

**Sample test paper for tech.-III TM Ftr trade (25% QS Quata)**

**Q.1. Ohm's law is not applicable to**

- (a) semi conductors
- b) D. C. Circuits
- c)small resistors
- d) High Current circuit

**Q.2. Two resistors of same capacity are connected in parallel total resistance of circuit is**

- (a) double
- (b) 1/3
- (c) 1/2
- (d) 1/4

**Q.3. According to Kirchhoff's voltage law the algebraic sum of all IR drops and e.m.f. in any closed loop of a network is always**

- (a) negative
- (b)positive
- (c) Determined by battery emf's
- (d) Zero

**Q.4. which of the following is not a non-linear element ?**

- (a) gas diode
- (b) Heater coil
- (c) tunnel diode
- (d) electric arc

**Q.5. The force between two charges is 120N. if the distance between the charges is double, the force will be-**

- (a) 60N
- (b) 30N
- (c) 40N
- (d)15N

**Q.6. Flemings' Left hand rule is used to find**

- a) direction of magnetic field due to current carrying conductors
- b) direction of flux in a solenoid
- c) direction of force on a current carrying conductor in a magnetic field
- d) polarity of a magnetic pole.

**Q.7. The reference permeability at a vacuum is**

- (a) zero
- (b) Infinity
- (c) 1
- (d) none of above

**Q.8. Point out wrong statement**

Magnetic leakage is undesirable in electric machines because it

- (a) lowers their power efficiency
- (b) increase there cost of manufacture
- (c) leads to their increased weight
- (d) Produces fringing

**Q.9 Conductivity is analogous to**

- (a) retentivity
- (c)permeability
- (b) resistivity
- (d) inductance

**Q.10 The transformer cores operating at microwave frequency range, are usually made of**

- (a)carbon
- (b) copper
- (c)silicon steel
- (d)ferrites.

**Q.11. The inductance of a coil will increase under all the following conditions except**

- (a) when more length for the same number of turns is provided
- (b) when the number of turns of the coil increases
- (c) when more area for each turn is provided
- (d) when permeability of the core increases

**Q.12 When the lead acid cell is fully charged, the electrolyte assumes ..... appearance**

- (a) dull
- (b) reddish
- (c) bright
- (d) milky

**Q.13. Class-'C' insulating materials have properties**

- (a) High temperature stability and high insulation resistance
- (b) Low temperature stability and low insulation resistance
- (c) High rigidity and low weigh
- (d) None of above

**Q.14 Carbon rods are used in wet and dry cells because**

- (a) Carbon rod serves as conductor
- (b) Carbon can resist the attack of battery acid.
- (c) both (a) and (b)
- (d) Carbon is easily available

**Q.15 Superconducting metal in superconducting state has relative permeability of**

- (a) Zero
- (b) one
- (c) more than one
- (d) negative

16 VPI o

f stator of three phase traction motor of WAP 7 Loco is done using,

- (a) Silicone Varnish
- (b) Polyester Varnish
- (c) Polyesterimide Varnish
- (d) Epoxy Varnish

17 A 3-phase 440 V, 50 Hz induction motor has 4% slip. The frequency of rotor current will be

- (a) 50 Hz
- (b) 25 Hz
- (c) 5 Hz
- (d) 2 Hz

18 The low starting torque of a squirrel-cage induction motor is overcome in locomotive

- (a) using high frequency power supply to the traction motor
- (b) using high voltage power supply to the traction motor
- (c) using low frequency power supply to the traction motor
- (d) using high current power supply to the traction motor

19 If S1 is the number of slots in stator, S2 is the no. of slots in rotor and P is the no. poles then to prevent asynchronous cogging in an induction motor

- (a)  $S2 \leq 1.25S1$
- (b)  $S2 - S1 \neq P/2$
- (c)  $S1 = S2$
- (d)  $S2 \leq 1.25S1$  and  $S2 - S1 \neq P/2$

*ms*

- 20 The good power factor of an induction motor can be achieved if the average flux density in the air gap is
  - (a) Infinity
  - (b) Large
  - (c) Absent
  - (d) Small
  
- 21 At no-load, the Iron loss of a 3-phase induction motor is
  - (a) Practically Zero
  - (b) Large
  - (c) Small
  - (d) None of the above
  
- 22 If  $N_s$  and  $N$  are the speeds of rotating field and rotor respectively, then ratio rotor input/rotor output is equal to.
  - (a)  $N_s/N$
  - (b)  $N/N_s$
  - (c)  $N_s - N$
  - (d)  $N - N_s$
  
- 23 Temperature rating of Class C insulation is
  - (a) 180 Deg.C
  - (b) 200 Deg.C
  - (c) 220 Deg.C
  - (d) 155 Deg.C
  
- 24 Locked rotor test is done
  - (a) upto rated current of the three phase traction motor
  - (b) at rated voltage of the traction motor
  - (c) at rated voltage and current of the traction motor
  - (d) to determine total losses in the traction motor
  
- 25 Using no load test at various voltages of the traction motor, we can determine
  - (a) noise level in the motor
  - (b) core, friction, windage and copper losses
  - (c) vibration level in the motor
  - (d) temperature rise in the traction motor