

**[PRACTIC PAPER-01]**

1. Of the following water turbines, which is not a reaction turbine?
  - a) Pelton wheel
  - b) Kaplan turbine
  - c) Propeller turbine
  - d) Francis turbine
2. Sheaths are used in underground cables to
  - a) Provide proper insulation
  - b) Provide mechanical strength
  - c) Protect the cable from moisture
  - d) None of these
3. If the frequency of a transmission system is changed from 50 Hz to 100 Hz, the string efficiency
  - a) Will increase
  - b) Will decrease
  - c) Remains unchanged
  - d) May increased or decreased depending on the line parameters
4. An electric load consumes 17.32 kW at a power factor of 0.707 (lagging). For changing the load power factor to 0.866 (lagging), the capacitor that is to be connected in parallel with the load, should draw
  - a) 7.32 KVAR
  - b) 10 KVAR
  - c) 27.32 KVAR
  - d) 10.32 KVAR
5. Power factor of a synchronous motor is unity when
  - a) The armature current is maximum
  - b) The armature current is minimum
  - c) The armature current is zero
  - d) None of the above
6. The injected e.m.f. in the rotor of induction motor must have
  - (a) zero frequency
  - (b) the same frequency as the slip frequency
  - (c) the same phase as the rotor e.m.f.
  - (d) high value for the satisfactory speed control
7. Which of the following motors will be used in electric clocks?
  - a) D.C. shunt motor
  - b) D.C. series motor
  - c) A.C. induction motor
  - d) A.C. synchronous motor
8. Superconducting metal in super-conducting is state has relative permeability of
  - a) more than one
  - b) one
  - c) zero
  - d) negative
9. Pair of active transducers is
  - a) Thermistor : Solar cell
  - b) Thermocouple : Thermistor
  - c) Thermocouple : Solar cell
  - d) Solar cell : LVDT
10. Stability of a synchronous machine
  - a) Decreases with increase in its excitation
  - b) Increases with increase in its excitation
  - c) Remains unaffected with increase in excitation
  - d) Any of the above
11. In an intrinsic semiconductor, the number of electrons is equal to the number of holes at which temperature?
  - a) 0 K
  - b) 0°C
  - c) High temperature
  - d) All temperature
12. Elements can reach a stable atomic structure by
  - a) Losing electrons only
  - b) Gaining electrons only
  - c) Losing or gaining or sharing electrons
  - d) Collisions between atoms
13. If one-phase of a 3-phase synchronous motor is short-circuited, motor
  - a) will refuse to start
  - b) will overheat in spots
  - c) will not come upto speed
  - d) will fail to pull into step
14. The speed of a synchronous motor
  - a) increases as the load increases
  - b) decreases as the load decreases
  - c) always remains constant
  - d) none of the above
15. Piezo-electric crystal is generally employed for the measurement of which one of the following?
  - a) Flow
  - b) Velocity

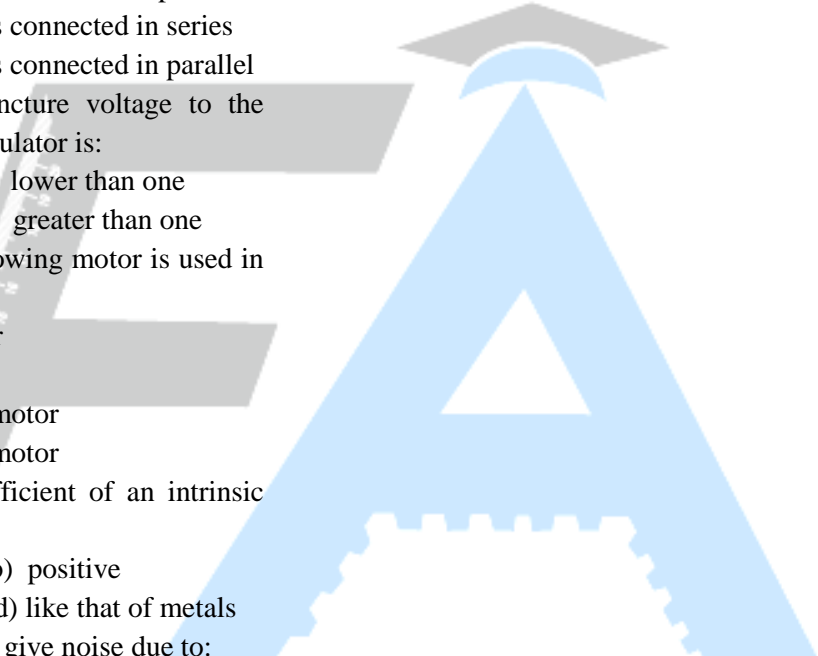
- c) Acceleration  
d) Temperature
16. In microwave telemetry, repeater stations are required at every
- a) 2 km                      b) 5 km  
c) 40 km                     d) 100 km
17. Which one of the following pressure transducers is suitable for measurement of high pressure?
- a) Alphantron              b) McLeod Gauge  
c) Pirani Gauge          d) Bourndon Gauge
18. In a synchronous motor, damper windings are provided on
- a) stator frame              b) rotor shaft  
c) pole faces                d) none of the above
19. Compared to continuous time system, the discrete system is
- a) more accurate but less stable  
b) less accurate but more stable  
c) more accurate and more stable  
d) less accurate and less stable
20. The torque angle, in a synchronous motor, is the angle between
- a) the supply voltage and the back e.m.f.  
b) magnetising current and back e.m.f.  
c) the rotating stator flux and rotor poles  
d) none of the above
21. Measurement of \_\_\_\_\_ is affected by the presence of thermo-emf in the measuring circuit.
- a) High resistance  
b) Low resistance  
c) Capacitance  
d) Inductance
22. A 220V shunt motor develops a torque of 60 Nm at an armature current of 10 A. The torque developed when the armature current is 20 A, is
- a) 30 Nm                      b) 240 Nm  
c) 84 Nm                      d) 120Nm
23. In a 3-phase synchronous generator, the stator winding is connected in star, because a delta connection would
- a) have circulating currents due to tripled harmonics
- b) require more insulation and conductor material  
c) require larger conductor and more core material  
d) result in a short circuit
24. Hunting in a synchronous motor cannot be due to
- a) windage friction  
b) variable load  
c) variable frequency  
d) variable supply voltage
25. A 100 kVA single phase transformer exhibits maximum efficiency at 80% of full load and the total loss in the transformer under this condition is 1000 W. The ohmic losses at full load will be
- a) 781.51 watt                      b) 1250 watt  
c) 1562.5 watt                      d) 12500 watt
26. In a 3-phase induction motor hums during starting up, the probable cause could be
- a) Unequal stator phase resistance  
b) Open circuited rotor  
c) Interterm short circuit on rotor  
d) Any of the above
27. An alternator is rating field current of 3A. It is developing 180 V at a field current of 1.5 A at rated speed. If its current is made 3A at rated speed, then the generated voltage would be
- a) 360 V                      b) 180 V  
c) less than 360 V                      d) 270 V
28. A 40 kVA transformer has a core loss of 400 W and full load copper loss of 800 W. The fraction of rated load at maximum efficiency is
- a) 50%                      b) 62.3%  
c) 70.7%                      d) 100%
29. The torque developed in a dc series motor in unsaturated magnetic circuit condition is
- a) Almost practically constant at all load currents  
b) Directly proportional to the load current  
c) Directly proportional to the square of load current

- d) Inversely proportional to the square of load current
30. In suspension type insulator the potential drop is
- Maximum across the lowest disc
  - Maximum across the topmost disc
  - Maximum across the disc at the midpoint of the string
  - Uniformly distributed across the string
31. The power station where coal is used as a fuel is called
- Terrestrial power station
  - Thermal power station
  - Solar power station
  - Nuclear power station
32. Highest voltage transmission efficiency is in the range of
- 30 – 45%
  - 55 – 70%
  - 5 – 10%
  - 85 – 95%
33. In which of the following industries, are all the motors totally enclosed and moisture proof?
- Iron and steel
  - Sugar industry
  - Paper industry
  - Textile industry
34. In a synchronous motor, V-curves represent relation between
- Armature current and field current
  - Power factor and speed
  - Field current and speed
  - Field current and power factor
35. Resistance switching is normally employed in
- All types of circuit breakers
  - Bulk oil circuit breakers
  - Minimum oil breakers
  - Air-blast circuit breakers
36. A string insulator has 4 units. The voltage across the bottom-most unit is 33.33% of the total voltage. Its string efficiency is
- 25%
  - 33.33%
  - 66.67%
  - 75%
37. Sparking between the contacts of a circuit breaker can be reduced by inserting
- A capacitor in parallel with the contacts
  - A capacitor in series with the contacts
  - A resistor in the line
  - A reactor in the line
38. Which one is the disadvantage of oil when used as an extinguishing medium in the oil circuit breaker?
- During arcing, oil produces carbon particles
  - During arcing, oil produces hydrogen gas
  - Oil provides insulation to the live exposed contacts from the earthed parts of the breaker
  - Oil provides good insulation between the fixed and moving contacts
39. Which of the following motors is non-self starting?
- D.C. series motor
  - Synchronous motor
  - Squirrel cage induction motor
  - Wound round induction motor
40. During arc extinction  $SF_6$  gets
- Decomposed into  $SF_4$  and  $SF_2$
  - Decomposed into S and F ions
  - Reduced to  $SF_2$
  - Oxidized
41. While starting synchronous motor its field winding should be:
- Kept open
  - Connected to a dc source
  - Connected to a ac source
  - Kept short circuited
42. Electronic switching are becoming more and more popular because of:
- Noiseless operation
  - Long life
  - Smaller size and weight
  - All of the above
43. A FET is essentially are:
- Current driven device
  - Voltage driven device

- c) Power driven device  
d) Solar device
44. Permeance is analogous to:  
a) Conductance                      b) Reluctance  
c) Inductance                        d) Resistance
45. Potential transformers are used:  
a) To measure high a.c. voltage  
b) To measure high d.c. voltage  
c) Both a) and b)  
d) As protective device in high voltage circuits
46. The knowledge of diversity factor helps in computing:  
a) plant capacity                      b) average load  
c) units generated                      d) peak demand
47. Laboratory watt meters are:  
a) Induction type  
b) Moving iron type  
c) Electrostatic type  
d) Electro-dynamometer type
48. Variation in dc excitation of a synchronous motor causes variation in:  
a) speed of motor                      b) power factor  
c) armature current                      d) both b) and c)
49. For a 3-phase, 4-pole, 50 Hz synchronous motor the frequency, number of poles, and the load torque are all halved. The motor speed will be  
a) 375 rpm                              b) 75 rpm  
c) 1500 rpm                              d) 3000 rpm
50. A transformer is working at its full load and its efficiency is also maximum. The iron loss is 1000 watts. Then, its copper loss at half of full load will be:  
a) 250 watt                              b) 300 watt  
c) 400 watt                              d) 500 watt
51. With increase in temperature, magnetic susceptibility of a ferromagnetic material will  
a) Increase  
b) Decrease  
c) Increase initially and then decrease  
d) Remain constant
52. Width of energy bands depends on which of the following?  
a) Temperature  
b) Pressure  
c) Relative freedom of electrons in the crystal  
d) Mass of atom in the material
53. The maximum value of torque that a synchronous motor can develop without losing its synchronism, is known as  
a) Slip torque  
b) Pull-out torque  
c) Breaking torque  
d) Synchronizing torque
54. The size of a synchronous motor decreases with the increase in  
a) Flux density  
b) Horse power rating  
c) Speed  
d) All of the above
55. When the temperature of a magnetic material is raised above the Curie point, it becomes  
a) Diamagnetic  
b) Paramagnetic  
c) Ferromagnetic  
d) Ferrimagnetic
56. Magnetostriction is a phenomenon of  
a) generation of electricity in ferromagnetic materials  
b) generation of magnetism in conductors  
c) change in permeability of ferromagnetic materials during magnetization  
d) change in physical dimensions of ferromagnetic materials during magnetization
57. For power factor correction, synchronous motors operate at  
a) no-load and greatly over-excited fields  
b) no-load and under-excited fields  
c) normal load with minimum excitation  
d) normal load with zero excitation
58. Hall Effect can be used  
a) to find type of semiconductor

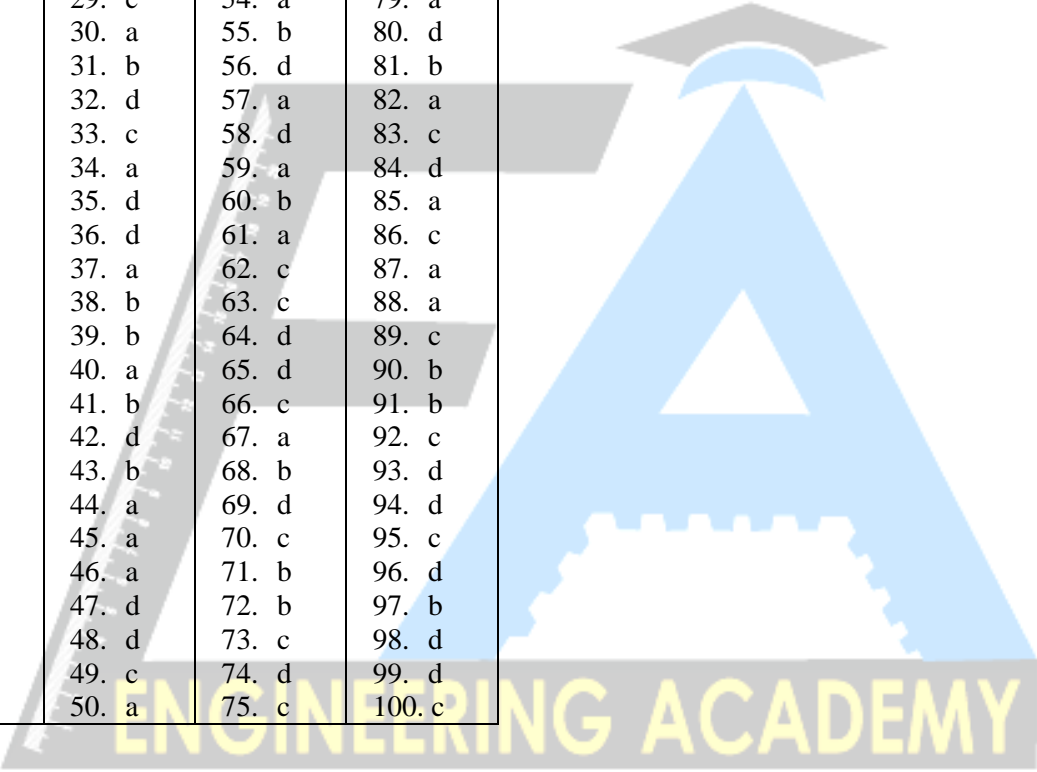
- b) to find carrier concentration (whether  $n$  or  $p$  type)  
c) to measure conductivity  
d) all of these
59. The hysteresis loop for the material of the core of a transformer should be  
a) short and narrow  
b) tall and narrow  
c) short and wide  
d) tall and wide
60. All magnetic materials lose their magnetic properties when  
a) cooled to low temperature  
b) heated to high temperature  
c) kept in an aluminum box  
d) kept in vacuum
61. Exciters of synchronous machines are  
a) d.c. shunt machines  
b) d.c. series machines  
c) d.c. compound machines  
d) any of the above
62. The armature current of the synchronous motor  
a) has large values for low excitation only  
b) has large values for high excitation only  
c) has large values for low and high excitation  
d) any of the above
63. A synchronous motor which works on a leading power factor and does not drive a mechanical load is called as  
a) static condenser  
b) condenser  
c) synchronous condenser  
d) none of the above
64. Overhead system can be designed for operation upto  
a) 11 kV                      b) 33 kV  
c) 66 kV                      d) 400 kV
65. Galvanized steel wire is generally used as  
a) stay wire  
b) earth wire  
c) structural components  
d) all of the above
66. The usual spans with R.C.C. poles are  
a) 40-50 meters  
b) 60-100 meters  
c) 80-100 meters  
d) 300-500 meters
67. 310 km line is considered as  
a) a long line  
b) a medium line  
c) a short line  
d) any of the above
68. For defining the standard meter, wavelength of which material is considered?  
a) Neon                      b) Krypton  
c) Helium                      d) Xenon
69. The operating voltage of extra high tension cables is upto  
a) 6.6 kV                      b) 11 kV  
c) 66 kV                      d) 132 kV
70. The power transmitted will be maximum when  
a) corona losses are minimum  
b) reactance is high  
c) sending end voltage is more  
d) receiving end voltage is more
71. Which of the following relays is used on long transmission lines?  
a) Impedance relay  
b) Mho's relay  
c) Reactance relay  
d) None of the above
72. Which one of the following is measured by the loss of charge method?  
a) Low R                      b) High R  
c) Low L                      d) High L
73. Which of the following distribution systems is more reliable?  
a) Radial system  
b) Tree system  
c) Ring main system  
d) All are equally reliable
74. A conductor, due to sag between two supports, takes the form of

- a) semi-circle                      b) triangle  
c) ellipse                              d) catenary
75. Why are dummy strain gauges employed?  
a) For calibration of strain gauges  
b) For increasing the sensitivity of the bridge  
c) For compensation of temperature variations  
d) For neutralizing the influence of bridge voltage supply variations
76. 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
77. Pin type insulators are generally not used for voltages beyond  
a) 1 kV                                  b) 11 kV  
c) 22 kV                                d) 33 kV
78. Which one of the following materials is used in the fabrication of swamping resistance of a PMMC instrument?  
a) Copper                              b) Aluminium  
c) Manganin                          d) Tungsten
79. The battery cells in an electronic millimeter are required to measure which one of the following?  
a) Resistance                        b) Voltage  
c) Current                              d) Power
80. Low resistance from few ohms down to one micro ohm is measured using which one of the following instruments?  
a) Ohm meter  
b) A series type ohm meter  
c) A shunt type ohm meter  
d) A voltmeter and an ammeter
81. Aluminium has a specific gravity of  
a) 1.5    b) 2.7    c) 4.2    d) 7.8
82. For transmission of power over a distance of 200 km, the transmission voltage should be  
a) 132 kV                              b) 66 kV  
c) 33 kV                                d) 11 kV
83. Which of the following protects a cable against mechanical injury?  
a) Bedding                            b) Sheath  
c) Armouring                        d) None of the above
84. Which of the following insulation is used in cables?  
a) Varnished cambric  
b) Rubber  
c) Paper  
d) Any of the above
85. In an a.c. series RLC circuit, the voltage across R and L is 20V, voltage across L and C is 9V and voltage across RLC is 15. What is the voltage across C?  
a) 7V    b) 12V    c) 16 V    d) 21V
86. The bedding on a cable consists of  
a) Hessian cloth  
b) Jute  
c) Any of the above  
d) None of the above
87. Fermi level in a p-type semiconductor lies close to  
a) The top of the valence band  
b) The bottom of the valence band  
c) The top of the conduction band  
d) The bottom of the conduction band
88. In single core cables armouring is not done to  
a) Avoid excessive sheath losses  
b) Make it flexible  
c) Either of the above  
d) None of the above
89. If the length of a cable is doubled, its capacitance  
a) Becomes one-fourth  
b) Becomes one-half  
c) Becomes double  
d) Remains unchanged
90. Which one of the following defects is responsible for creeping in an induction type energy meter?  
a) Imperfect lag compensation  
b) Over friction compensation

- c) Imperfect overload compensation  
d) Misalignment of brake magnet
91. The lightning arrester is connected:  
a) In series with the line  
b) Between line and earth  
c) To a pole near the line  
d) To circuit breaker
92. To increase the range of a voltmeter:  
a) A low resistance is connected in series  
b) A low resistance is connected in parallel  
c) A high resistance is connected in series  
d) A high resistance is connected in parallel
93. The ratio of the puncture voltage to the flashover voltage of an insulator is:  
a) equal to one      b) lower than one  
c) zero                d) greater than one
94. Which one of the following motor is used in household refrigerator?  
a) Synchronous motor  
b) D.C. shunt motor  
c) 3-phase induction motor  
d) 1-phase induction motor
95. The temperature coefficient of an intrinsic semiconductor is:  
a) zero                b) positive  
c) negative            d) like that of metals
96. An electric motor may give noise due to:  
a) Magnetic effect  
b) Defective bearing  
c) Cooling air  
d) All of the above
97. A single phase motor is made self-starting by the addition of a/an:  
a) Running winding  
b) Starting winding  
c) Electric starter  
d) Auto transformer
98. The earth's potential is taken as:  
a) infinite            b) supply voltage  
c) 1 volt              d) zero
99. Swamping resistance is used to compensate error due to:  
a) Stray magnetic field  
b) Large supply voltage  
c) Large supply frequency  
d) Temperature variations
100. The tariff most suitable for large industrial consumers is:  
a) Flat demand rate  
b) Block meter rate  
c) Two part tariff  
d) All of the above
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**UKSSSC ANS-KEY PAPER- 01 [2017]**

1. a	26. d	51. b	76. c
2. c	27. c	52. a	77. d
3. c	28. c	53. d	78. c
4. a	29. c	54. a	79. a
5. b	30. a	55. b	80. d
6. b	31. b	56. d	81. b
7. d	32. d	57. a	82. a
8. d	33. c	58. d	83. c
9. c	34. a	59. a	84. d
10. b	35. d	60. b	85. a
11. a	36. d	61. a	86. c
12. c	37. a	62. c	87. a
13. a	38. b	63. c	88. a
14. c	39. b	64. d	89. c
15. c	40. a	65. d	90. b
16. c	41. b	66. c	91. b
17. b	42. d	67. a	92. c
18. c	43. b	68. b	93. d
19. a	44. a	69. d	94. d
20. c	45. a	70. c	95. c
21. b	46. a	71. b	96. d
22. d	47. d	72. b	97. b
23. b	48. d	73. c	98. d
24. a	49. c	74. d	99. d
25. a	50. a	75. c	100. c



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