Practice Set -1 (SSA/ JPA - PSPCL)

70 Technical Question

Time : 1 hour and 15 minutes

1. Which one of the following is used as a passive-component in electric circuits?
   (A) Resistor (B) Transistor
   (C) Tunnel diode (D) Vaccum triode

2. The length of a conductor is doubled, then its resistance will be :
   (A) Became same (B) Became halfed
   (C) Became doubled (D) Four times increased

3. The defects of a primary cell is :
   (A) Sulfation and buckling (B) Local action and polarization
   (C) Sulphation and local action (D) Buckling and polarization

4. The insulator used to separate commutator segment is :
   (A) Asbestos (B) PVC
   (C) Mica (D) Wood

5. Energy stored in a capacitor is :
   (A) $E=\frac{1}{2}CV^2$ (B) $E=\frac{1}{2}EA^2$
   (C) $E=\frac{1}{2}\times\frac{D^2}{E}$ (D) $E=\frac{\theta}{V}$

6. The shaft torque can be calculated by the formula :
   (A) $0.159\phi ZIa$ (B) $\frac{735.5\times BHP}{2\pi N}$
   (C) $0.159\frac{Eb\times Ia}{N}$ (D) none of the above

7. What is the purpose of retardation test?
   (A) Determining copper loss of series motor
   (B) Determining copper loss of shunt motor
   (C) Determining stray loss of series motor
   (D) Determining stray loss of shunt motor

8. The input signal to an amplifier having a gain of 200 is gives 2 V output. The value of input voltage is :

(A) $100\cos(313t+180^\circ)$ (B) $100\cos(313t)$

(C) $100\cos(313t+90^\circ)$ (D) $200\cos(493t)$

9. The operating temperature of carbon filament lamps are :

(A) 3655°K (B) 3172°K

(C) 2972°K (D) 2073°K

10. The motor used in a ceiling fan is :

(A) Split phase motor (B) Capacitor start motor

(C) Shaded pole motor (D) AC series motor

11. The Thevenin-Norton equivalent of a network can be found :

(A) if it contains voltage sources only

(B) if it contains current sources only

(C) if it contains voltage/current sources but not dependent sources

(D) even if it contains voltage/current sources and or dependent sources

12. Which type of file is available in half round shape?

(A) Bastard file (B) Rasp cut file

(C) Double cut file (D) Curved cut file

13. The direction of rotation of a motor is determined by :

(A) Fleming Right Hand Rule (B) Amperes Right Hand Rule

(C) Flemings Left Hand Rule (D) Cork Scrue Rule

14. The fusing factor of HRC fuse will be :

(A) 1.1 (B) 1.4

(C) 1.6 (D) 1.11

15. A coil of 1000 turns on a core would create a fleux of two m Webber when carrying a current of 1 A. The energy stored in the magnetic field is

(A) $\frac{1}{4}$ joule (B) $\frac{1}{2}$ joule

(C) 1 joule (D) 2 joule

16. Avalanche break down in a semi conductor diode occures – when?

(A) forward bias exceeds a certain value

(B) the potential value is reduced to zero

(C) forward current exceeds a certain value

(D) a reverse bias exceeds a certain value

17. At which length do you have to change the brushes of a DC machine?

(A) $\frac{1}{2}$ of original length (B) $\frac{2}{3}$ of original length

(C) $\frac{1}{3}$ of original length (D) $\frac{3}{4}$ of original length

18. The primary and secondary connection of a distribution transformer is :

(A) primary and secondary star (B) primary and secondary delta

(C) primary delta, secondary star (D) primary star secondary delta

19. Electric field intensity is :

(A) scalar quantity (B) phasor quantity

(C) vector quantity (D) none of the above

20. The speed of a 50 Hrtz Three Phase Induction Motor at full load condition is 720 RPM, the number of poles of the motor is :

(A) 12 (B) 8

(C) 6 (D) 4

21. Water heater has minimum insulation resistance of :

(A) 1 mega ohm (B) 2 mega ohm

(C) 0.5 mega ohm (D) 0.25 mega ohm

22. The function of controll grid in a pentode tube is :

(A) to accilarate the electrons emitted from cathode

(B) to controll the secondary emission from the plate

(C) to collect electrons from the space charge

(D) to controll the number of electrons moving from cathode to plate

23. A 40 w lamp is connected across a 240 volt supply what is the resistance of the supply?

(A) 14400 Ω (B) 1440 Ω

(C) 144 Ω (D) 14.4 Ω

24. The rotor of a three phase induction motor is made up of laminated cores because :

(A) to reduce eddy current loss
(B) to reduce hysterisis loss
(C) to reduce copper loss
(D) all the above

25. A DC Ampere hour meter can be worked on the effect of :

(A) Magnetic effect
(B) Electro dynamic effect
(C) Electro magnetic effect
(D) Chemical effect

26. The colour of lime light emitted by zinc-silicate is :

(A) Blue
(B) Pink
(C) Green
(D) Yellow

27. An alternating current has a maximum value of 120 Ampere. What is the instantaneous value after 1/360 second?

(A) 1039 A
(B) 103.9 A
(C) 10.39 A
(D) 1.039 A

28. The curve representing ohms law is :

(A) Parabola
(B) Hyperpola
(C) Sine function
(D) Linear

29. The maximum permissible load in a lighting-sub circuit is :

(A) 800 watts
(B) 850 watts
(C) 750 watts
(D) 900 watts

30. The foam factor of a sine wave is :

(A) $\frac{\pi}{\sqrt{2}}$
(B) $\frac{\pi}{2\sqrt{2}}$
(C) $\frac{\sqrt{2}}{\pi}$
(D) $\frac{2\sqrt{2}}{\pi}$

31. Rating on a capacitor are given as 25 micro farad, 12 V also a plus sign written near one of its terminals from this information we can definitely say that the capacitor is :

(A) Electrolytic capacitor
(B) Mica capacitor
(C) Ceramic capacitor
(D) Paper capacitor

32. A rotating part of any alternator will be having :

(A) split rings
(B) commutator
(C) slip rings
(D) brushes

33. The distance between clips in vertical runs shall not exceed :

(A) 10 cm (B) 15 cm

(C) 20 cm (D) 25 cm

34. The colour banks on a fixed carbon resistor are brown, red, and black respectively its value is :

(A) 12 Ω (B) 120 Ω

(C) 21 Ω (D) 210 Ω

35. What is the dielectric constant value of rubber?

(A) 2.5 (B) 4

(C) 1.5 (D) 6.7

36. The number of parallel paths in a wave wound generator is :

(A) equal to number of poles (B) four

(C) six (D) two

37. The practical unit of heat is expressed as :

(A) Calories (B) Centigrade

(C) Joule (D) Newton

38. Those alternating wave form which deviate from the ideal sine wave is known as :

(A) Saw-Toothed wave form (B) Triangular wave form

(C) Square wave form (D) Distorted wave form

39. The effective turn ratio of the induction machine stator and rotor is :

(A) the ordinary ratio of turns

(B) the ratio of turns-modified by the winding factor of the stator and rotor

(C) a variable related to the rotor speed

(D) the ratio of turns modified by the rotor resistance

40. A wire measuring 1 mm is diameter has a cross sectional area of :

(A) 1 mm^2 (B) 1 cm^2

(C) 0.87 mm^2 (D) 0.78 mm^2

41. The type of insulator used in stay wire is :

(A) pin type (B) suspension type

(C) shackle type (D) egg type

42. A sheathed 3 core cable is to be used as a power cord for connecting heating appliances. The type of power cord is used in electric iron :

(A) PVC sheathed
(B) Lead sheathed
(C) Silk-cotton-bridle
(D) Rubber sheathed

43. The no load current of an induction motor is ———— approximately.

(A) 40% of full load current
(B) 10% of full load current
(C) 20% of full load current
(D) 100% of full load current

44. The disadvantage of spring control over gravity control :

(A) it does not give a uniform speed
(B) it can only be used in parallel position
(C) it deteriorates with time
(D) all of the above

45. The operation of a JFET involves :

(A) a flow of minority carriers
(B) recombination
(C) flow of majority carriers
(D) negative resistance

46. The simplest way of varying the flux produced by an electro magnet is :

(A) increasing and decreasing the number of turns of the coil
(B) using an exciting coil with number of tapings
(C) varying core position for the exciting coil
(D) varying the current through the exciting coil

47. The instrument used for measuring medium range of resistance is :

(A) series type ohm meter
(B) wheat stone bridge
(C) shunt type ohm meter
(D) megger

48. If a three phase motor operates in single phasing it will altimately make the motor :

(A) to burn out
(B) to carry no load
(C) to run with tripple speed
(D) not to run efficiently

49. The brief period during which coil remains short circuited is known as :

(A) neutralising period
(B) cross magnatising period
(C) cummulation period
(D) progressive period

50. The reciprocal of impedence is known as :

(A) admittance
(B) conductance
(C) susceptance
(D) resistance

51. For generating a 1 kilo Hertz note, the most suitable circuit is :

(A) Hartly oscillator
(B) Colpits oscillator
(C) Tuned-collector oscillator
(D) Wein bridge oscillator

52. When the motor is switched to star possision-through a star delta stater the stator current will become :

(A) $\sqrt{3}$ times the current taken in delta position
(B) the times the current taken in delta position
(C) $1/\sqrt{3}$ times the current taken in delta position
(D) $\frac{1}{3}$ times the current taken in delta position

53. Armouring is provided in the cables to safe guard against :

(A) moisture entry
(B) mechanical injury
(C) white out attack
(D) bursting on failure

54. The transducer used in a strain guage is :

(A) an active transducer
(B) a device that converts electrical voltage in to mechanical displacement
(C) a device that converts mechanical displacement in to electrical current
(D) a device that converts mechanical displacement into a changing resistance

55. The material used for making the starting resistance of a starter is :

(A) Eureka
(B) Tungstone
(C) Nichrome
(D) Kanthal

56. Hystevisis loss of a single phase transformer is calculate by the formula is :

(A) $RB^{1.2} \max . f$
(B) $QB^2 \max f$
(C) $PB^{1.6} \max f$
(D) $\frac{w}{V1^2}$

57. The direction of rotation of an ordinary shaded pole motor :

(A) can be reversed by reversing the supply terminal-actions of the stator winding
(B) can not be reversed
(C) can be reversed by open circuiting the shading-rings
(D) can be reversed by short circuiting the shading rings

58. The value of absolute permittivity of air is ;

(A) 9×10^{9} F/M (B) 5.54×10^{6} F/M

(C) 9×10^{-9} F/M (D) 8.854×10^{-12} F/M

59. The applied voltage of a transformer is increased by 50% while its frequency is reduced to 50% the core flex density will :

(A) became three times (B) became 3/4

(C) became 1/3 (D) remain the same

60. How many parallel paths in a triplex winding for the flow of armature current?

(A) 2 (B) 4

(C) 6 (D) 8

61. The Q point in a voltage amplifier is selected in the middle of the active region because :

(A) it gives distortionless output

(B) the operating coil then becomes very stable

(C) the circuit then requires less number of resistors

(D) it then requires a small DC voltage

62. The EMF per cell of an Edison cell is :

(A) 1.3 (B) 1.2

(C) 1.5 (D) 1.4

63. A transformer has the maximum efficiency when copper loss/iron loss is :

(A) 2 (B) 1.5

(C) 1 (D) 0.5

64. A synchronous motor draws 0.8 leading power factor current the armature reaction is :

(A) Magnatising

(B) De magnatising

(C) Magnatising and cross magnatising

(D) De magnatising and cross magnatising

65. What is the negative phase sequence of three phase connection?

(A) RYB (B) RBY

(C) YRB (D) BYR

66. If the full load iron loss of a transformer is 500 w. What will be its iron loss at half load?

(A) 125 w (B) 250 w

(C) 500 w (D) 100 w

67. A low power factor of the circuit means :

(A) it draws more active power

(B) it draws more reactive power

(C) it draws less line current

(D) it causes less voltage drop in the line

68. A single Walt meter method is used to measure power in :

(A) Balanced star connection (B) Balanced delta connection

(C) Un balanced star connection (D) Un balanced delta connection

69. A capacity to rating ratio of Scott connection is :

(A) 66.6% (B) 76.6%

(C) 86.6% (D) 96.6%

70. Air gap between the two electrodes of a spark plug is :

(A) 0.5 to 0.7 mm (B) 0.7 to 0.9 mm

(C) 0.9 to 0.11 mm (D) 0.11 to 0.13 mm