1. During reverse bias, a small current develops known as_____
   A. Forward current
   B. Reverse current
   C. Reverse saturation current
   D. Active current

2. The product of charge carriers mobility and electric field intensity is
   A. Drain velocity
   B. Drift velocity
   C. Push velocity
   D. Pull velocity

3. For the "off" state of a Zener diode, the voltage across the diode should be _____.
   A. Greater than V_Z
   B. Zero
   C. Less than V_Z but greater than zero
   D. None of the above

4. The terminal that has the biggest size in a transistor is ……
   A. Collector
   B. Base
   C. Emitter
   D. Collector-base-junction

5. Identify the transistor preferred for applications of High power?
   A. MOSFET
   B. BJT
   C. UJT
   D. FET

6. Which of these P-N junction characteristics are not dependent on temperature.
   A. Junction resistance
   B. Reverse saturation current
   C. Bias current
   D. Barrier voltage

7. If the drift current is 100mA and diffusion current is 1A what is the total current in the semiconductor diode
   A. 1.01 A
   B. 1.1 A
   C. 900m A
   D. 10 A

8. Zener diodes with breakdown voltages less than 5 V operate predominantly in what type of breakdown?
   A. Avalanche
   B. **Zener**
   C. Varactor
   D. Schottky

9. The collector of a transistor is ……. doped
   A. Moderately
   B. Lightly
   C. None of the above
   D. Heavily

10. What works as Conducting channel in MOSFET?
   A. Physical layer
   B. Transmission layer
   C. Inversion layer
   D. Metal Layer

11. What type of material is obtained when an intrinsic semiconductor is doped with pentavalent impurity?
   A. N-type semiconductor
   B. Extrinsic semiconductor
   C. P-type semiconductor
   D. d) Insulator

12. In a PN junction the potential barrier is due to the charges on either side of the junction, these charges are----------
    A. Majority carriers
    B. Minority carriers
    C. Both (a) and (b)
    D. Fixed donor and accepter ions
13. The zener diode is heavily doped because_____
    A. to have low breakdown voltage
    B. to have high breakdown voltage
    C. to have high current variations
    D. d) to maintain perfect quiescent point
14. A transistor is a …… operated device
    A. current
    B. voltage
    C. both voltage and current
    D. none of the above
15. In a NPN transistor, ……. are the minority carriers
    A. free electrons
    B. holes
    C. donor ions
    D. acceptor ions
16. Which layer isolates terminal Gate from semiconductor?
    A. Silicon oxide
    B. Silicon dioxide
    C. Silicon
    D. Silica
17. For the parallel operation of single-phase transformers it is necessary that they should have
    A. Same efficiency
    B. **Same polarity**
    C. Same kVA rating
    D. Same number of turns on the secondary side.
18. Which of the following are the types of BLDC motor?
    A. Unipolar, Bipolar
    B. Unipolar, PWM
    C. Bipolar, PWM
    D. Synchronous, Induction
19. The step angle of the stepper motor is 2.5°. If the stepping frequency is 3600 pulses per second, then the shaft speed will be
    A. 3600 RPS
    B. 144 RPS
    C. 25 RPS
    D. 2.5 RPS
20. A step up chopper has input is 110 V and output is 150 V. The value of duty cycle is
    A. 0.32
    B. 0.67
    C. 0.45
    D. 0.27

21 A linear ac servomotor must have
    A. High rotor resistance
    B. High rotor reactance
    C. A large air gap
    D. Both high rotor resistance and reactance

22 In transformer if the secondary is open circuited then its terminal voltage is
A. **Same as the induced emf**
B. Greater than the induced emf
C. Lesser than the induced emf
D. None of these

23. Due to low inertia, BLDC motors have _____
    A. Faster acceleration
    B. Slower acceleration
    C. High-cost
    D. Low cost

24. The stepper motor has six-phase winding on its stator and has 12 teeth on the rotor. The stepping angle is
    A. 5°
    B. 10°
    C. 2.5°
    D. 30°
25. A servo system must have
    A. Power amplifier to amplify the error
    B. Feedback system
    C. Capacity to control position or its derivative
    D. **All of these**
26. The average value of the output voltage in a step - down DC chopper is given by
    A. $V_o = V_S$
    B. **$V_o = DV_S$**
    C. $V_o = V_S/D$
    D. $V_o = V_S/1-D$
27 Which among the following is the correct statement?
    A. MOSFET is a unipolar, voltage controlled, two terminal device
    B. MOSFET is a bipolar, current controlled, three terminal device
    C. MOSFET is a unipolar, voltage controlled, three terminal device
    D. MOSFET is a bipolar, current controlled, two terminal device
28. The controlling parameter in MOSFET is----------
    A. Vds
    B. Ig
    C. Vgs
    D. Is
29. Find the synchronous speed of an 8-pole 60 Hz AC motor in revolution per minute.
    A .450
    B. 900
    C. 750
    D. 1500
30. If the speed of the rotating magnetic field is Ns rpm and that of the induction motor is N rpm, which of the following is valid?
    A. N > Ns
    B. N = Ns
    C. N< Ns
    D. N is independent of Ns
31. For an alternating current with the frequency 50 Hz, the reactance of the capacitor is 10 ohms. When the frequency is increased to 60 Hz, the reactance of the capacitor becomes _____ ohms.
    A. 7.56
    B. 9.44
    C. 8.33
    D. 6.83
32. To prevent saturation in a magnetic circuit, _____ can be usually inserted.
    A. air gap
    B.magnetic motive force
    C. magnetic field
    D. flux density
33. The function of brushes in a DC generator is
    A. To increase the voltage
    B. To increase the current
    C. **To bring the power developed to the load**
    D. To provide flux density in air gap
34. The material used for yoke of a dc machines is iron to perform
    A. To provide current path
    B. **To provide flux path**
    C. To provide mechanical support
    D. To provide both current and flux path

35. The power rating of the primary and secondary windings of a transformer is ----
A. Same
B. different
C. has no power rating
D. half of the power rating

36. The armature torque of a dc shunt motor depends on
A. Load on the shaft
B. **Armature current**
C. Field current
D. Both field and armature current

37. Why the single phase induction motor is not self starting motor ?
A. The magnitude of the flux produced in the stator is low
B. No voltage is induced in the rotor circuit
C. There is no relative motion between the stator and rotor magnetic fields
D. three- phase flux produced in the stator winding

38. What will happen when the phase sequence of three phase induction motor is changed in stator side?
A. Motor does not run
B. Slip changes
C. **Direction of rotation is reversed**
D. Motor gets heated

39 Which of the following is a characteristic of a capacitor start motor?
A. Has a high starting torque
B. Can be manufactured up to 5 kW
C. Low starting torque
D. It includes high starting torque, good starting and running characteristics

40 Angular displacement between the positive maximum values of two alternating quantities having same frequency is called
A. phase difference
B. phase velocity
C. frequency
D. waveform