

**MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)**  
**I B.TECH II SEMESTER**  
**COMMON TO CE,ME,MINING (BEEE)**  
**OBJECTIVE QUESTIONS**

**MODULE-III**

1. EMF Method is used for calculation of [     ]  
A) Voltage Regulation B) Efficiency C) Losses D) None of these
2. Slip of Induction Motor at Starting [     ]  
A) 0 B) 1 C) 0.5 D) 0.3
3. Squirrel Cage Induction Motor is having [     ]  
A) High Starting Torque B) Low Starting Torque C) Both A&B D) None of these
4. Slip ring Induction Motor is having [     ]  
A) High Starting Torque B) Low Starting Torque C) Both A&B D) None of these
5. RMF Means [     ]  
A) Rotating Motive Force B) Rotating Magnetic Field C) Rotating Mechanical force D) None
6. Synchronous Speed (Ns) [     ]  
A)  $120f/P$  B)  $120P/f$  C) Both A&B D) None of these
7. Voltage Regulation is [     ]  
A)  $E-V/V$  B)  $V-E/V$  C)  $E-V/E$  D)  $V-E/E$
8. Slip of Induction motor [     ]  
A)  $N_s - N_r / N_s$  B)  $N_r - N_s / N_s$  C)  $N_s - N_r / N_r$  D) None of these
9. Three Phase Slip ring Induction motor rotor is having [     ]  
A) three phase winding B) Single Phase winding C) Two Phase winding D) None of these
10. Three Phase Squirrel cage Induction motor rotor is having [     ]  
A) three phase winding B) Single Phase winding  
C) Two Phase winding D) Short Circuited Copper Bars
11. Induction motor Stator Voltage control method is used for [     ]  
A) Speed control B) Frequency Control C) Both A&B D) None of these
12. Three phase Induction motor stator is of [     ]  
A) 3-phase supply B) 1-phase Supply C) Both A&B D) None of these
13. Induction Motor operates on the principle of [     ]  
A) Induction B) Conduction C) Both A&B D) None of these
14. Motor is a machine which converts [     ]  
A) Mechanical Energy into Electrical Energy B) Electrical Energy into Mechanical Energy  
C) Both A&B D) None of these
15. Generator is a machine which converts [     ]  
A) Mechanical Energy into Electrical Energy B) Electrical Energy into Mechanical Energy  
C) Both A&B D) None of these
16. Efficiency means [     ]  
A) Output Power / Input power B) Input Power / Output Power C) Both A&B D) None of these
17. Core Losses are [     ]  
A) Hysteresis loss B) Eddy Current Loss C) Both A&B D) None of these
18. Copper Losses are [     ]  
A)  $I^2R$  Losses B) Constant Losses C) Both A&B D) None of these
19. Mechanical Losses are [     ]  
A) core losses B) Friction & Windage losses C) Both A&B D) None of these
20. External Resistance is observed in [     ]  
A) Squirrel Cage Induction Motor B) Slip Ring Induction Motor C) Both A&B D) None of these
21. What is the synchronous speed when  $F=60\text{Hz}$ ,  $P=6$  [     ]  
A) 1000 RPM B) 1100 RPM C) 1200 RPM D) 1300 RPM

22. What is slip when  $N_s=1200\text{RPM}$  ,  $N_r=1000\text{RPM}$  [     ]  
 A)0.15     B)0.16     C)0.17     D) 0.18
23. What is the value of frequency when  $N_s=1000\text{ RPM}$  ,  $P=6$  [     ]  
 A)30Hz     B)40Hz     C)50Hz     D)60Hz
24. What is the value of  $N_r$  when  $S=0.6$ ,  $N_s=1000\text{RPM}$  [     ]  
 A)400 RPM   B)500 RPM   C)600 RPM   D)700RPM
25. Slip When  $N_r=N_s$  [     ]  
 A)1     B)0     C)0.5     D)0.4

ANSWERS:

- 1.A 2.B 3.B 4.A 5.B 6.A 7.A 8.A 9.A 10.D 11.A 12.A 13.A 14.B 15.A 16.A 17.C 18.A 19.B 20.B  
 21.C 22.B 23.C 24.A 25.B

**MODULE 4**

1. The p-region has a greater concentration of \_\_\_\_\_ as compared to the n-region in a P-N junction. [     ]  
 A) holes     B) electrons     C) both holes & electrons     D) phonons
2. A p-type semiconductor material is doped with \_\_\_\_\_ impurities whereas a n-type semiconductor material is doped with \_\_\_\_\_ impurities [     ]  
 A) acceptor, donor     B) acceptor, acceptor     C) donor, donor     D) donor, acceptor
3. In the p & n regions of the p-n junction the \_\_\_\_\_ & the \_\_\_\_\_ are the majority charge carriers respectively. [     ]  
 A) holes, holes     B) electrons, electrons     C) holes, electrons     D) electrons, holes
4. The n-region has a greater concentration of \_\_\_\_\_ as compared to the p-region in a P-N junction diode.[     ]  
 A) holes     B) electrons     C) both holes & electrons     D) phonons
5. Which of the below mentioned statements is false regarding a p-n junction diode? [     ]  
 A) Diode are uncontrolled devices     B) Diodes are rectifying devices  
 C) Diodes are unidirectional devices     D) Diodes have three terminals
6. In the p & n regions of the p-n junction the \_\_\_\_\_ & the \_\_\_\_\_ are the minority charge carriers respectively. [     ]  
 A) holes, holes     B) electrons, electrons     C) holes, electrons     D) electrons, holes
7. Lets assume that the doping density in the p-region is  $10^{-9}\text{ cm}^{-3}$  & in the n-region is  $10^{-17}\text{ cm}^{-3}$ , as such the p-n junction so formed would be termed as a [     ]  
 A)  $p^- n^-$      B)  $p^+ n^-$      C)  $p^- n^+$      D)  $p^+ n^+$
8. When a physical contact between a p-region & n-region is established which of the following is most likely to take place? [     ]  
 A) Electrons from N-region diffuse to P-region  
 B) Holes from P-region diffuse to N-region  
 C) Both of the above mentioned statements are true  
 D) Nothing will happen
9. Which of the following is true in case of an unbiased p-n junction diode? [     ]  
 A) Diffusion does not take place  
 B) Diffusion of electrons & holes goes on infinitely  
 C) There is zero electrical potential across the junctions  
 D) Charges establish an electric field across the junctions
10. Which of the following is true in case of a forward biased p-n junction diode? [     ]  
 A) The positive terminal of the battery sucks electrons from the p-region  
 B) The positive terminal of the battery injects electrons into the p-region

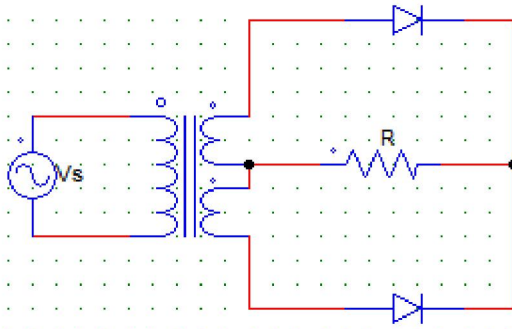
- C) The negative terminal of the battery sucks electrons from the p-region  
 D) None of the above mentioned statements are true

11. The arrow direction in diode symbol indicates [      ]  
 A) Direction of electron flow      B) Direction of holes flow  
 C) Opposite to Direction of hole flow      D) none of the above
12. When the diode is forward biased, it is equivalent to [      ]  
 A) an off switch.      B) an on switch.      C) a high resistance.      D) none of the above.
13. When transistors are used in digital circuits they usually operate in the: [      ]  
 A. active region      B. breakdown region      C. saturation and cutoff regions      D. linear region
14. A transistor has a  $\beta_{DC}$  of 250 and a base current,  $I_B$ , of  $20 \mu A$ . The collector current,  $I_C$ , equals: [      ]  
 A.  $500 \mu A$       B. 5 mA      C. 50 mA      D. 5 A
15. A current ratio of  $I_C/I_E$  is usually less than one and is called: [      ]  
 A. beta      B. theta      C. alpha      D. omega
16. The ends of a load line drawn on a family of curves determine: [      ]  
 A. saturation and cutoff      B. the operating point      C. the power curve      D. the amplification factor
17. Which is beta's current ratio? [      ]  
 A.  $I_C/I_B$       B.  $I_C/I_E$       C.  $I_B/I_E$       D.  $I_E/I_B$
18. A collector characteristic curve is a graph showing: [      ]  
 A. emitter current ( $I_E$ ) versus collector-emitter voltage ( $V_{CE}$ ) with ( $V_{BB}$ ) base bias voltage held constant  
 B. collector current ( $I_C$ ) versus collector-emitter voltage ( $V_{CE}$ ) with ( $V_{BB}$ ) base bias voltage held constant  
 C. collector current ( $I_C$ ) versus collector-emitter voltage ( $V_C$ ) with ( $V_{BB}$ ) base bias voltage held constant  
 D. collector current ( $I_C$ ) versus collector-emitter voltage ( $V_{CC}$ ) with ( $V_{BB}$ ) base bias voltage held constant
19. What is the current gain for a common-base configuration where  $I_E = 4.2 \text{ mA}$  and  $I_C = 4.0 \text{ mA}$ ? [      ]  
 A. 16.80      B. 1.05      C. 0.20      D. 0.95
20. If a 2 mV signal produces a 2 V output, what is the voltage gain? [      ]  
 A. 0.001      B. 0.004      C. 100      D. 1000
21. Most of the electrons in the base of an NPN transistor flow: [      ]  
 A. out of the base lead      B. into the collector      C. into the emitter      D. into the base supply
22. Total emitter current is: [      ]  
 A.  $I_E - I_C$       B.  $I_C + I_E$       C.  $I_B + I_C$       D.  $I_B - I_C$
23. For a C-C configuration to operate properly, the collector-base junction should be reverse biased, while forward bias should be applied to which junction? [      ]  
 A. collector-emitter      B. base-emitter      C. collector-base      D. cathode-anode
24. What is the collector current for a C-E configuration with a beta of 100 and a base current of  $30 \mu A$  [      ]  
 A.  $30 \mu A$       B.  $3 \mu A$       C. 3 mA      D. 3 MA
25. The most commonly used transistor circuit arrangement is [      ]  
 A. common base      B. common emitter.      C. common collector.      D. none of the above.
26. The input/output relationship of the common-collector and common-base amplifiers is: [      ]  
 A. 270 degrees      B. 180 degrees      C. 90 degrees      D. 0 degrees

27. With a PNP circuit, the most positive voltage is probably: [     ]  
 A. ground    B.  $V_C$     C.  $V_{BE}$     D.  $V_{CC}$
28. If an input signal ranges from 20–40  $\mu$ A (microamps), with an output signal ranging from .5–1.5 mA (milliamps), what is the ac beta? [     ]  
 A. 0.05    B. 20    C. 50    D. 500
29. The MOSFET combines the areas of \_\_\_ & \_\_\_\_ [     ]  
 A) field effect & MOS technology B) semiconductor & TTL C) MOS technology & CMOS technology  
 D) none of the mentioned
30. Which of the following terminals does not belong to the MOSFET? [     ]  
 a) Drain b) Gate c) Base d) Source
31. Choose the correct statement [     ]  
 a) MOSFET is a uncontrolled device  
 b) MOSFET is a voltage controlled device  
 c) MOSFET is a current controlled device  
 d) MOSFET is a temperature controlled device
32. The arrow on the symbol of MOSFET indicates [     ]  
 a) that it is a N-channel MOSFET  
 b) the direction of electrons  
 c) the direction of conventional current flow  
 d) that it is a P-channel MOSFET
33. The controlling parameter in MOSFET is [     ]  
 a)  $V_{ds}$     b)  $I_g$     c)  $V_{gs}$     d)  $I_s$
34. The output characteristics of a MOSFET, is a plot of [     ]  
 a)  $I_d$  as a function of  $V_{gs}$  with  $V_{ds}$  as a parameter  
 b)  $I_d$  as a function of  $V_{ds}$  with  $V_{gs}$  as a parameter  
 c)  $I_g$  as a function of  $V_{gs}$  with  $V_{ds}$  as a parameter  
 d)  $I_g$  as a function of  $V_{ds}$  with  $V_{gs}$  as a parameter
35. The ripple factor of a full-wave rectifier circuit compared to that of a half wave rectifier circuit without filter is [     ]  
 (A) half of that for a half 'wave rectifier  
 (B) less than half that for a half-wave rectifier circuit  
 (C) equal to that of a half wave rectifier.  
 (D) none of the above.
36. A single-phase full wave mid-point type diode rectifier requires \_\_\_ number of diodes whereas bridge type requires \_\_\_ [     ]  
 A) 1,2    B) 2,4    C) 4,8    D) 3,2
37. A single-phase full wave rectifier is a [     ]  
 a) single pulse rectifier  
 b) multiple pulse rectifier  
 c) two pulse rectifier  
 d) three pulse rectifier

38. The below shown circuit is that of a

[     ]



- a) full wave B-2 type connection
- b) full wave M-2 type connection
- c) half wave B-2 type connection
- d) half wave M-2 type connection

39. In a 1-phase full wave bridge rectifier with M-2 type of connection has secondary side voltage  $V_s = V_m \sin \omega t$ , with R load & ideal diodes.

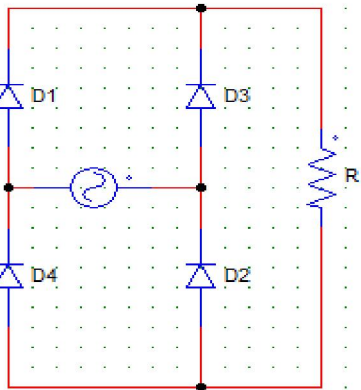
The expression for the average value of the output voltage can be given by

[     ]

- a)  $2V_m/\pi$
- b)  $V_m/\pi$
- c)  $V_m/\sqrt{2}$
- d)  $2V_m/\sqrt{2}$

40. The below shown circuit is that of a

[     ]



- a) full wave B-2 type connection
- b) full wave M-2 type connection
- c) half wave B-2 type connection
- d) half wave B-2 type connection

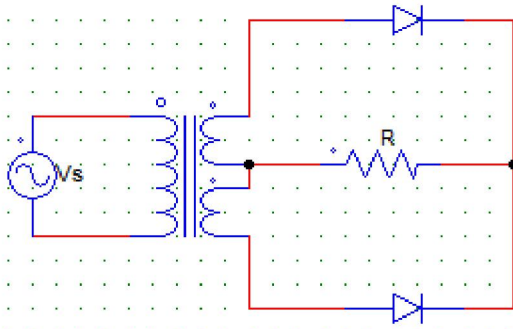
41. In a 1-phase full wave bridge rectifier with M-2 type of connection has secondary side voltage  $V_s = V_m \sin \omega t$ , with R load & ideal diodes.

The expression for the rms value of the output voltage can be given by

[     ]

- a)  $V_m/\pi$
- b)  $V_m/\sqrt{2}$
- c)  $V_m$
- d)  $V_m^2$

42. For the circuit shown below, find the power delivered to the R load [      ]



Where,

$$V_s = 230\text{V}$$

$V_s$  is the secondary side single winding rms voltage.

$$R = 1\text{K}\Omega$$

a) 46 W b) 52.9 W c) 67.2 W d) 69 W

43. The PIV experienced by the diodes in the mid-point type configuration is [      ]

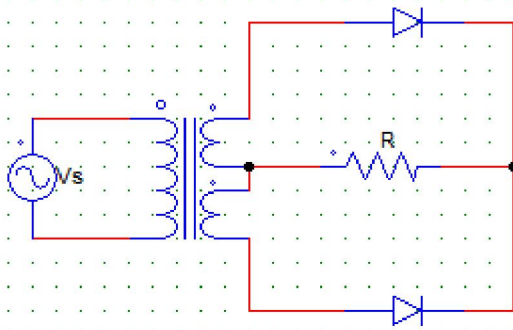
a)  $V_m$

b)  $2V_m$

c)  $4V_m$

d)  $V_m/2$

44. For the circuit shown below, find the value of the average output current. [      ]



Where,

$$V_s = 230\text{V}$$

$$R = 1\text{K}\Omega$$

$V_s$  is the secondary side single winding rms voltage.

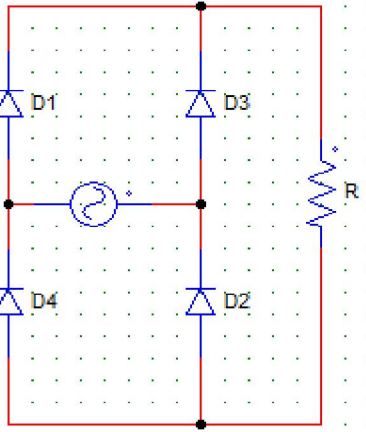
a) 100mA

b) 107mA

c) 200mA

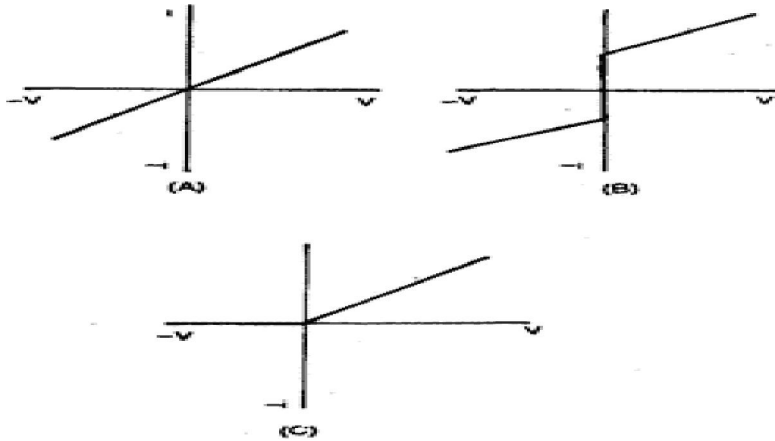
d) 207mA

45. In the circuit, let  $I_m$  be the peak value of the sinusoidal source current. The average value of the diode current for the below given configuration is [      ]



- a)  $I_m$    b)  $I_m/2$    c)  $I_m/\pi$    d)  $I_m/\sqrt{2}$

46. An ideal rectifier having a linear characteristic in forward direction and an infinite resistance in the reverse direction, can be represented by [     ]



- (A) figure A   (B) figure B   (C) figure C   (D) none of the figures shown.

47. Which of the following equipment needs direct current? [     ]

- (A) Relays   (B) Telephones   (C) Time switches   (D) All of the above.

48. In large motor generator sets ac motor is usually [     ]

- (A) induction motor squirrel cage type  
 (B) synchronous motor  
 (C) induction motor wound rotor type  
 (D) any of the above.

49. The rms value of half wave-rectified sine wave with  $i_m$  as peak value is [     ]

- (A)  $0.707 i_m$    (B)  $0.66 i_m$    (C)  $0.5 i_m$    (D)  $0.318 i_m$ .

50. 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.

51. When voltage applied to a diode is more than PIV, it is likely to result in [     ]

- (A) More distortion on output side   (B) Poor regulation   (C) Conduction in both direction  
 (D) Breakdown at the junction.

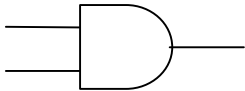
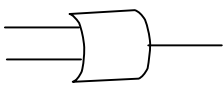
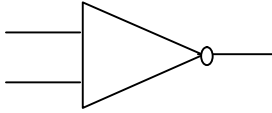
1. A 2. A 3. C 4.B 5.D 6.D 7.B 8.C 9.D 10.A 11.B 12.B 13.C 14.B 15.C 16.A 17.A 18.B 19.D 20.D 21.B 22.C  
 23.A 24.C 25.B 26.D 27.A 28.C 29.A 30.C 31.B 32.B 33. B 34.B 35.B 36.B 37.C 38.B 39.A 40.A 41.B 42.B 43.B  
 44.D 45.B 46.C 47.D 48.B 49.C 50.C 51.D

**MODULE-V**

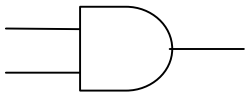
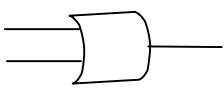
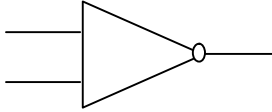
1. In Active mode operation Transistor input & Output junctions respectively [      ]  
 A) Forward bias, Reverse bias B) Reverse bias, Forward bias C) Forward bias , Forward bias  
 D) Reverse bias, Reverse bias
2. In Cut-off mode operation Transistor input & Output junctions respectively [      ]  
 A) Forward bias, Reverse bias B) Reverse bias, Forward bias C) Forward bias , Forward bias  
 D) Reverse bias, Reverse bias
3. In Saturation mode operation Transistor input & Output junctions respectively [      ]  
 A) Forward bias, Reverse bias B) Reverse bias, Forward bias C) Forward bias , Forward bias  
 D) Reverse bias, Reverse bias
4. During Active mode Transistor becomes [      ]  
 A) Rectifier B) Amplifier C) Clipper D) None of these
5. H-Parameters means [      ]  
 A) Transmission B) Impedance C) Hybrid D) None of these
6. Transistor H-Parameters [      ]  
 A)  $h_{11}, h_{12}, h_{21}, h_{22}$  B)  $h_{21}, h_{23}, h_{24}, h_{22}$  C)  $h_{23}, h_{22}, h_{25}, h_{26}$
7. In Hybrid Parameters  $h_{11}$  is called [      ]  
 A) Forward current gain B) Reverse Voltage gain C) Input Impedance D) Output Admittance
8. In Hybrid Parameters  $h_{12}$  is called [      ]  
 A) Forward current gain B) Reverse Voltage gain C) Input Impedance D) Output Admittance
9. In Hybrid Parameters  $h_{21}$  is called [      ]  
 A) Forward current gain B) Reverse Voltage gain C) Input Impedance D) Output Admittance
10. In Hybrid Parameters  $h_{22}$  is called [      ]  
 A) Forward current gain B) Reverse Voltage gain C) Input Impedance D) Output Admittance
11. With Positive Feed Back gain [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
12. With Negative Feed Back gain [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
13. With Negative Feed Back Stability [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
14. With Positive Feed Back Stability [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
15. With Positive Feed Back Bandwidth [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
16. With Negative Feed Back Bandwidth [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
17. With Positive Feed Back Noise & Distortion [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
18. With Negative Feed Back Noise & Distortion [      ]  
 A) Increases B) Decreases C) Both A&B D) None of these
19. Binary Number System IS having Base of [      ]  
 A) 1 B) 2 C) 3 D) 0
20. In Binary Number System the output states [      ]  
 A) 0,1 B) 1,1 C) 0,0 D) 2,0



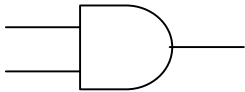
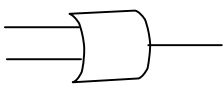
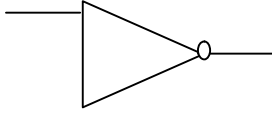
21. Which of the following is AND gate

- A)  B)  C)  D) None

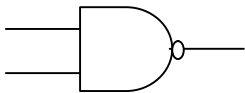
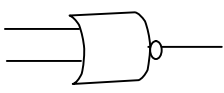
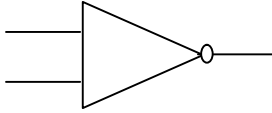
22. Which of the following is OR gate

- A)  B)  C)  D) None

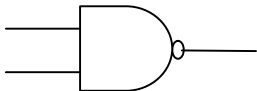
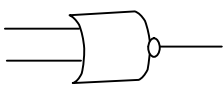
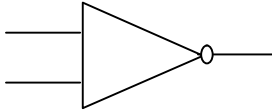
23. Which of the following is NOT gate

- A)  B)  C)  D) None

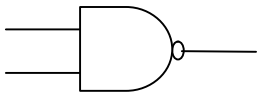
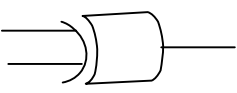
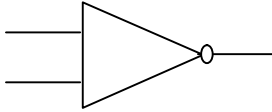
24. Which of the following is NOR gate

- A)  B)  C)  D) None

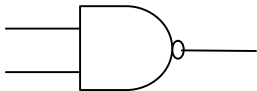
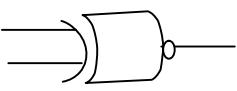
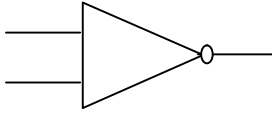
25. Which of the following is NAND gate

- A)  B)  C)  D) None

26. Which of the following is XOR gate

- A)  B)  C)  D) None

27. Which of the following is XNOR gate

- A)  B)  C)  D) None

28. Which of the following is Universal Gate

- A) NAND B) NOR C) Both A&B D) None of these

29. Expression for Two input AND Gate

- A)  $AB$  B)  $A+B$  C)  $A-B$  D)  $A/B$

30. Expression for Two input OR Gate

[ ]

A)AB B) A+B C) A-B D)A/B

31..Expression for Two input NAND Gate [ ]  
A) $\overline{AB}$  B) $\overline{A+B}$  C) A-B D)A/B

32.Expression for Two input NOR Gate [ ]  
A) $\overline{AB}$  B) $\overline{A+B}$  C) A-B D)A/B

33. Expression for Two input XOR Gate [ ]  
A) $\overline{AB+AB}$  B) $\overline{AB+AB}$  C) Both D) None of these

34. Expression for Two input XNOR Gate [ ]  
A) $\overline{AB+AB}$  B) $\overline{AB+AB}$  C) Both D) None of these

35. According to Boolean Alzebra  $A+0 =$  [ ]  
A) A B)0 C)1 D) None of these

36. According to Boolean Alzebra  $A+1 =$  [ ]  
A) A B)0 C)1 D) None of these

37. According to Boolean Alzebra  $A.0 =$  [ ]  
A) A B)0 C)1 D) None of these

38.According to Boolean Alzebra  $A.1 =$  [ ]  
A) A B)0 C)1 D) None of these

39.According to Boolean Alzebra  $A.A =$  [ ]  
A) A B)0 C)1 D) None of these

40.According to Boolean Alzebra  $A+A =$  [ ]  
A) A B)0 C)1 D) None of these

41.According to Demorgans theorem  $\overline{A+B+C+D}$ ----- [ ]

A) $\overline{A+B+C+D}$ ----- B) $\overline{A} . \overline{B} . \overline{C} . \overline{D}$ ----- C) Both A& B D) None of these

42. According to Demorgans theorem  $\overline{A . B . C . D}$ ----- [ ]

A) $\overline{A+B+C+D}$ ----- B) $\overline{A} . \overline{B} . \overline{C} . \overline{D}$ ----- C) Both A& B D) None of these

43.In Any Flip Flop No-of States [ ]  
A)2 B)1 C)0 D) None of these

44.SR Flip Flop is called [ ]  
A) SET-RESET B) RESET-SET C) Both A&B D) None of these

45.In D-Flip Flop Output is [ ]  
A) Same as Input B) 0 C) 1 D) None of these

46. In OFF State output is [ ]  
A) 1 B) 0 C) both A&B D) None of these

47. In ON State output is [ ]  
A) 1 B) 0 C) both A&B D) None of these

48. In NOT Gate Output is [ ]  
A) Complement of input B) Same of input C) both A&B D) None of these

49.In Which of the following Flip Flops Output Follows Input [ ]  
A) J-K Flip Flop B) S-R Flip Flop C) D-Flip Flop D) None of these

50.The Expression for XOR Gate is [ ]  
A) A+B B) AB C) A B D)None of these

ANSWERS:

- 1.A 2.D 3.C 4.B 5.C 6.A 7.C 8.B 9.A 10.D 11.A 12.B 13.A 14.B 15.B 16.A 17.B 18.A 19.B 20.A  
21.A 22.B 23.C 24.B 25.A 26.B 27.B 28.C 29.A 30.B 31.A 32.B 33.B 34.A 35.A 36.C 37.B 38.A  
39.A 40.A 41.B 42.A 43.A 44.A 45.A 46.B 47.A 48.A 49.C 50.D