KPCL Electrical Question Paper for Assistant and Junior Engineer

1. Mho relay is usually employed for the protection of
a) Short lines only
b) Medium lines only
c) Long lines only
d) Any line
Ans: Long lines only

2. A modern power semiconductor device IGBT is combines the characteristics of
a) BJT and MOSFET
b) FCT and GTO
c) SCR and MOSFET
d) SCR and BJT
Ans: BJT and MOSFET

3. For a single-phase a.c. to d.c. controlled rectifier to operate in regenerative mode, which of the following conditions should be satisfied?
a) Half –controlled bridge, a < 90°, source of e.m.f. in load b) Half-controlled bridge, a > 90°, source of e.m.f. in load
c) Full-controlled bridge, a > 90°, source of e.m.f. in load
d) Full-controlled bridge, a < 90°, source of e.m.f. in load Ans: Full-controlled bridge, a > 90°, source of e.m.f. in load

4. Which is the most suitable power device for high frequency (more 100 kHz) switching application?
a) Power MOSFET
b) BJT
c) SCR
d) UJT
Ans: Power MOSFET

5. In a thyristor Latching current is _____ than Holding current
a) Equal
b) Less
c) Greater
d) None
Ans: Greater

6. The transfer function of a system is 10/(1+s) when operating as a unity feedback system, the steady state error to a step input will be
a) 0
b) 1/11
c) 10
d) Infinity
Ans: 1/11

7. Which one of the following statements for a dc machine which is provided with inter pole winding (IW) as well as compensating winding (CW) is correct
a) Both IW and CW are connected in series with Armature winding
b) Both IW and CW are connected in parallel with Armature winding
c) IW connected in series but CW is connected in parallel with Armature winding
d) CW connected in series but IW is connected in parallel with Armature winding
Ans: Both IW and CW are connected in series with Armature winding

8. A 0-10 mA PMMC ammeter reads 5mA in a circuit; its bottom control spring snaps out suddenly the meter will now read.
a) 5mA
b) 10mA

c) 2.5mA
d) 0
Ans: 0

9. A dc cumulatively compounded motor delivers rated load torque at rated speed. If series field is short circuited, then the armature current and speed will
a) Both increases
b) Both decreases
c) Increases and decreases
d) Decreases and increases
Ans: Both increases

10. Moving coil in dynamometer wattmeter connected
a) In series with fixed coil
b) Across supply
c) In series with load
d) Across load
Ans: Across supply

11. In an induction machine, if the air gap increased
a) Speed will be reduced
b) Efficiency will be improved
c) Power factor will be lowered
d) Breakdown torque will be reduced
Ans: Power factor will be lowered

12. A CRO screen has ten divisions on the horizontal scale. If a voltage signal 5 sin 314t+45 deg)is examined with a line base settings of 5 msec/div, the number of cycles of signal displayed on the screen will be
a) 0.5 cycles
b) 2.5 cycles
c) 5 cycles
d) 10 cycles
Ans: 2.5 cycles

13. A 3-phase 50HZ SCIM takes a power input of 30 KW at its full load speed of 1440 rpm. Total stator losses are 1 KW. The slip and rotor ohmic losses at full load are
a) 0.02, 600 W
b) 0.04, 580 W
c) 0.04, 1160 W
d) 0.04, 1200 W
Ans: 0.04, 1160 W

14. Thermocouple is used to measure
a) AC
b) DC
c) Both
d) None
Ans: Both

15. The two watt meters measurement the ratio of two meter readings is -(1-sqrt3):(1+sqrt3) then the power factor is
a) 1
b) 0.866
c) 0.707
d) 0
Ans: 0.707

16. Hays bridge is used to measure_____ and Schering bridge is used to measure_____

a) Inductance, Inductance
b) Inductance, Capacitance
c) Capacitance, Inductance
d) Resistance, Capacitance
Ans: Inductance, Capacitance

17. When sine wave is given as input to Schmitt trigger then its generates
a) Sine wave
b) Saw tooth wave
c) Triangle wave
d) Square wave
Ans: Square wave

18. In Gauss Seidel method the following factors are influenced for operation
a) Acceleration factor
b) Selection of slack buss
c) Both
d) None
Ans: Selection of slack buss*

19.
i. (X'+Y') A. Low-pass filter function
ii. (X'Y') B. Sum
iii. (XY) C. NAND
D. Carry
E.NOR
a) i-C, ii-E, iii-D
b) i-C, ii-E, iii-B
c) i-C, ii-B, iii-D
d) i-C, ii-E, iii-A
Ans: i-C, ii-E, iii-D

20. The phase lead compensation is used to
a) Increase rise time and decrease overshoot
b) Decrease both rise time and overshoot
c) Increase both rise time and overshoot
d) Decrease rise time and increase overshoot
Ans: Decrease rise time and increase overshoot

21. Voltage feed back amplifier is a
a) Shunt-Shunt
b) Shunt-Series
c) Series-Shunt
d) Series- Series
Ans: Shunt-Shunt

22. In microprocessor the next instruction to be executed is stored in
a) Program Counter
b) Stack Pointer
c) Memory Pointer
d) Accumulator
Ans: Program Counter

23. The following element retains it energy after source is disconnected
a) Resister
b) Inductor
c) Capacitor
d) Thermistor
Ans:

24. In series RLC circuit at resonant
a) Voltage is in phase with current
b) Current is maximum
c) Inductive reactance = Capacitive reactance
d) All of the above
Ans: All of the above

25.For RC low pass filter R=100 K ohms, C= 5 micro farads then lower cutt of frequency is
a) 1 K HZ
b) 0 HZ
c) 381.3 HZ
d) Infinity
Ans:

26. V=100Sin (1000t+46 deg), I=2Sin (1000t+80 deg) what are the elements in the circuit
a) R=30 ohm, L=30 mH
b) R=30 ohm, C=33.3 micro farads
c) R=40 ohm, L=30 mH
d) R=40 ohm, L=33.3 micro farads

Ans: R=40 ohm, L=33.3 micro farads
27. L=10 mH, I=100Sin50t 0
a)
b)
c)
d)
Ans:

28. In dielectric measurement, the dielectric loss is proportional to
a) F
b) V
c) I
d) Vsqr
Ans: Vsqr

29. G(s) = (1-s)/s(s+2) then closed loop transfer function is
a) Unstable
b) Stable
c) Marginally stable
d) All
Ans: Stable

30. G(s) = (1+0.5s)/(1+s) find which type of net work it is
a) Lead net work
b) Lag net work
c) Lag - Lead net work
d) Lead - Lag net work
Ans: Lag net work

31. Temperature of electrode in Arc furnace is
a) 1000 deg
b) 1500 deg
c) 1500 deg to 3500 deg
d) 4500 deg
Ans:

32. In bode plot the point which separates the lower and upper frequencies is called
a) Critical point
b) Cut-off point
c)

d)
Ans:

33. Nyquest stability is used to determine
a) Absolute Stability
b) Relative Stability
c) Both
d) None
Ans: Both*

34. When 220V dc shunt alternator generating the voltage at rated value. If direction of rotation is reversed, then alternator will
a) Build up its voltage with same polarity
b) Build up its voltage with opposite polarity
c) No build up of voltage
d) None
Ans: No build up of voltage

35. Over lap Angle depends on_____
a) Load inductance
b) Loa capacitance
c) Source inductance
d) Source capacitance
Ans: Source inductance

36. Area under speed time curve gives
a) Time
b) Speed
c) Distance
d) None
Ans: Distance

37. The regulation of Short Transmission lines depends up on
a) Distance of line
b) Frequency
c) Power factor
d) All
Ans: Power factor

38. Which of the following plant is having lowest load factor?
a) Diesel Plant
b) Pumped storage Plant
c) Thermal Plant
d) Nuclear Plant
Ans: Diesel Plan

39. For SR latch whent the out put is undesirable
a) 0, 0
b) 1, 0
c) 0, 1
d) 1, 1
Ans: 1, 1

40. For interrupting capacitive currents which Circuit Breaker (CB) is used
a) SF6 CB
b) Oil CB
c) Vacuum CB
d) Air blast CB
Ans: Vacuum CB

41. For V/F control, when frequency is increased in transformer
a) Core loss component current increases, Magnetizing component current decreases
b) Core loss component current increases, Magnetizing component current increases
c) Core loss component current decreases, Magnetizing component current decreases
d) Core loss component current decreases, Magnetizing component current increases
Ans: Core loss component current decreases, Magnetizing component current decreases

42. In ceiling fan the angle between auxiliary winding a main winding is
a) 0 deg
b) 90 deg
c) 180 deg
d) 360 deg
Ans: 90 deg

43. In a shaded pole motor, shaded rings are used to
a) Field flux production
b)
c)
d)
Ans: Field flux production

44. Practical method of improving string efficiency
a) Increasing crass arms length
b) Using different size of insulators
c) Using different insulator materials
d) Using of guard rings
Ans: Increasing crass arms length*

45. In which type of fault all 3-phase components are equal
a) L-G
b) L-L
c) L-L-G
d) 3-Phase fault
Ans: 3-Phase fault

46. 11/220 KV 100 MVA transformers, the primary base voltage rating is 10 KV then secondary base KV is
a) 10 KV
b) 220 KV
c) 220/sqrt3
d)
Ans: 220/sqrt3*

47. Water hamming effect is occurs in
a) Surge tank
b) Penstock
c) Turbine
d) Reservoir
Ans: Penstock

48. Transient stability can be improved by
a) By putting series capacitor
b) By using dynamic resister
c) Auto re-closers
d) All of the above
Ans: All of the above

49. If sending end voltage is Vs at no-load in a transmission line then receiving end voltage is if ABCD parameters of line is given
a) Vs

b) Vs/A
c) 0
d) Infinity
Ans: Vs/A

50. Harmonics are eliminated by using
a) Skewing of rotor
b) Distribution winding
c) Short pitch winding
d) All of the above
Ans: All of the above

51. For parallel operation of transformer at no load, then load shared are equal when
a) Impedance is proportional with respect to own KVA rating
b)
c)
d)
Ans: Impedance is proportional with respect to own KVA rating

52. In Induction motor Slip frequency of rotor current, when rotor speed is Nr. Then rotor producing slip field rotates with respect to stator is
a) Slip frequency
b) Nr
c) Ns
d) None
Ans: Ns

53. Good regulation means
a) Less fluctuations from no-load to full-load
b)
c)
d)
Ans: Less fluctuation from no-load to full-load

54. At dead short circuit at terminals of Alternator then the current I is
a) ZPF Lag
b) ZPF lead
c) Unity power factor
d) 0.8 Power factor lag
Ans: ZPF Lag

55. Full scale Ammeter reading is 10 mA, Voltage across Ammeter is 100 mV. Then for 100 A measurements the power loss in the circuit is
a) 1 W
b) 10 W
c) 100 W
d) 1000 W
Ans: 10 W*

56. When Alternator excitation increases and machine is operating at lagging power factor then
a) I increase
b) I decreases
c) No effect on current
d) None
Ans: I increase

57. Flue gases coming out from furnace is first going through
a) Turbine
b) Economizer
c) Air pre-heater

d) Chimney
Ans: Economizer

58. Two alternators rated are 200 KW at 4% regulation, 400 KW 5% regulation operating in parallel at 50HZ , when supply 600 KW the new frequency is
a) 50
b) 49
c) 51.3
d) 47.7
Ans: 47.7

59. Va and Vb are negative sequence component voltages the difference angle between Va and Vb with respect to Va is
a) 240
b) 120
c) 180
d) 360
Ans: 120

60. 4-Quadrent operation of chopper I is positive but V is may be positive are negative operates in which quadrant
a) 1 and 2
b) 2 and 3
c) 1 and 3
d) 1 and 4
Ans: 1 and 4

61. Heat convection, radiation, and conduction all are takes place in
a) Ice
b) Boiler
c) Refrigerator
d) Flue gases in pipe
Ans:

62. When moving iron meter is used to measure d.c current what is the disadvantage
a) It calibration in rms value
b)
c)
d)
Ans:

63. When maximum power transfer to load is
a) 20 W
b) 50 W
c) 100W
d) 0W
Ans: 0W

64. Find Zbus Parameters
a) Z11=Z12=Z21= j0.1 ohm, Z22=j0.3 ohm
b)
c)
d)
Ans: Z11=Z12=Z21= j0.1 ohm, Z22=j0.3 ohm

65. Find Z11 and Z12
a) Z11=4 ohm, Z12= 2 ohm
b) Z11=4 ohm, Z12= 5 ohm
c) Z11=5 ohm, Z12= 2 ohm
d) Z11=4 ohm, Z12= 3 ohm

Ans:

66. Current in 5 ohm resister is
a) 10 A
b) -10 A
c) 5 A
d) -5 A
Ans: -10 A

67. Find I in the circuit at t=0+
a) 2 A
b) 5 A
c) 7 A
d) 10 A
Ans:

8. Find voltage across inductor at t=0+
a) 0 V
b) 2.5 V
c) 5 V
d) 10 V
Ans: 5 V

69. This wave is applied to the PMMC meter, meter reads
a) 0 V
b) 3 V
c) 2 V
d) 1 V
Ans: 1 V

70. Find Vab
a) Zero
b) 50 at an angle of 90 deg
c) 50 at an angle of 90 deg
d) None
Ans:

71. Find E in the circuit
a) 5 V
b) 10 V
c) 20 V
d) None
Ans: None

72. Vab is reference then angle between Vab and Ib is
a) -15 deg
b) 240 deg
c) 180 deg
d) -45 deg
Ans: -15 deg*

63. When maximum power transfer to load is
Click Here to Show Diagram
a) 20 W
b) 50 W
c) 100W
d) 0W
Ans: 0W

64. Find Zbus Parameters

a) Z11=Z12=Z21= j0.1 ohm, Z22=j0.3 ohm
b)
c)
d)
Ans: Z11=Z12=Z21= j0.1 ohm, Z22=j0.3 ohm

65. Find Z11 and Z12
a) Z11=4 ohm, Z12= 2 ohm
b) Z11=4 ohm, Z12= 5 ohm
c) Z11=5 ohm, Z12= 2 ohm
d) Z11=4 ohm, Z12= 3 ohm
Ans:

66. Current in 5 ohm resister is
a) 10 A
b) -10 A
c) 5 A
d) -5 A
Ans: -10 A

67. Find I in the circuit at t=0+
a) 2 A
b) 5 A
c) 7 A
d) 10 A
Ans: 2 A

68. Find voltage across inductor at t=0+
a) 0 V
b) 2.5 V
c) 5 V
d) 10 V
Ans: 5 V

69. This wave is applied to the PMMC meter, meter reads
a) 0 V
b) 3 V
c) 2 V
d) 1 V
Ans: 1 V

70. Find Vab
a) Zero
b) 50 at an angle of 90 deg
c) 50 at an angle of 90 deg
d) None
Ans:

71. Find E in the circuit
a) 5 V
b) 10 V
c) 20 V

d) None
Ans: None

72. Vab is reference then angle between Vab and Ib is
Click Here to Show Diagram
a) -15 deg
b) 240 deg
c) 180 deg
d) -45 deg
Ans: -15 deg*