



SOUTH CENTRAL RAILWAY GDCE 2023

Candidate User ID : RRC-10102477

Exam Date : 18/08/2024

Test Centre Name : AIM TECHNOLOGIES

Exam Name : ELECTRICAL AND ALLIED ENGINEERING

Exam Timing : 10:30 AM - 12:30 PM

Note: Questions answered are highlighted with selection

1. Which of the following is/are antivirus software?

- McAfee
- Kaspersky
- Quick heal
- All of these (Correct Answer)

2. What is the length of the MAC address?

- 32 bits
- 8 bits
- 16 bits
- 48 bits (Correct Answer)

3. A computer cannot "boot" if it does not have the _____

- Compiler
- Operating system (Correct Answer)
- Loader
- Assembler

4. What else is a command interpreter called?

- shell (Correct Answer)
- command
- kernel
- prompt

5. Which of the Following Greenhouse Gases Is Present in Very High Quantities?

- Carbon dioxide (Correct Answer)
- Propane
- Butane
- Methane

6. The pH of a solution of HCL is 3. This shows that the molarity of the solution is :

- 0.0001M
- 0.3M
- 0.001M (Correct Answer)
- 3.0M

7. Which one of the following ideas is just totally opposite to deflation?

- Disinflation
- Inflation (Correct Answer)
- None of these
- Recession

8. The chemical formula of caustic potash is:

- (Correct Answer)

- NaOH
- NH₄OH
- Ca(OH)₂

9. Which of the following is an input device of a computer ?

- Monitor
- Printer
- Scanner (Correct Answer)
- Speaker

10. Cosmic rays is/are :

- None of these
- Charged particle (Correct Answer)
- Uncharged particles
- Can be both charged and uncharged

11. The term Back-stick is used in which of the following games/sports?

- Badminton
- Football
- Hockey (Correct Answer)
- Basketball

12. The process of converting wet waste to manure is called _____ .

- Metabolism
- Composting (Correct Answer)
- Incineration
- All of these

13. The increasing order of acid strength of HCl , HI , HBr , HF is -

- HF < HCl < HBr < HI (Correct Answer)
- HCl < HI < HBr < HF
- HI < HCl < HBr < HF
- None of these

14. Mahatma Gandhi launched Kheda Satyagrah on Gujarat in 1918 to support the cause of ?

- Land lords
- Kol Rebellion
- The peasants (Correct Answer)
- Mill owners

15. The solid waste from hospital is classified as :

- Hazardous (Correct Answer)
- Compostable
- None of these
- Non Hazardous

16. Ultraviolet radiations from sunlight cause a reaction producing :

- fluorides
- sulphur dioxide
- carbon monoxide
- ozone (Correct Answer)

17. The small piece of a unmagnetized material gets repelled when it is brought near a powerful magnet the material is :

- paramagnetic
- ferromagnetic

- diamagnetic (Correct Answer)
- non magnetic

18. Discovery of Ozone hole was first made over _____ .

- Equator
- Antarctic (Correct Answer)
- Tropics
- Arctic

19. Hydrogen bomb is based on the principle of :

- nuclear fusion (Correct Answer)
- natural radioactivity
- nuclear fission
- artificial radioactivity

20.

What is the primary source of methane (CH₄) emissions that contribute to global warming?

- Ocean currents
- Cow dung
- Deforestation
- Agricultural activities (Correct Answer)

21. Volcanic eruption do not occur in the _____ .

- Caribbean sea
- Baltic sea (Correct Answer)
- Black sea
- Caspian sea

22. The ozone layer restricts _____ .

- Infrared Radiation
- Green Radiation
- None of these
- Ultraviolet Radiation (Correct Answer)

23. Which dance form is associated with mukhauta (Mask) dance ?

- Kuchipudi
- Kathakali (Correct Answer)
- Manipuri
- Odishi

24. Which type of memory is used for long-term data storage and program storage?

- RAM
- ROM (Correct Answer)
- Cache
- Register

25. What is the term used when the main server sends mail to another mail server?

- MIME
- FTP
- TCP/IP
- SMTP (Correct Answer)

26. Which device allows you to enter data and instructions into a computer?

- Input device (Correct Answer)
- Output device
- CPU
- ALU

27. Magnetic field inside a solenoid is _____.

- varies from one point to another
- None of these
- uniform (Correct Answer)
- increase from one end to another

28. Which of the following is the most ancient mountain range ?

- Satpura
- The Himalayas
- Aravalli (Correct Answer)
- Vindhya

29. Which of the following lake forms the international border between Tanzania and Uganda ?

- Malawi
- Zambezi
- Chad
- Victoria (Correct Answer)

30. India lies in which of the following hemisphere?

- Southern Hemisphere
- Eastern and Southern
- Western Hemisphere
- Northern Hemisphere (Correct Answer)

31. Which scientist invented the vaccination for the first time?

- Edward Jenner (Correct Answer)
- Alexander Fleming
- None of these
- Louis Pasteur

32. A full length of the image of a distant tall building can be seen using -----.

- a plane mirror
- a concave mirror
- none of these
- a convex mirror (Correct Answer)

33. When a magnesium ribbon is burnt in air, the ash formed is :

- yellow
- black
- pink
- white (Correct Answer)

34. Far-sightedness is also known as -----.

- Myopia
- Cataract
- Presbyopia
- Hypermetropia (Correct Answer)

35. 'Monsoon Croaks Bioblitz 2024', recently organized in which state?

- Odisha
- Kerala (Correct Answer)
- Bihar
- Karnataka

36. What was the primary objective of 'Operation Meghdoot', recently mentioned in news?

- To establish a military base in Ladakh
- To secure the Siachen Glacier (Correct Answer)
- To capture strategic heights in the Himalayas

None of these

37. Who among these was actively associated with the Kisan Sabha Movement in 1929 ?

- Sardar Patel
- Swami Vidyanand
- Swami Sahajanand (Correct Answer)
- Swami Ramanand

38. When was Microsoft Word first version released?

- 1980
- 1983 (Correct Answer)
- 1985
- 1978

39. User communicates with a computer with the help of which devices?

- Output device
- Software device
- Input device
- Both Input and Output (Correct Answer)

40. What is the chemical formula of hydrochloric acid ?

-
-
- (Correct Answer)
-

41. Which of the following is the SI Unit of Electric Current?

- faraday
- ampere (Correct Answer)
- volt
- ohm

42. What is 'bridge fuel', recently seen in news?

- Solar energy
- Wind energy
- Natural gas (Correct Answer)
- Coal

43. Sania Mirza has announced from whom will he retire from the following games?

- Football
- Hockey
- Lawn Tennis (Correct Answer)
- Cricket

44. Which One of the Following Is Not a Greenhouse Gas?

- Methane
- ozone
- Hydrogen (Correct Answer)
- Nitrous oxide

45. What process causes the disintegration of rock at or near the earth's surface?

- Physical weathering (Correct Answer)
- Chemical weathering
- None of these
- Erosion

46. What converts oxygen into ozone in the upper atmosphere ?

- Isomerising radiation
- Ultraviolet radiation (Correct Answer)
- Ionizing radiation
- Solar radiation

47. Mudra Bank has been started to help which sector?

- Small business (Correct Answer)
- Poor women
- Marginal farmers
- Rural sector

48. The working principle of a washing machine is:

- dialysis
- reverse osmosis
- diffusion
- centrifugation (Correct Answer)

49. Tungsten is used in which of the following?

- Metal extraction
- Insulators
- Electric bulb (Correct Answer)
- Textile manufacturing

50. The substance that are composed of two or more different element in fixed proportion by mass are called -

- None of these
- compound (Correct Answer)
- element
- atom

51.

Which of the following statements is correct regarding 'ferro-magnetic material'?

- I. These materials are strongly attracted by magnets.
- II. If the permeability is very much greater than unity ranging to several thousands, the substances are called ferro-magnetic materials.

- Only I
- Both I and II (Correct Answer)
- Neither I nor II
- Only II

52. 'Solenoid' is a spiral of wire having a _____ number of closely wound circular turns and having a length considerably _____ than its diameter.

- large, smaller
- small, smaller
- small, greater
- large, greater (Correct Answer)

53. In the 'Three Phase Wattmeter', the total deflecting torque on the moving system is proportional to the _____.

- total current
- total resistance
- total power (Correct Answer)
- total inductance

54.

Which of the following is 'resistance welding' process?

- I. Butt welding
- II. Flash welding
- III. Spot welding

- Only I and III
- Only I and II
- Only II and III
- I, II and III (Correct Answer)

55. Reciprocal of reluctance is called _____.

- magnetic field intensity
- magnetic flux density
- magnetomotive force
- permeance (Correct Answer)

56. Which of the following is INCORRECT about electromagnet?

- Its polarity can be changed easily.
- It cannot be used in cycle dynamo and motorcycle magnetos.
- It cannot be used in navigation.
- It is never suitable for larger size motor and generators. (Correct Answer)

57.

Which of the following statements is correct regarding 'overcurrent protection'?

- I. An overcurrent relay operates when the current exceeds its pick-up value.
- II. This scheme of protection is used for the protection of distribution lines, large motors, equipment etc.

- Both I and II (Correct Answer)
- Only I
- Only II
- Neither I nor II

58. A 200-ohm resistance is directly switched on across a 20 V battery. How much is the power loss?

- 1 W
- 8 W
- 2 W (Correct Answer)
- 4 W

59.

'Wind energy' can be harvested _____.

- I. directly as mechanical power
- II. by converting the kinetic energy into electrical energy using the turbine system

- Only II
- Both I and II (Correct Answer)
- Neither I nor II
- Only I

60. Which of the following statement is NOT correct regarding 'inductance'?

- It depends upon number of turns of the coil.
- It depends upon the length of the coil.
- It depends upon area of cross-section of coil.
- It does not depend upon permeability of core. (Correct Answer)

61.

Which of the following statements is correct regarding resistance?

- I. It is the property of a substance which opposes the flow of electricity through it.
- II. The unit of resistance is henry.

- Neither I nor II
- Both I and II
- Only I (Correct Answer)
- Only II

62.

When a diode is reverse biased, it behaves like an _____ switch and _____ the ac supply from the load (consider load as R_L).

- closed, disconnects
- open, disconnects (Correct Answer)
- open, connects
- closed, connects

63. Which of the following material is NOT recommended for lightning conductor?

- Galvanized steel
- Copper
- Mica (Correct Answer)
- Alloys

64.

'Self-excited D.C. generators' are subdivided into which of the following generators?

- I. Series wound generators
- II. Shunt wound generators
- III. Compound wound generators

- Only II and III
- Only I and II
- I, II and III (Correct Answer)
- Only I and III

65. In the context of overcurrent relay, what does 'I' stand for in 'IDMT'?

- Insight
- Induced
- Inclined
- Inverse (Correct Answer)

66. Which of the following expression is correct regarding 'illumination (E)'? (If 'F' is luminous flux and 'A' is the area of the surface)

- $E = F \times A$
- $E = F + A$
- $E = F / A$ (Correct Answer)
- $E = F - A$

67. Which of the following is correct as per the 'Lambert's cosine law'? (where 'E' is illumination of a surface, 'I' is luminous intensity, 'r' is distance of the surface from the source and 'q' is the angle made by the normal to the illuminated surface.)

$E = I \cos \theta \times \frac{1}{r}$

$E = I \cos \theta \times r^2$

$E = \frac{I \cos \theta}{r^2}$ (Correct Answer)

$E = I \cos \theta \times r^2$

68. For single-phase transformers, core-type has _____ legged core whereas shell-type has _____ legged core.

- four; two
- three; two
- two; four
- two; three (Correct Answer)

69. Synchronous motors have _____ operating efficiency and _____ speed.

- high, variable
- low, variable
- high, constant (Correct Answer)
- low, constant

70. Which of the following law is defined as per the given statement? "The ratio of the potential difference (V) between any two points of a circuit to the current (I) flowing through it is constant."

- Ohm's law (Correct Answer)
- Kirchhoff's voltage law
- Faraday's law
- Kirchhoff's current law

71.

Which of the following statements is correct regarding 'Buchholz relay'?

I. The operation of the Buchholz relay gives an alarm when a specified amount of gas is formed.

II. The analysis of gas collected in the relay chamber indicates the type of incipient fault.

- Only I
- Both I and II (Correct Answer)
- Only II
- Neither I nor II

72.

The Indian Electricity rules and regulations have been framed by institution of electrical engineers to _____.

I. minimize fire risk

II. ensure satisfactory operation of equipment and apparatus used.

- Neither I nor II
- Both I and II (Correct Answer)
- Only I
- Only II

73.

Which of the following is NOT correct regarding magnetic flux (ϕ)?

I. It is a group of lines of force crossing the space occupied by a magnetic field.

II. It is denoted by $\phi = B \times A$, where 'A' is area of magnetic core and 'B' is flux density.

- Both I and II (Correct Answer)
- Neither I nor II
- Only II
- Only I

74.

In the context of economics of power generation, electric power supply and utilization, match the terms in List I with their expression in List II.

	List-I Terms		List-II Expression
I	Demand factor	1	$\frac{\text{Maximum demand}}{\text{Connected load}}$
II	Load factor	2	$\frac{\text{Average load}}{\text{Maximum demand}}$
III	Diversity factor	3	$\frac{\text{Sum of individual maximum demands}}{\text{Maximum demand of entire group}}$

- I-2, II-1, III-3
- I-3, II-2, III-1
- I-1, II-3, III-2
- I-1, II-2, III-3 (Correct Answer)

75. Which of the following is the type of transformer based on power?

- Step-up transformer
- Air force cooled transformer
- Lighting transformer (Correct Answer)
- Step-down transformer

76. Which of the following statement is NOT correct regarding 'parallel circuit'?

- The current passing through each resistance is different (if not equal).
- The voltage across each resistance is different. (Correct Answer)
- The total resistance is less than the least resistance connected in the parallel circuit.
- The reciprocal of the total resistance is equal to the reciprocal of the sum of the individual resistance.

77. In the context of cable line supports, what does 'R' stand for in 'RCC' pole?

- Reinforced (Correct Answer)
- Rebounded
- Reframed
- Regular

78. Three inductances of '5 H' each are connected in series. What is the equivalent inductance?

- 10 H
- 5 H
- 20 H
- 15 H (Correct Answer)

79. For a PN Junction, when external d.c. voltage applied to the junction is in such a direction that it cancels the potential barrier, thus permitting current flow, then the process is called ____.

- forward biasing (Correct Answer)
- reverse biasing
- break down voltage
- saturation

80. In the context of transmission and distribution system, which of the following is NOT the disadvantage of AC system?

- Less copper is required. (Correct Answer)
- Greater the length of transmission line more is the capacitance of the line.
- The construction of transmission lines for AC systems is not so easy as for DC systems.
- The alternators are to be synchronized before putting them into parallel.

81. In the context of hydropower plant, _____ carries water from the water source or reservoir to the turbine in a power plant.

- separator
- generator
- evaporator
- penstock (Correct Answer)

82. According to _____, any two terminal bilateral linear DC circuits can be replaced by an equivalent circuit consisting of a voltage source and a series resistor.

- Millman's theorem
- Norton's theorem
- Thevenin's theorem (Correct Answer)
- Superposition theorem

83. _____ is a process of coating of metallic surface with a harder metal by electro-deposition in order to increase its durability.

- Electro-forming
- Electro-typing
- Electro-parting
- Electro-facing (Correct Answer)

84. 'Power factor' is the _____ of the angle between the voltage and current in any AC circuit.

- tan
- cot
- sine
- cosine (Correct Answer)

85. A/An _____ behaves as a short-circuited coil in steady state, when direct steady current flows through it.

- resistor
- insulator
- capacitor
- inductor (Correct Answer)

86.

Match the following illumination elements in List I with their definition in List II.

	List-I Illumination elements		List-II Definition
I	Lamp efficiency	1	It is the ratio of the power input to the average candle power.
II	Specific consumption	2	It is the ratio of the luminous flux to the power input.
III	Depreciation factor	3	It is the ratio of initial metre candles to the ultimate maintained metre candles on the working plane.

- I-3, II-2, III-1
- I-1, II-2, III-3
- I-1, II-3, III-2
- I-2, II-1, III-3 (Correct Answer)

87.

Which of the following is the objective of 'earthing'?

I. For providing ground connections for grounded neutral systems.

II. For the safety of the equipment and personnel against lightning and voltage surges.

- Only II
- Neither I nor II
- Both I and II (Correct Answer)
- Only I

88. What is the correct expression of the 'Nominal Current Transformer ratio (N)'?

- $\frac{\text{Number of primary turns}}{(\text{Number of secondary turns})^2}$
- $\frac{\text{Number of secondary turns}}{\text{Number of primary turns}}$ (Correct Answer)
- $\frac{\text{Number of primary turns}}{\text{Number of secondary turns}}$
- $\frac{(\text{Number of primary turns})^2}{\text{Number of secondary turns}}$

89. 'Soldering the iron' works on which of the following effect of electric current?

- Chemical effect
- Heating effect (Correct Answer)
- X-ray effect
- Magnetic effect

90. Which of the following law states that "the emissive power of a black body is directly proportional to fourth power of its absolute temperature"?

- Fourier's law
- Wien's law
- Kirchhoff's law
- Stefan-Boltzmann law (Correct Answer)

91.

Which of the following are the essentials of any good lighting system?

I. Adequate illumination of suitable color on the working surface.

II. Avoidance of hard shadows.

- Only II
- Only I
- Both I and II (Correct Answer)
- Neither I nor II

92. Toroid is just a helix bent into a _____ form.

- triangular
- circular (Correct Answer)
- rectangular
- linear

93.

Which of the following statement is correct regarding magnetomotive force (m.m.f.)?

I. It drives flux in a magnetic circuit.

II. An 'N'-turn coil carrying a current 'I' amperes has magnetomotive force equal to 'IN' ampere-turns.

- Only II
- Both I and II (Correct Answer)
- Neither I nor II
- Only I

94. The CRO is a very useful laboratory instrument used for display, measurement and analysis of waveforms and other phenomena in electrical and electronic circuits. What does 'O' stand for in 'CRO'?

- Object
- Observer
- Ohmmeter
- Oscilloscope (Correct Answer)

95.

In the context of property of resonance of RLC series circuit, frequency of resonance (f_0) is given by _____. (where L is pure inductance element and C is pure capacitance element)

- $\frac{1}{2\pi LC}$ (Correct Answer)
- $2\pi\sqrt{LC}$
- $\frac{\sqrt{LC}}{2\pi}$
- $2\pi LC$

96. Which of the following is the unit of the luminous flux?

- Stokes
- Mole
- Radian
- Lumen (Correct Answer)

97.

Which of the following is correct regarding slip in an induction motor? (where ' N_s ' be the synchronous speed and ' N ' be the actual speed of rotor)

- $SLIP = \frac{N_s - N}{N_s}$ (Correct Answer)
- $SLIP = \frac{N_s}{N}$
- $SLIP = N_s + N$
-

$$SLIP = N_s \times N$$

○

98. Sodium vapour lamp is of _____ luminosity so the length of this lamp is _____.

- high, small
- low, large (Correct Answer)
- low, small
- high, large

99. The process of adding impurities in a semi-conductor is known as _____.

- extraction
- balancing
- processing
- doping (Correct Answer)

100.

Which of the following statements is correct regarding Kirchhoff's Law?
 I. The algebraic sum of the currents at any junction of a network is zero.
 II. In any closed electric circuit, the algebraic sum of the potential drops is equal to the sum of the impressed e.m.fs.

- Only II
- Neither I nor II
- Only I
- Both I and II (Correct Answer)

101.

Match the following instruments in List I with their uses in List

II.

	List-I Instrument		List-II Use
I	Ammeter	1	It is connected in series in the circuit whose current is to be measured.
II	Voltmeter	2	It is connected in parallel with the circuit whose voltage is to be measured.
III	Ohmmeter	3	It is used for measurement of resistance.

- I-3, II-2, III-1
- I-1, II-2, III-3 (Correct Answer)
- I-2, II-1, III-3
- I-3, II-1, III-2

102.

Which of the following motor is used for electrical drive?

- I. DC shunt, series and compound motor
- II. Three phase induction motor

- Only II
- Neither I nor II
- Only I
- Both I and II (Correct Answer)

103. 1 Angstrom unit (Å) is equal to how many meters (m)?

- 10^5
- 10^{10}
- 10^{-5}
- 10^{-10} (Correct Answer)

104. The best possible power factor of an induction motor operating near its full load capacity is about _____ lag.

- 1.72
- 0.86 (Correct Answer)
- 0.37
- 0.15

105. If three resistances 10Ω, 20Ω, 40Ω respectively are connected in parallel, then what will be the equivalent resistance (Ω)?

- 40/7 (Correct Answer)
- 7/40
- 70
- 40

106. Electric arc welding cannot be done with which of the following method?

- Carbon arc welding
- Atomic hydrogen welding
- Shielding arc welding
- Non-metallic arc welding (Correct Answer)

107.

Which of the following is the type of 'power factor meter'?

- I. Electrodynamometer type
- II. Moving iron type

- Both I and II (Correct Answer)
- Only II
- Only I
- Neither I nor II

108.

Which of the following factors should be considered for selection of cables?

- I. Current carrying capacity
- II. Short-circuit rating

- Only II
- Neither I nor II
- Both I and II (Correct Answer)
- Only I

109.

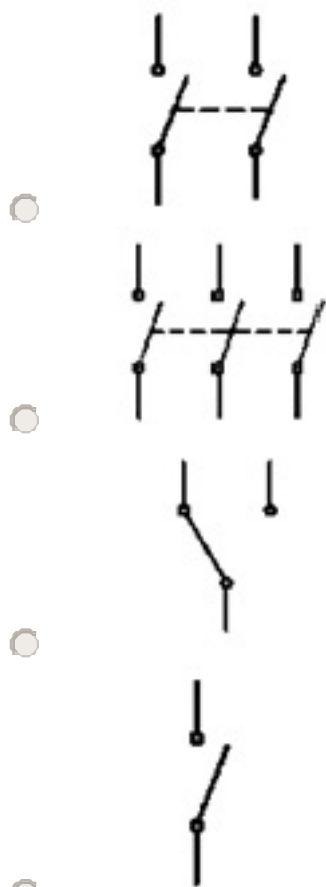
Which of the following statements is correct regarding 'series circuit'?

- I. There is only one path for the current to flow.
- II. Total resistance is equal to the sum of its individual resistance.

- Both I and II (Correct Answer)
- Only I
- Only II

- Neither I nor II

110. Which of the following symbol is used in the circuit diagram for one-way switch, single pole?



(Correct Answer)

111.

Which of the following statements is correct regarding energy?

- I. Energy is capacity for doing work.
- II. For commercial purpose, energy is measured in 'watt hours' and 'kilowatt hours'.

- Only I
- Neither I nor II
- Both I and II (Correct Answer)
- Only II

112. Common Collector' transistor connection is used for _____.

- impedance matching (Correct Answer)
- low frequency applications
- high frequency applications
- audio frequency applications

113. Which of the following voltage is NOT used for primary distribution in India?

- 6.6 kV
- 11 kV
- 17 kV (Correct Answer)
- 3.3 kV

114. Which of the following is NOT correct regarding underground system?

- In underground system, there is no interference to communication circuits.
- Voltage drop is low in underground system as compared to overhead system.
- In underground system surge effect is smoothened down as surge energy is absorbed by the sheath.
- Underground system is more flexible than overhead system. (Correct Answer)

115. Which of the term used in D.C. motor expresses the turning or twisting movement of force about an axis?

- Flux
- Electro motive force
- Speed
- Torque (Correct Answer)

116.

In solid, the heat is conducted by which of the following mechanisms?

I. Lattice vibration

II. Transport of free electrons

- Both I and II (Correct Answer)
- Only I
- Neither I nor II
- Only II

117. DC generator is a machine which converts the _____.

- heat power into mechanical power
- sound power into mechanical power
- mechanical power into electrical power (Correct Answer)
- solar power into electrical power

118.

Which of the following statements is correct regarding an 'Auto-transformer'?

I. Auto-transformer is a winding transformer in which the whole windings forms the primary to which a voltage is applied.

II. The function of an auto-transformer in a starter is to give required reduced voltage to the motor at starting.

- Both I and II (Correct Answer)
- Only I
- Neither I nor II
- Only II

119. How many sections of doped semi-conductor are present in a transistor (pnp or npn)?

- 3 (Correct Answer)
- 2
- 1
- 4

120.

In a synchronous machine, if a rotor runs at synchronous speed ' N_s ' and ' P ' is the number of field poles, then what is the 'frequency (f)' of the e.m.f. generated in armature?

$f = \frac{P^2 N_s}{60} \text{ Hz}$

$f = \frac{P N_s}{180} \text{ Hz}$

$f = \frac{P N_s}{120} \text{ Hz}$ (Correct Answer)

$f = \frac{\sqrt{P N_s}}{120} \text{ Hz}$

121. In the context of phasor diagram for voltage and current in Star Connection, 'line voltage magnitude' is

_____ times the 'phase voltage magnitude'.

- $\sqrt{2}$
- $\sqrt{3}$ (Correct Answer)
- 2
- 3

122. A capacitor has a capacitance of $4\mu\text{F}$. Calculate the stored energy in it if DC voltage of 100 V is applied across it.

- 2×10^{-2} joules (Correct Answer)
- 2.5×10^{-2} joules
- 5×10^{-2} joules
- 6×10^{-2} joules

123. The brush contact loss for Wound Rotor Induction Motor (WRIM) is equal to _____.

- $\frac{1 \text{ volt}}{\text{Slip-ring current}}$
- Slip-ring current + 1 volt
- Slip-ring current \times 1 volt (Correct Answer)
- Slip-ring current - 1 volt

124. Which of the following is NOT the property of magnet?

- Like poles repel and unlike poles attract each other.
- The magnet always attracts iron and its alloys.
- If a magnet is broken into pieces, each piece becomes an independent magnet.
- A magnet never loses its properties when it is heated. (Correct Answer)

125. The unit of potential difference is _____.

- ohm
- weber
- faraday
- volt (Correct Answer)

126. Which of the following material is NOT an example of conductor?

- Copper
- Aluminium
- Iron
- Mica (Correct Answer)

127. Transformers up to a size of _____, used to step down the distribution voltage to a standard service voltage, are known as distribution transformers.

- 100 kVA
- 120 kVA
- 50 kVA
- 200 kVA (Correct Answer)

128. Current (i) is equivalent to _____. (where 'q' is charge and 't' is time)

- q/t^{-2}
- q/t^2
- q/t^3
- q/t (Correct Answer)

129.

Inductive reactance (X_L) is equal to _____. (where 'f' is supply frequency and 'L' is pure inductance element)

- fL
- $\frac{fL}{2\pi}$
- $2\pi fL$ (Correct Answer)
- $\frac{2\pi}{fL}$

130. In the context of DC machine, which of the following is NOT the method of limiting the effect of armature reaction?

- Low-reluctance pole tips (Correct Answer)
- Strong main-field flux
- Compensating winding
- Reduction in armature flux

131.

Which of the following statements is correct regarding 'diamagnetic material'?

- I. If the permeability is less than unity, substances are known as diamagnetic materials.
- II. Diamagnetic materials are repelled by magnets.

- Only II
- Only I (Correct Answer)
- Both I and II
- Neither I nor II

132. A flow of electrons is known as _____.

- electric current (Correct Answer)
- potential difference
- resistance
- electric flux

133.

Which of the following is the essential element of estimating and costing of electrical design?

- I. Specification of material
- II. Labour cost
- III. Knowledge of purchase system

- Only I
- Only II
- Only I and II
- I, II and III (Correct Answer)

134.

Match the element of estimating and costing of electrical design in List I with their definition in List II.

	List-I Element of estimating and costing		List-II Definition
I	Price list	1	It is available in the market includes terms and conditions of the suppliers along with the price of material.
II	Net price	2	It is price of an item in which all the imposed taxes such as sale tax, excise duty etc. are included.
III	Market cost	3	It is that cost of the material at which it can be purchased or brought to the store at any time.

- I-3, II-2, III-1
- I-1, II-2, III-3 (Correct Answer)
- I-1, II-3, III-2
- I-3, II-1, III-2

135. 1 Horsepower (H.P) is equal to ____.

- 746 W (Correct Answer)
- 1012 W
- 646 W
- 512 W

136. The unit of magnetic flux density is ____.

-
- (Correct Answer)
-
-

137.

Which of the following statements is correct regarding 'series circuit'?

- I. The current passing through all the resistances will be the same and equal to the main current.
- II. The total resistance is greater than the greatest resistance connected in the series circuit.

- Both I and II (Correct Answer)
- Only II
- Neither I nor II
- Only I

138. Which of the following is NOT correct regarding parts of DC machine?

- 'Commutator' can never convert AC to DC. (Correct Answer)
- The purpose of the 'commutator' is to take in and give out the currents from the armature.
- 'Yoke' supports the field winding.
- The purpose of 'armature' is to rotate the conductors in the uniform magnetic field.

139. Which of the following expression is correct regarding power (P)? (where 'W' denotes work and 't' denotes time)

- $W \times t^2$
- (W/t) (Correct Answer)
- $W \times t^{-2}$
- $W \times t$

140. Two capacitances of '2 F' each are connected in series. What is the 'equivalent capacitance'?

- 8 F
- 4 F
- 1 F (Correct Answer)
- 2 F

141. _____ is a metal plate, pipe or other conductors electrically connected to the general mass of the earth.

- Earth electrode (Correct Answer)
- Earthing lead
- Distribution pillar
- Earth continuity conductor

142. A _____ is a pn junction that exhibits negative resistance between two values of forward voltage.

- Tunnel diode (Correct Answer)
- Varactor diode
- Schottky diode
- Photo diode

143. The minimum size of conductor for house wiring sub-circuits should be _____ for aluminium conductor single strand.

- 1.5 mm^2 (Correct Answer)
- 25 mm^2
- 35 mm^2
- 15 mm^2

144. Which of the following is NOT the type of 'Current Transformer (CT)'?

- Opto-electronic
- Coupling capacitor (Correct Answer)
- Electromagnetic
- Rogowski coil

145.

In the context of symbol used in layout, which of the following is correct regarding given figure?



- Lamp or outlet for lamp
- Earth point
- Push-button or bell-push (Correct Answer)
- Circuit breaker

146. Which of the following is NOT the part of the solar thermal electric power plant?

- Concentrator
- Spreader (Correct Answer)
- Storage system
- Receiver

147.

Which of the following statement is correct regarding copper plating?
I. It is used for iron articles to prevent them from rusting
II. It is used as undercoat for silver and nickel plating

- Only I
- Both I and II (Correct Answer)
- Only II
- Neither I nor II

148.

Which of the following is the starting method of synchronous motor?
I. Auxiliary motor starting
II. Induction motor starting

- Only II
- Both I and II (Correct Answer)
- Only I
- Neither I nor II

149. The speed of DC motor cannot be controlled by which of the following method?

- Rheostatic control
- Frequency control (Correct Answer)
- Thyristor control
- Voltage control

150. Which of the following is NOT the property of an ideal insulating material?

- High permittivity (Correct Answer)
- Ability to withstand moisture and high temperature
- A high electrical strength
- High heat conductivity