

BSNL TTA Question Paper-Electrical Specialization 2007

1. In a D.C. generator, if the brushes are given a small amount of forward shift, the effect of armature is

- a. Totally demagnetizing
- b. Totally magnetizing
- c. Partly demagnetizing and partly cross magnetizing
- d. Totally cross magnetizing

2. The air gap between stator and armature of an electric motor is kept as small as possible

- a. To get a stronger magnetic field
- b. to improve the air circulation
- c. To reach the higher speed of rotation
- d. To make the rotation easier.

3. Two series motors are coupled. One motor runs as generator and other as motor. The friction losses of the two machines will be equal when

- a. Both operates at same voltage
- b. Both have same back emf
- c. Both have same speed
- d. both have same excitation

4. Plugging of D.C. motor is normally executed by

- a. Reversing the field polarity
- b. Reversing the armature polarity
- c. Reversing both the armature and field polarity
- d. Connecting a resistance across the armature.

5. Transformer oil transformer provides

- a. Insulation and cooling
- b. B. Cooling and lubrication
- c. Lubrication and insulation
- d. Insulation, cooling and lubrication

6. Leakage fluxes of transformer may be minimized by

- a. Reducing the magnetizing current to the minimum
- b. Reducing the reluctance of the iron core to the minimum

- c. Reducing the number of primary and secondary turn to the minimum
- d. Sectionalizing and interleaving the primary and secondary windings

7. Electric power is transformed upon one coil to other coil in a transformer

- a. Electrically
- b. Electro Magnetically
- c. Magnetically
- d. Physically

8. The most suitable and economical connection for small high voltage transformer is-

- a. Star- Delta connection
- b. Delta- Delta connection
- c. Delta- Star connection
- d. Star- Star connection

9. An alternator is said to be over excited when it is operating at

- a. Unity power factor
- b. Leading power factor
- c. Lagging power factor
- d. Either lagging or leading power factor

10. In an A.C. machine, the armature winding is kept stationary while the field winding is kept rotating for the following rason

- a. Armature handles very large currents and high voltages
- b. Armature friction involving deep slots to accommodate large coils is easy if armature is kept stationary
- c. Ease of cooling the stator than rotor
- d. None of the above.

11. In a synchronous motor, the torque angle is the

- a. Angle between the rotating stator flux and rotor poles
- b. Angle between the magnetizing current and back emf
- c. Angle between the supply voltage and back emf
- d. None of the above

12. A 3-phase synchronous motor is said to be "floating" when it operates

- a. On no load and without loss
- b. On constantly varying load
- c. On pulsating load
- d. On high load and variable supply voltage

13. Speed of synchronous motor depends upon

- a. Number of poles
- b. Supply frequency
- c. Both (a) and (b)
- d. Neither (a) nor (b)

14. Imbalance in the shaft of an induction motor occurs due to

- a. Slip rings
- b. Overheating of winding
- c. Non uniform of air gap
- d. Rigid consturcion

15. Squirrel cage induction motor has

- a. Zero starting torque
- b. Very small starting torque
- c. Medium starting torque
- d. Very high starting torque

16. The principle of operation of a 3-phase induction motor is similar to that of a

- a. Synchronous motor
- b. Repulsion - start induction motor
- c. Transformer with a shorted secondary
- d. Capacitor - start, induction - run motor

17. The speed/load characteristics of a universal motor are similar to those

- a. D.C. shunt motor
- b. D.C. series motor
- c. A.C. motor
- d. None of the above

18. Single phase A.C. motor generally used for vacuum cleaners is

- a. Universal motor
- b. Repulsion motor
- c. Hysteresis motor
- d. Reluctance motor

19. Buchholz relay is used for the protection of

- a. Switch yard
- b. Transformers
- c. Alternators
- d. Transmission lines

20. The type of braking used in traction system is

- a. Mechanical braking
- b. Electro - pneumatic braking
- c. Vacuum braking system
- d. All the above

21. The function of processing zenger diode in a UJT circuit used for triggering of SCRs is to

- a. Expedite the generation of triggering pulses
- b. Delay the generation of triggering pulses
- c. Provide a constant voltage to UJT to prevent erratic firing
- d. Provide a variable voltage to UJT as the source voltage changes

22. The frequency of a ripple in the output voltage of a 3 - phase semi converter depends upon

- a. Firing angle and load resistance
- b. Firing angle and supply frequency
- c. Firing angle and load inductance
- d. Only on load circuit parameters

23. The SCR is turned off when the anode currents falls below

- a. Forward current rating
- b. Break - over voltage
- c. Holding current
- d. Latching

24. V4 characteristics of emitter of a UJT is

- a. Similar to CE with linear and saturation region
- b. Similar to FET with a linear and pinch of region
- c. Similar to tunnel diode in some respects
- d. Linear between the peak point and valley point

25. A transformer works on

- a. DC
- b. AC
- c. AC & DC both
- d. Neither AC not DC

26. Which of the following device is used in transformer?

- a. Tube light
- b. Electric heater
- c. Mobile phone

d. Rectifier module

27. Earth electrodes can be in the form of

- a. rods or pipes
- b. stripes
- c. plates
- d. any of above

28. Carbon or metal brushes are used in

- a. DC generators only
- b. AC generators only
- c. Both AC & DC generation
- d. None of above

29. Energy is lost due to Joule's heating effects in winding of transformer. This is called

- a. Copper loss
- b. Eddy current loss
- c. Flux loss
- d. None

30. In refrigeration cycle heat is lost in

- a. Cooling coil
- b. Condenser
- c. Compressor
- d. Expansion valve

31. The power factor of AC circuit is

- a. R/X
- b. R/Z
- c. Z/R
- d. Zero

32. Silicon controlled output is good if ripple factor is

- a. Switch
- b. Transformer
- c. Amplifier
- d. None of above

33. The rectifier output is good if ripple factor is

- a. More
- b. Less

- c. Constant
- d. None of above

34. Protective relays can monitor large AC current by means of

- a. Current transformer
- b. Potential transformer
- c. Micro transformer
- d. None of above

35. The combines AM of two similar batteries connected in parallel is:

- a. halved
- b. doubled
- c. remain constant
- d. none of above

36. The current in circuit having 5 V EMI source and 10 Ohm resistance is:

- a. 2 Amp
- b. 50 Amp
- c. 5 Amp
- d. $\frac{1}{2}$ Amp

37. The chopper is a device to change

- a. Voltage
- b. Current
- c. Frequency
- d. None of these

38. The power consumption, in case of centrifugal loads (like pump, fan, blower etc) is proportional to:

- a. speed
- b. square of speed
- c. cube of speed
- d. none of these

39. Which of these need to be measured after rewinding the motor:

- a. no load current
- b. air gap
- c. winding resistance
- d. all of the above

40. Five percent increase in supply frequency will change the synchronous speed of motor by:

- a. -5%
- b. +5%
- c. -10%
- d. +10%

41. Which of the following is the best inverter?

- a. square wave inverter
- b. sine wave inverter
- c. pure sine wave inverter
- d. triangular wave inverter

42. For driving a motor in a tape recorder or record player, the motor used is generally:

- a. a synchronous motor
- b. a hydraulic motor
- c. an induction motor
- d. a dc series motor

43. The DC motor starter used with a constant speed shunt motor is:

- a. 2 point starter
- b. 3 point starter
- c. 4 point starter
- d. 5 point starter

44. A commutator in a DC motor converts

- a. AC to DC
- b. DC to AC
- c. Both AC to DC and DC to AC
- d. None of these

45. Two transformers running in parallel will share the load according to their:

- a. leakage reactance
- b. pu impedance
- c. efficiency
- d. rating

46. The size of the Earth Wire is determined by:

- a. the ampere capacity of the service wires
- b. the atmospheric conditions
- c. the voltage of service wires
- d. none of these

47. The function of lightning arrester is:

- a. to limit the short circuit fault current
- b. to provide path to high voltage surge to earth
- c. to reduce arcing
- d. none of these

48. Surge protector provide:

- a. high impedance to normal voltage
- b. low impedance to surge
- c. both (a) and (b)
- d. none of these

49. Earthing is necessary to give protection against

- a. voltage fluctuation
- b. overloading
- c. danger of electric shock
- d. high temperature of conductors

50. The primary function of fuse is to

- a. protect the appliance
- b. open the circuit
- c. prevent excessive current
- d. protect the line