

# Telangana ECET

## Model Question Paper with Answers

1. Laminations are used in armature of D.C. machine to

- A. Reduce weight
- B. Reduce volume
- C. Reduce eddy current loss
- D. Increase air movement

2. Variable resistors are

- A. Wire wound resistors
- B. Thin film resistors
- C. Thick film resistors
- D. All the above

3. Trickle charge is required for

- A. Lead acid batteries
- B. Nickel iron cells
- C. Secondary
- D. All of the above

4. In nickel-iron cell the electrolyte is

- A. Dilute sulfuric acid
- B. Dilute potassium hydroxide
- C. Dilute ammonium hydroxide
- D. Dilute sodium chloride solution

5. In a D.C. series motor, shaft torque is less than the armature torque due to

- A. Stray losses
- B. Eddy current losses
- C. Hysteresis losses
- D. All of the above

6. Mica belongs to which class of insulation

- A. A
- B. E
- C. F
- D. H

7. Hopkinson's test is conducted at

- A. Full load
- B. Part load
- C. Low load
- D. No load

8. The unit of flux density is

- A. Webers/m<sup>2</sup>
- B. Henry/ m<sup>2</sup>
- C. Newton/ m<sup>2</sup>
- D. Ampere/ m<sup>2</sup>

9. The reciprocal of reluctance is

- A. Susceptibility
- B. Permeability
- C. Permeance
- D. Reluctivity

10. Ohm's law is not applicable to

- A. D.C. circuits
- B. High currents
- C. Small resistors
- D. Semi-conductors

11. Di-electric strength of a material depends on

- A. Thickness

- B. Temperature
- C. Moisture content
- D. All of the above

12. For a six pole wave wound dc generator the number of brushes will be

- A. 12
- B. 6
- C. 4
- D. 2

13. The unit relative permeability

- A. Henry
- B. Henry/m
- C. Henry/square meter
- D. It is dimensionless

14. In two wattmeter method, if one of the wattmeter shows negative reading, the factor of the load should be

- A. Unity
- B. Lagging
- C. Leading
- D. Zero

15. The area of hysteresis loop is a measure of

- A. Permeance
- B. Magnetic flux
- C. Energy loss per cycle
- D. Permittivity

16. The critical resistance of the dc generator refers to the resistance of

- A. Armature
- B. Load
- C. Field
- D. Brushes

17. A transformer can have no zero voltage regulation at

- A. Zero power factor
- B. Lagging power factor
- C. Leading power factor
- D. Unity power factor

18. In scott connections the main transformer has centre tap on

- A. Primary winding
- B. Secondary winding
- C. Both A and B
- D. None of the above

19. Piezo electric transducers are

- A. Active transducers
- B. Passive transducers
- C. Secondary transducers
- D. None of the above

20. Over currents in transformer affects

- A. Insulation life
- B. Temperature rise
- C. Mechanical stress
- D. All of the above

21. As the speed of an alternator increases

- A. The frequency increases
- B. The frequency decreases
- C. The frequency remains same but power factor decreases
- D. None of the above

22. For 50hz system the maximum speed of an alternator can be

- A. Approximately 3600 rpm
- B. 3600 rpm
- C. Approximately 3000 rpm
- D. 3000 rpm

23. Which voltmeter has the least power consumption

- A. Induction type
- B. Hot wire type
- C. Electrostatic type
- D. Moving iron- attraction type

24. Which of the following primary transducer does not convert velocity to pressure

- A. Orifice
- B. Venture
- C. Pilot tube
- D. Varies

25. In A.C. circuits, the meters measure

- A. r.m.s values
- B. Peak values
- C. Mean values
- D. Mean square values

26. Incandescent bulb can work on

- A. A.C. only
- B. D.C. only
- C. Both dc as well as ac
- D. Depend on the shape of the coil

27. An inductor

- A. Allows ac to pass but blocks dc
- B. Allows dc to pass but blocks ac
- C. Allows both ac and dc to pass
- D. Blocks dc

28. Buchholz relay is generally not provided on transformers below

- A. 1kVA
- B. 5kVA
- C. 50kVA
- D. 500kVA

29. An ideal current source has zero

- A. Internal conductance
- B. Internal resistance
- C. Voltage no load
- D. Ripple

30. An inductor stores energy in

- A. Electrostatic field
- B. Electromagnetic field
- C. Core
- D. Magnetic field

31. The efficiency of a transformer at full load 0.85 PF lag is 90%. Its efficiency at full load 0.85 PF lead is

- A. Less than 90%
- B. More than 90%
- C. 90%
- D. 100%

32. The permissible pH value of water for boilers is

- A. 1
- B. 7
- C. Slightly more than 7
- D. 10

33. A nuclear power plant is invariably used as a

- A. Base load plant
- B. Peak load plant
- C. Stand by plant
- D. Spinning reserve plant

34. In induction motors, the rotor slots are skewed to reduce

- A. Noise
- B. Vibrations
- C. Magnetic humming
- D. Magnetizing current

D. 8%

35. Hunting in a synchronous motor cannot be due to

- A. Variable load
- B. Variable frequency
- C. Variable supply voltage
- D. Windage friction

36. The disadvantage of renewable source of energy is

- A. Lack of dependability
- B. Intermittency
- C. Availability of low energy densities
- D. All of the above

37. Reluctance motors are

- A. Doubly excited
- B. Singly excited
- C. Multiply excited
- D. Unexcited

38. In double cage induction motor the inner cage has

- A. High R and high X
- B. High R and low X
- C. Low R and high X
- D. Low R and low X

39. Two alternators are running in parallel. If the field of one of the alternator is adjusted, it will

- A. Reduce its speed
- B. Change its load
- C. Change its power factor
- D. Change its frequency

40. A 4 pole, 3 phase, 50hz induction motor running at 1450 rpm will have percentage slip of

- A. 103.3%
- B. 4%
- C. 7.5%

41. Power factor is given by

- A. Kwh/kw
- B. Active power/reactive power
- C. Reactive power/active power
- D. Kw/kwh

42. For the same plant size, initial cost of which plant is the highest

- A. Steam power plant
- B. Diesel engine plant
- C. Nuclear power plant
- D. Gas turbine plant

43. The speed regulation of a 3 phase synchronous motor is

- A. 5%
- B. 1%
- C. 0.4%
- D. Zero

44. The overall thermal efficiency of a steam power station is in the range of

- A. 18-24%
- B. 30-40%
- C. 44-62%
- D. 68-79%

45. The number of slip rings on a squirrel cage induction motor is

- A. One
- B. Three
- C. Six
- D. None

46. The sag of the transmission line is least affected by

- A. Self weight conductors
- B. Temperature of surrounding air
- C. Current through conductor
- D. Ice deposited on conductor

**47. Which of the following is a conducting medium for electric current**

- A. Low temperature gas
- B. high temperature gas
- C. Dissociated gas
- D. Plasma

**48. The disadvantages with paper as insulating material is**

- A. It has low insulation resistivity
- B. It has high capacitance
- C. It is hygroscopic
- D. It is organic material

**49. A zero watt lamp consumes**

- A. No power
- B. About 5 to 7 w power
- C. About 15 to 20 w power
- D. About 25 to 30 w power

**50. The main advantage of A.C. transmission system over D.C. transmission system is**

- A. Easy transformation
- B. Less losses in transmission over long distances
- C. Less insulation problems
- D. Less problem of instability

**51. Di-electric strength of SF<sub>6</sub> is**

- A. Less than that of air at atmospheric pressure
- B. Less than that of oil used in OCB
- C. More than that of oil used in OCB
- D. More at low pressure and low at higher pressure

**52. Buchholz relay is operated by**

- A. Eddy currents
- B. Gas pressure
- C. Electromagnetic induction
- D. Electro static induction

**53. The size of the conductor of power cables depends on**

- A. Type of insulation
- B. Current
- C. Voltage
- D. Power factor

**54. When maximum and average loads are equal, the load factor will be**

- A. Zero
- B. 0.01
- C. 0.5
- D. 1.0

**55. If the resistance of dry skin of human body is 1,00,000 ohms, the resistance of the wet body will be**

- A. 1,00,000 ohms
- B. 2,00,000 ohms
- C. 5,00,000 ohms
- D. 5000 ohms

**56. Highest voltage for transmitting electrical power in india is**

- A. 735 kV
- B. 700 kV
- C. 550 kV
- D. 400 kV

**57. Load curve helps in deciding**

- A. Sizes of the generation units
- B. total installed capacity of the planet
- C. operating schedule of generating units
- D. all of the above

58. Which of the following relation is incorrect

- A. Capacity factor=utilization factor x load factor
- B. Load factor x maximum load =average load
- C. Demand factor x connected load=maximum demand
- D. None of the above

59. The current drawn by the line due to corona losses is

- A. Sinusoidal
- B. Square
- C. Non sinusoidal
- D. Triangular

60. Skin effect depends on

- A. Size of the conductor
- B. Frequency of the current
- C. Resistivity of the conductor material
- D. All of the above

61. Power frequency of 25 kV single phase system is

- A. 32/3
- B. 25
- C. 50
- D. 60

62. Lumen/watt is the unit of

- A. Light flux
- B. Luminous intensity
- C. Brightness
- D. Luminous efficiency

63. The coefficient of adhesion is highest when

- A. The rails are dry
- B. The rails are oiled
- C. The rails are wet with dew
- D. The rails are dusty

64. Human eye can be considered as

- A. An open loop system
- B. A closed loop system with single feed back
- C. A closed system with multivariable feedback
- D. None of the above

65. Highest power factor can be expected in which method of heating

- A. Electric arc heating
- B. Dielectric heating
- C. Induction heating
- D. Resistance heating

66. According to Indian electricity rules, extra high voltage implies voltage exceeding

- A. 440 v
- B. 650 v
- C. 33 kV
- D. 110 kV

67. Danger 440 v plates are

- A. Danger notices
- B. Caution notices
- C. Advisory notices
- D. Informal notices

68. Stator voltage control for speed control of induction motors are suitable for

- A. Fan and pump drives
- B. Drive of a crane
- C. Running it as generator
- D. Constant load drive

69. A two phase induction motor consists of

- A. Two stator windings
- B. Two rotor windings
- C. Both A and B
- D. None of the above

D. All of the above

**70 Halogen lamps are used for the illumination of**

- A. Sports grounds
- B. Parks
- C. Air ports
- D. All of the above

**71. For tramways the return circuit is**

- A. Through cables
- B. Through rails
- C. Through neutral wire
- D. Through common earthing

**72. In a domestic cake baking oven the temperature is controlled by**

- A. Series parallel operation
- B. Auto transformer
- C. Thermostat
- D. Voltage variation

**73. Which of the following is of high value in case of induction heating**

- A. Voltage
- B. Current
- C. Frequency
- D. All of the above

**74. The earthing electrode should be suited at a place at least .....meter away from the building whose installation system is being earthed**

- A. 1.5 m
- B. 103.5 m
- C. 25 m
- D. 100 m

**75. Oscillators are widely used in**

- A. Radio broadcasting
- B. Television broadcasting
- C. Radio and television receivers

**76. A device that converts from decimal to binary numbered is called**

- A. Decoder
- B. Encoder
- C. CPU
- D. Converter

**77. For good stability the tuned circuit should have**

- A. High Q
- B. Low R
- C. Low L
- D. Low C

**78. How many outputs are there in the output of a 10 bit D/A converter**

1000

1023

1024

1224

**79. Which of the following device incorporate a terminal for synchronizing purposes**

- A. DIAC
- B. TRAIC
- C. SUS
- D. None of the above

**80. In general the gain of amplifier is**

- A. Real
- B. Imaginary
- C. Collector
- D. None of the above

**81. Checking on transformer oil level can be done**

- A. Daily
- B. Monthly
- C. Quarterly
- D. Yearly

82. Transformer capacity is expressed in

- A. kW
- B. kVA
- C. kV
- D. kVAR

83. The forbidden energy gap between the valence band and conduction band will be wide in case of

- A. Semi conductors
- B. All metals
- C. Good conductors of electricity
- D. Insulators

84. Which of the following wire is used service mains

- A. Cleat wiring
- B. T.R.S wiring
- C. Lead sheathed wiring
- D. Wooden casing and capping wiring

85. For all substations which type of earthing is preferred

- A. Pipe earthing
- B. Plate earthing
- C. Rod earthing
- D. Strip/wire earthing

86. In a transistor which of the following region is very lightly doped and is very thin

- A. Emitter
- B. Base
- C. Collector
- D. None of the above

87. In Boolean algebra  $A+A+A+\dots+A$  is same as

- A. 5A
- B. nA
- C. A
- D. Infinity

88. A device that does not exhibit negative resistance characteristic is

- A. FET
- B. UJT
- C. Tunnel diode
- D. SCR

89. Status register in the 8156 is read with

- A. IN20H
- B. OUT 20H
- C. Either A or B
- D. None of the above

90. Soft magnetic materials are widely used in

- A. Meters
- B. Transducers
- C. Transformer cores
- D. Televisions

91. Status register in 815 contains information about

- A. The timer
- B. The ports
- C. Both A and B
- D. None of the above

92. In 8355, the ROM is organized as..... words of 8 bit each

- A. 2000
- B. 2048
- C. 4048
- D. 8355



**93. RC snubber circuit is used to limit the rate of**

- A. Rise of current in SCR
- B. Rise of voltage across SCR
- C. Conduction period
- D. All of the above

- A. Increased
- B. Maximum
- C. Decreased
- D. Unaffected

**94. If the firing angle in a SCR rectifier is decreased output is**