[SSC – JE (ME) MISCELLENIOUS]

1. Motor used for elevators is generally
   a) synchronous motor
   b) universal motor
   c) induction motor
   d) reluctance motor

   [2008]

Ans: c)

2. The transformer used for AC welding sets is
   a) booster type
   b) step up type
   c) steo down type
   d) equal turn ratio type

   [2008]

Ans: c)

3. A relay performs the function of
   a) fault isolation
   b) fault detection
   c) fault prevention
   d) all the above

   [2008]

Ans: b)

4. HRC fuse provides best protection against
   a) open circuit
   b) overload
   c) reverse current
   d) short circuit

   [2008]

Ans: d)

5. The scale of moving iron (M.I.) instrument is
   a) uniform   b) cramped
   c) linear   d) all the above

   [2008]

Ans: b)

6. The power factor of industrial loads is generally
   a) unity   b) lagging
   c) leading   d) zero

   [2008]

Ans: b)

7. The value of demand factor is
   a) less than one   b) greater than one
   c) equal to one   d) zero

   [2008]

Ans: a)

8. The slip of an induction motor under full load condition is about
   a) 0.1   b) 0.03
   c) 0.2   d) 0.8

   [2008]

Ans: b)

9. The motor used in ceiling fans is
   a) Resistance split phase motor
   b) Capacitor start motor
   c) Capacitor start capacitor run motor
   d) Slip ring motor

   [2008]

Ans: c)

10. A dynamometer type wattmeter responds to the
    a) average value of active power
    b) average value of reactive power
    c) peak value of active power
    d) peak value of reactive power

    [2008]

Ans: a)

11. Which of the following meters is an integrating type instrument?
    a) Ammeter   b) Voltmeter
    c) Wattmeter   d) Energy meter

    [2008]

Ans: d)

12. For battery charging, which of the following DC generators of used?
    a) DC series generator
    b) DC shunt generator
    c) Short shunt generator
    d) Long shunt compound generator

    [2008]

Ans: b)

13. The no load speed of DC series motor is
    a) very small   b) medium
    c) very high   d) small

    [2008]

Ans: c)

14. A circuit component that opposes the change in circuit voltage is
    a) resistance   b) capacitance
    c) inductance   d) all the above

    [2008]

Ans: b)

15. A series resonant circuit implies

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a) zero power factor and maximum current
b) unity power factor and maximum current
c) unity power factor and minimum current
d) zero power factor and minimum current

[2008]

Ans: b)

16. A current $i = (10 + 10 \sin t)$ amperes is passed through moving iron type ammeter. Its reading will be

a) zero b) $10A$
c) $\sqrt{150}\,A$ d) $\sqrt{2}A$

[2008]

Ans: c)

17. A DC ammeter resistance of 0.1Ω and current range is $0 – 100A$. if the range is to be extended to $0 – 500A$, then meter requires shunt resistance of

a) 0.001Ω b) 0.011Ω
c) 0.025Ω d) $1.0\,\Omega$

[2008]

Ans: c)

18. Mho relay is used to protect?
a) long transmission line
b) medium length line
c) short length line
d) all the above

[2008]

Ans: a)

19. The moving coil in a dynamometer wattmeter is connected
a) in series with the fixed coil
b) across the supply
c) in series with the load
d) any one of the above

[2009]

Ans: b)

20. A body of weight 30N rests on a horizontal floor. A gradually increasing horizontal for applied to the body which just starts moving when the force is 9N. The coefficient of friction between the body and the floor will be

a) 10/3 b) 3/10
c) 1/3 d) 1/9

[2014]

Ans: b)

21. A body of weight W is placed on a rough inclined plane. The inclination of the plane with the horizontal is less than the angle of friction. The body will
a) be the equilibrium
b) move downwards
c) move upwards
d) none of the above

[2014]

Ans: a)

22. A ball is dropped vertically downwards, it hits the floor with a velocity of 9 m/s and bounces to distance of 1.2 m. Coefficient of restitution between the floor and the ball is

a) 0.54 b) zero
c) 1 d) 0.27

[2014]

Ans: a)

23. The direction of frictional force acting on a body which can slide on a fixed surface is
a) in the direction of motion
b) normal to the direction of motion
c) unpredictable
d) opposite to the direction of motion

[2014]

Ans: d)

24. For any given power and permissible shear stress, the rotational speed of shaft and its diameter are correlated by the expression

a) $ND^3 = $ constant
b) $ND^2 = $ constant
c) $ND = $ constant
d) $\sqrt{ND} = $ constant

[2014]

Ans: a)

25. Which law of motion (of Newton) gives the measure of force?
a) Newton's first law
b) Newton's second law
c) Newton's third law
d) None of these

[2014]

Ans: b)

26. The friction between objects that are stationary is called
a) static friction
b) rolling friction
c) kinetic friction

d) dynamic friction

[2014]

Ans: a)

27. The angle turned by a wheel while it starts from rest and accelerates at constant rate of 3 rad/s^2 for an interval of 20 sec is

a) 900 rad   b) 600 rad
c) 1200 rad   d) 300 rad

[2014]

Ans: b)

28. Which of the following theorem is sued for the equilibrium of the body applied with three concurrent coplanar forces?

a) Varrignon's theorem
b) Lame's theorem
c) Pythagoras theorem
d) Hamilton theorem

[2015]

Ans: b)

29. A body of mass 5 kg accelerated at a constant rate of 2 m/s^2 on a smooth horizontal surface due to an external force acting at 30° with horizontal. The magnitude of the force is

a) 10 cos 30 N   b) 10 sin 30 N
c) 10/cos 30 N   d) 10/sin 30 N

[2015]

Ans: b)

30. What are the equilibrium conditions to be satisfied for a particle applied with a system of non-coplanar concurrent forces?

a) $\Sigma F_X = 0$ and $\Sigma F_Y = 0$

b) $\Sigma F_X = 0, \Sigma F_Y = 0$ and $\Sigma M_{Z-axis} = 0$

c) $\Sigma F_X = 0, \Sigma F_Y = 0 \; \Sigma F_Z = 0$

d) $\Sigma F_X = 0, \Sigma F_Y = 0, \Sigma F_Z = 0 \; \Sigma M_X = 0, \Sigma M_Y = 0$ and $\Sigma m_Z = 0$

[2015]

Ans: d)