

1. Earth fault relays are

- a) directional relays
- b) non-directional relays
- c) short operate time relays
- d) long operate time relays

Ans: b

2. The rating of fuse is expressed in terms of

- a) amperes
- b) volts
- c) VAR
- d) KVA

Ans: a

3. By burden of the relay we mean

- a) volt-ampere rating of relay
- b) current rating of relay
- c) voltage rating of relays
- d) watt rating of relays

Ans: a

4. Reactance relays are employed for phase fault in

- a) long time
- b) medium line
- c) short line
- d) any of these

Ans: c

5. The ratio of line-to-line capacitance and line-to-neutral capacitance is

- a) $\frac{1}{2}$
- b) $\frac{1}{4}$
- c) 2
- d) 4

Ans: a

6. The material commonly used for sheaths of underground cable is

- a) lead
- b) steel
- c) rubber
- d) copper

Ans: a

7. The recovery voltage will be maximum for power factor of

- a) zero
- b) 0.5
- c) 0.707
- d) unity

Ans: a

8. An air blast circuit breaker is usually employed for

- a) instantaneously voltage
- b) intermittent duty
- c) repeated duty
- d) short duty

Ans: c

9. Equation of continuity of flow is based on the principle of conservation of

- a) mass
- b) force
- c) momentum
- d) energy

Ans: a

10. Pitot tube is used for the measurement of

- a) pressure
- b) flow
- c) velocity
- d) discharge

Ans: c

11. In a centrifugal pump, the liquid enters the pump

- a) at the top
- b) at the bottom
- c) at the centre
- d) none of the above

Ans: c

12. In reaction turbine

- a) kinetic energy is appreciable as the fluid leaves the runner and enters the draft tube
- b) the vanes are partly filled
- c) total energy of fluid is converted to kinetic energy in the runner
- d) it is exposed to the atmosphere

Ans: a

13. For the same compression ratio

- a) Otto cycle is more efficient than the Diesel cycle
- b) Diesel cycle is more efficient than the Otto cycle
- c) Both Otto and Diesel cycles are equally efficient
- d) Compression ratio has nothing to do with efficiency

Ans: a

14. Water tube boilers are those in which

- a) flue gases pass through tubes and water around it
- b) water passes through the tubes
- c) work is done during adiabatic expansion
- d) there is change in enthalpy

Ans: b

15. An ideal flow of any fluid must satisfy

- a) Pascal's law
- b) Newton's law of viscosity
- c) Boundary layer theory
- d) Continuity equation

Ans: d

16. The flow which neglects changes in a transverse direction is known as

- a) one-dimensional flow
- b) uniform flow
- c) steady flow
- d) turbulent flow

Ans: a

17. Cam size depends upon
a) base circle b) pitch circle
c) prime circle d) outer circle

Ans: a

18. Hartnell governor could be classified under the head of

- a) inertia type governors
b) pendulum type governors
c) centrifugal type governors
d) dead weight type governors

Ans: c

19. Which of the following clutches is positive type?

- a) Cone b) Disc
c) Jaw d) Centrifugal

Ans: c

20. Creep in belt is due to
a) material of the pulley
b) material of the belt
c) larger size of driver pulley
d) uneven extensions and contractions due to varying tension

Ans: d

21. For simple supported beam having load at the centre the bending moment will be

- a) minimum at the support
b) minimum at the centre
c) maximum at the support
d) none of the above

Ans: a

22. The effective length of the column with one end fixed and the other end free is

- a) its own length b) twice its length
c) half its length d) none of the above

Ans: b

23. Kinetic pairs are those which have two elements that

- a) have line contact
b) have surface contact
c) permit relative motion
d) are held together

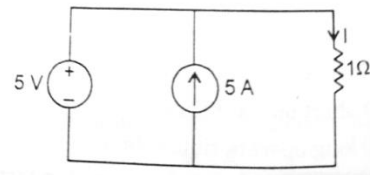
Ans: c

24. Governor is used in automobile to

- a) decrease the variation of speed
b) control $\delta N / \delta t$
c) control δN
d) All the above

Ans: c

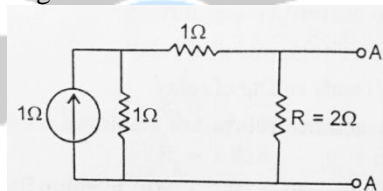
25. The value of current I flowing in the 1Ω resistor in the circuit shown in the figure below will be



- a) 10 A b) 6 A c) 5 A d) Zero

Ans: c

26. In the figure shown below, if we connect a source of 2-V, with internal resistance of 1Ω at AA' with positive terminal at A, then current through R is



- a) 2 A b) 1.66A
c) 1 A d) 0.625A

Ans: d

27. The curve representing Ohm's law is

- a) Linear b) Hyperbolic
c) Parabolic d) Triangular

Ans: a

28. Specific resistance of a conductor depends upon

- a) Dimension of the conductor
b) Composition of conductor material
c) Resistance of the conductor
d) Both a) and b)

Ans: d

29. Super-position theorem is essentially based on the concept of

- a) Reciprocity b) Linearity
c) Duality d) Non-linearity

Ans: b

30. If a 500KVA, 200Hz transformer is operated at 50Hz, its KVA rating will be

- a) 2000 KVA b) 125 KVA
c) 250 KVA d) 1000 KVA

Ans: b

31. The angle between induced emf and terminal voltage on no-load for a single phase alternator is

- a) 180° b) 90° c) 0° d) 270°

Ans: c

32. A salient pole synchronous generator connected to an infinite bus power will deliver maximum power at a power angle of

- a) $\delta = 0^\circ$ b) $\delta = 90^\circ$
c) $\delta = 45^\circ$ d) $\delta = 30^\circ$

Ans: b

33. Starting torque of synchronous motor is

- a) very low b) zero
c) very high d) half-full torque

Ans: b

34. The power factor at which transformer operates

- a) is unity
b) is 0.8 lag
c) is 0.8 lead
d) depends upon the power factor of the load

Ans: d

35. The efficiency of a 100 KVA transformer is 0.98 at full as well as half load. For this transformer at full load the copper loss

- a) is less than core loss
b) is equal to core loss
c) is more than core loss
d) all the above

Ans: c

36. Which of the following will improve the mutual coupling between primary and secondary circuit?

- a) Transformer oil of high breakdown voltage
b) High reluctance magnetic core
c) Winding material of high resistivity
d) Low reluctance magnetic core

Ans: d

37. High leakage transformers are of

- a) small voltage ampere rating
b) high voltage ampere rating
c) low voltage rating
d) high voltage rating

Ans: a

38. The starting torque of a 3-phase induction motor varies as

- a) V^2 b) V c) \sqrt{V} d) $\frac{1}{V}$

Ans: a

39. In a 3-phase induction motor, the mechanical power developed; in terms of air gap power P_g is

- a) $(1 - S)P_g$ b) $P_g S$
d) $\frac{P_g}{1 - S}$ d) $\frac{P_g}{S}$

Ans: a

40. The negative phase sequence in a 3-phase synchronous motor exists when the motor is

- a) under-load
b) over-loaded
c) supplied with unbalanced voltage
d) hot

Ans: c

41. A centre zero ammeter connected in the rotor circle of a 6 pole, 50 Hz induction motor makes 30 oscillation in one minute. The rotor speed is

- a) 670 rpm b) 990 rpm
c) 1010 rpm d) 1030 rpm

Ans: b

42. The permissible variation of frequency in power system P_s is

- a) $\pm 1\%$ b) $\pm 3\%$ c) $\pm 5\%$ D) $\pm 10\%$

Ans: b

43. For coding of large size generators hydrogen is used because

- a) it offers reduced fire risk
b) it is light in weight
c) it is of high thermal conductivity
d) all the above

Ans: d

44. The connected load of a consumer is 2 kW and his maximum demand is 1.5 kW. The demand factor of the consumer is

- a) 0.75 b) 0.375 c) 1.33 d) 1

Ans: a

45. To meet the reactive power requirement at load centers usually

- a) shunt capacitors are used
b) series capacitors are used
c) shunt reactors are used
d) tap changing transformers are used

Ans: a

46. The power factor will be leading in case of

- a) Dielectric heating
b) Resistance heating
c) Inductance heating
d) All the above

Ans: a

47. First law of thermodynamics furnishes the relationship between

- a) heat and work
- b) heat, work and properties of the system
- c) various properties of the system
- d) various thermodynamic processes

Ans: b

48. Which instrument has the lowest resistance?

- a) ammeter
- b) voltmeter
- c) megger
- d) frequency meter

Ans: a

49. 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

Ans: b

50. Triple point of a pure substance is a point at which

- a) liquid and vapour exist together
- b) solid and liquid exist together
- c) solid and vapour exist together
- d) solid, liquid and vapour phase exist together

Ans: d

51. Which of the following is not an internal combustion engine?

- a) 2-stroke petrol engine
- b) 4-stroke petrol engine
- c) diesel engine
- d) steam engine

Ans: d

52. Change of entropy depends upon

- a) change of mass
- b) change of temperature
- c) change of specific heat
- d) change of heat

Ans: d

53. Thermal plant works on

- a) Carnot cycle
- b) Joule cycle
- c) Rankine cycle
- d) All the above

Ans: c

54. Hooke's law holds good upto

- a) yield point
- b) limit of proportionality
- c) breaking point
- d) elastic limit

Ans: b

55. The percentage reduction in area in case of cast iron when it is subjected to tensile test is of the order of

- a) 0%
- b) 10%
- c) 20%
- d) 25%

Ans: a

56. A cantilever beam is deflected by d due to help P . If load is doubled, then deflection compared to earlier case will be changed by a factor of:

- a) 2
- b) $\frac{1}{2}$
- c) $\frac{1}{8}$
- d) 8

Ans: a

57. Principle plane is one which carries

- a) no shear stress
- b) maximum shear stress
- c) no normal stress
- d) maximum resultant of stresses

Ans: a

58. A universal dividing head is used to perform a milling operation by

- a) plain indexing
- b) direct indexing
- c) differential indexing
- d) compound indexing

Ans: c,d

59. In grinding operation, for grinding harder material

- a) coarse grain size is used
- b) fine grain size is used
- c) medium grain size is used
- d) any grain size may be used

Ans: b

60. When turning long shaft on a lathe, its bending can be prevented by

- a) running the shaft at low speed
- b) using high speed
- c) using sturdy machine
- d) using steady rest

Ans: d

61. The operation of sharpening a grinding wheel is called

- a) truing
- b) dressing
- c) aligning
- d) balancing

Ans: b

62. In which of the following operations on lathe, will the spindle be minimum?

- a) Knurling b) Fine finishing
c) Taper turning d) Thread cutting

Ans: _

63. For drilling operation, the cylindrical job should always be clamped on a

- a) collect b) socket
c) jaw d) V-block

Ans: c

64. Which of the following machines does not require quick return mechanism?

- a) Slotter b) Planer
c) Shaper d) Broaching

Ans: a

65. Milling machine is classified as horizontal or vertical type, depending on the position of

- a) spindle b) work piece
c) milling cutter d) work table or bed

Ans: a

66. The taper provided on pattern for its easy and clean withdrawn from the mould is called

- a) taper allowance
b) draft allowance
c) distortion allowance
d) pattern allowance

Ans: b

67. Which of the following is not a casting process?

- a) Carthias process
b) Extrusion
c) Semi-centrifuge method
d) Slush process

Ans: b

68. In arc welding, arc is created between the electrode and work by

- a) flow of current
b) voltage
c) material characteristics
d) contact resistance

Ans: d

69. Oxygen to acetylene ratio in case of neutral flame is

- a) 0.8 : 1.0 b) 1 : 1
c) 1.2 : 1 d) 2 : 1

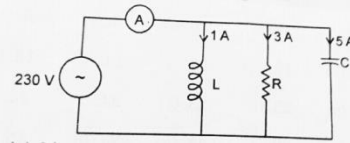
Ans: _

70. In an R-L-C circuit susceptance is equal to

- a) $\frac{1}{X}$ b) $\frac{1}{R}$ c) $\frac{R}{Z^2}$ d) $\frac{X}{Z^2}$

Ans: a,d

71. The current read by the ammeter A in the AC circuit shown in following figure is



- a) 9A b) 5A c) 3A d) 1A

Ans: b

72. A 4-pole generator with 16 coils has a two layer lap winding. The pole pitch is

- a) 32 b) 16 c) 8 d) 4

Ans: d

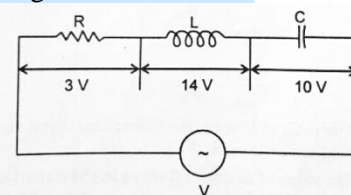
73. Two coupled coils with $L_1 = L_2 = 0.6$ H have a coupling coefficient of $K = 0.8$. The turn ratio

$\frac{N_1}{N_2}$ is

- a) 4 b) 2 c) 1 d) 0.5

Ans: c

74. The voltage across the various elements are marked, as shown in the figure given below. The input voltage is



- a) 27V b) 24V c) 10V d) 5V

Ans: d

75. The principle of dynamically induced emf is utilized is:

- a) Choke b) Transformer
c) Thermocouple d) Generator

Ans: b