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 piper

b. stripes

c. plates

d. any of above

28. Carbone 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. ½ 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