, B = 0, C = 1$
36. If a 3-input NOR gate has eight input possibilities, how many of those possibilities will result in a HIGH output?
- a. 1

- b. 2
  - c. 7
  - d. 8
37. The output of an OR gate with three inputs, A, B, and C, is LOW when \_\_\_\_\_.
- a.  $A = 0, B = 0, C = 0$
  - b.  $A = 0, B = 0, C = 1$
  - c.  $A = 0, B = 1, C = 1$
  - d. all of the above
38. Which of the following logical operations is represented by the + sign in Boolean algebra?
- a. Inversion
  - b. AND
  - c. OR
  - d. Complementation
39. Output will be a LOW for any case when one or more inputs are zero for a(n):
- a. OR gate
  - b. NOT gate
  - c. AND gate
  - d. NOR gate
40. The format used to present the logic output for the various combinations of logic inputs to a gate is called
- a. Boolean constant
  - b. Boolean variable
  - c. truth table
  - d. input logic function
41. If a 3-input AND gate has eight input possibilities, how many of those possibilities will result in a HIGH output?
- a. 1
  - b. 2
  - c. 7
  - d. 8
42. The Boolean expression for a 3-input OR gate is \_\_\_\_\_.
- a.  $X = AB$
  - b.  $X = ABC$
  - c.  $X = A + B + C$
  - d.  $X = AB + C'$
43. A 2-input NOR gate is equivalent to a \_\_\_\_\_.
- a. negative-OR gate
  - b. negative-AND gate
  - c. negative-NAND gate
  - d. none of the above

44. The output of a NOT gate is HIGH when \_\_\_\_\_.
- the input is LOW
  - the input is HIGH
  - power is applied to the gate's IC
  - power is removed from the gate's IC
45. If the input to a NOT gate is A and the output is X, then \_\_\_\_\_.
- $X = A$
  - $X = \bar{A}$
  - $X = 0$
  - none of the above
46. How many inputs of a four-input AND gate must be HIGH in order for the output of the logic gate to go HIGH
- any one of the inputs
  - any two of the inputs
  - any three of the inputs
  - all four inputs
47. If the output of a three-input AND gate must be a logic LOW, what must the condition of the inputs be?
- All inputs must be LOW.
  - All inputs must be HIGH.
  - At least one input must be LOW.
  - At least one input must be HIGH.
48. Logically, the output of a NOR gate would have the same Boolean expression as a(n):
- NAND gate immediately followed by an inverter
  - OR gate immediately followed by an inverter
  - AND gate immediately followed by an inverter
  - NOR gate immediately followed by an inverter
49. What is the Boolean expression for a three-input AND gate?
- $X = A + B + C$
  - $X = A . B . C$
  - $X = A - B - C$
  - $A \$ B \$ C$
50. Which of the following gates has the exact inverse output of the AND gate for all possible input combinations?
- NOR
  - NOT
  - NAND
  - AND

Answer:

Question no	Answer	Question no	Answer
1	A	26	C
2	C	27	B
3	A	28	A
4	B	29	C
5	A	30	C
6	D	31	C
7	C	32	B
8	C	33	D
9	B	34	B
10	A	35	C
11	C	36	A
12	D	37	A
13	A	38	C
14	B	39	C
15	B	40	C
16	B	41	A
17	B	42	C
18	C	43	B
19	D	44	A
20	B	45	B
21	A	46	D
22	B	47	C
23	B	48	B
24	C	49	B
25	B	50	C