

Electrical



1. The power consumed in a circuit element will be least when the phase difference between the current and voltage is
 - (A) 180°
 - (B) 90°
 - (C) 60°
 - (D) 0°

2. Form Factor is the ratio of
 - (A) Average value/r.m.s. value
 - (B) Average value/peak value
 - (C) r.m.s. value/average value
 - (D) r.m.s. value/peak value

3. Capacitive reactance is more when
 - (A) Capacitance is less and frequency of supply is less
 - (B) Capacitance is less and frequency of supply is more
 - (C) Capacitance is more and frequency of supply is less
 - (D) Capacitance is more and frequency of supply is more

4. Pure inductive circuit
 - (A) Consumes some power on average
 - (B) Does not take power at all from a line
 - (C) Takes power from the line during some part of the cycle and then returns back to it during other part of the cycle
 - (D) None of the above

5. Power factor of the following circuit will be zero
 - (A) Resistance
 - (B) Inductance
 - (C) Capacitance
 - (D) Both (B) and (C)

6. If you wish to increase the amount of current in a resistor from 120 mA to 160 mA by changing the 24 V source, what should the new voltage setting be?
 - (A) 8 V
 - (B) 320 V
 - (C) 3.2 V
 - (D) 32 V

7. When 12 V are applied across a 68Ω resistor, the current is
 - (A) 816 mA
 - (B) 17.6 mA

Electrical



- (C) 176 mA
- (D) 8.16 mA

8. What is the approximate resistance of a rheostat if the voltage source is 18 V and the current is 220 mA?

- (A) 8.2 k Ω
- (B) 820 Ω
- (C) 8.2 Ω
- (D) 82 Ω

9. The formula for finding resistance when current and voltage are known is $R = I/V$.

- (A) True
- (B) False

10. Twelve volts are applied across a resistor. A current of 3 mA is measured. What is the value of the resistor?

- (A) 4 Ω
- (B) 400 Ω
- (C) 4 k Ω
- (D) 4.4 Ω

11. As the load is applied to a synchronous motor, the motor takes more armature current because

- (A) The increased load has to take more current
- (B) The rotor by shifting its phase backward causes motor to take more current
- (C) The back e.m.f. decreases causing an increase in motor current
- (D) The rotor strengthens the rotating field causing more motor current

12. A synchronous motor can be made self starting by providing

- (A) Damper winding on rotor poles
- (B) Damper winding on stator
- (C) Damper winding on stator as well as rotor poles
- (D) None of the above

13. Riunting in a synchronous motor takes place

- (A) When supply voltage fluctuates
- (B) When load varies
- (C) When power factor is unity
- (D) Motor is under loaded

14. Synchronous motors are

- (A) Not-self starting

Electrical



- (B) Self-starting
 - (C) Essentially self-starting
 - (D) None of the above
15. An over excited synchronous motor is used for
- (A) Fluctuating loads
 - (B) Variable speed loads
 - (C) Low torque loads
 - (D) Power factor corrections
16. A 3-phase 4-wire system is commonly used on
- (A) Primary transmission
 - (B) Secondary transmission
 - (C) Primary distribution
 - (D) Secondary distribution
17. A conductor, due to sag between two supports, takes the form of
- (A) Semicircle
 - (B) Triangle
 - (C) Ellipse
 - (D) Catenary
18. A circuit is disconnected by isolators when
- (A) Line is energized
 - (B) There is no current in the line
 - (C) Line is on full load
 - (D) Circuit breaker is not open
19. The use of strain type insulators is made where the conductors are
- (A) Dead ended
 - (B) At intermediate anchor towers
 - (C) Any of the above
 - (D) None of the above
20. Constant voltage transmission entails the following disadvantage
- (A) Large conductor area is required for same power transmission
 - (B) Short-circuit current of the system is increased
 - (C) Either of the above
 - (D) None of the above
21. The thermal efficiency of the engine with condenser as compared to without condenser, for a given pressure and temperature of steam, is

Electrical



- (A) Higher
 - (B) Lower
 - (C) Same as long as initial pressure and temperature is unchanged
 - (D) None of the above
22. In a regenerative surface condenser
- (A) There is one pump to remove air and condensate
 - (B) There are two pumps to remove air and condensate
 - (C) There are three pumps to remove air, vapor and condensate
 - (D) There is no pump; the condensate gets removed by gravity
23. Load center in a power station is
- (A) Center of coal fields
 - (B) Center of maximum load of equipments
 - (C) Center of gravity of electrical system
 - (D) None of the above
24. In coal preparation plant, magnetic separators are used to remove
- (A) Dust
 - (B) Clinkers
 - (C) Iron particles
 - (D) Sand
25. Underfeed stokers work best for _____ coals high in volatile matter and with caking tendency
- (A) Anthracite
 - (B) Lignite
 - (C) Semi-bituminous and bituminous
 - (D) All of the above
26. The magnitude of the induced e.m.f. in a conductor depends on the
- (A) Flux density of the magnetic field
 - (B) Amount of flux cut
 - (C) Amount of flux linkages
 - (D) Rate of change of flux-linkages
27. For a purely inductive circuit which of the following is true?
- (A) Apparent power is zero
 - (B) Relative power is zero
 - (C) Actual power of the circuit is zero
 - (D) Any capacitance even if present in the circuit will not be charged

Electrical



28. Two coils have inductances of 8 mH and 18 mH and a coefficient of coupling of 0.5. If the two coils are connected in series aiding, the total inductance will be
- (A) 32 mH
 - (B) 38 mH
 - (C) 40 mH
 - (D) 48 mH
29. A conductor 2 meters long moves at right angles to a magnetic field of flux density 1 tesla with a velocity of 12.5 m/s. The induced e.m.f. in the conductor will be
- (A) 10 V
 - (B) 15 V
 - (C) 25 V
 - (D) 50 V
30. An average voltage of 10 V is induced in a 250 turns solenoid as a result of a change in flux which occurs in 0.5 second. The total flux change is
- (A) 20 Wb
 - (B) 2 Wb
 - (C) 0.2 Wb
 - (D) 0.02 Wb
31. The kinetic energy of a bounded electron is
- (A) Less than that of unbounded electron
 - (B) Greater than that of unbounded electron
 - (C) Equal to that of unbounded electron
 - (D) Infinite
32. Superconductors are becoming popular for use in
- (A) Generating very strong magnetic field
 - (B) Manufacture of bubble memories
 - (C) Generating electrostatic field
 - (D) Generating regions free from magnetic field
33. Solder is an alloy of
- (A) Copper and aluminium
 - (B) Tin and lead
 - (C) Nickel, Copper and zinc
 - (D) Silver, copper and lead
34. Which of the following affect greatly the resistivity of electrical conductors?
- (A) Composition
 - (B) Pressure

Electrical



- (C) Size
- (D) Temperature

35. The resistivity of a metal is a function of temperature because

- (A) The amplitude of vibration of the atoms varies with temperature
- (B) The electron density varies with temperature
- (C) The electron gas density varies with temperature
- (D) None of the above

36. A control system working under unknown random actions is called

- (A) Computer control system
- (B) Digital data system
- (C) Stochastic control system
- (D) Adaptive control system

37. By which of the following the control action is determined when a man walks along a path?

- (A) Brain
- (B) Hands
- (C) Legs
- (D) Eyes

38. As a result of introduction of negative feedback which of the following will not decrease?

- (A) Band width
- (B) Overall gain
- (C) Distortion
- (D) Instability

39. In a control system the output of the controller is given to

- (A) Final control element
- (B) Amplifier
- (C) Comparator
- (D) Sensor

40. A signal other than the reference input that tends to affect the value of controlled variable is known as

- (A) Disturbance
- (B) Command
- (C) Control element
- (D) Reference input

Correct Answer