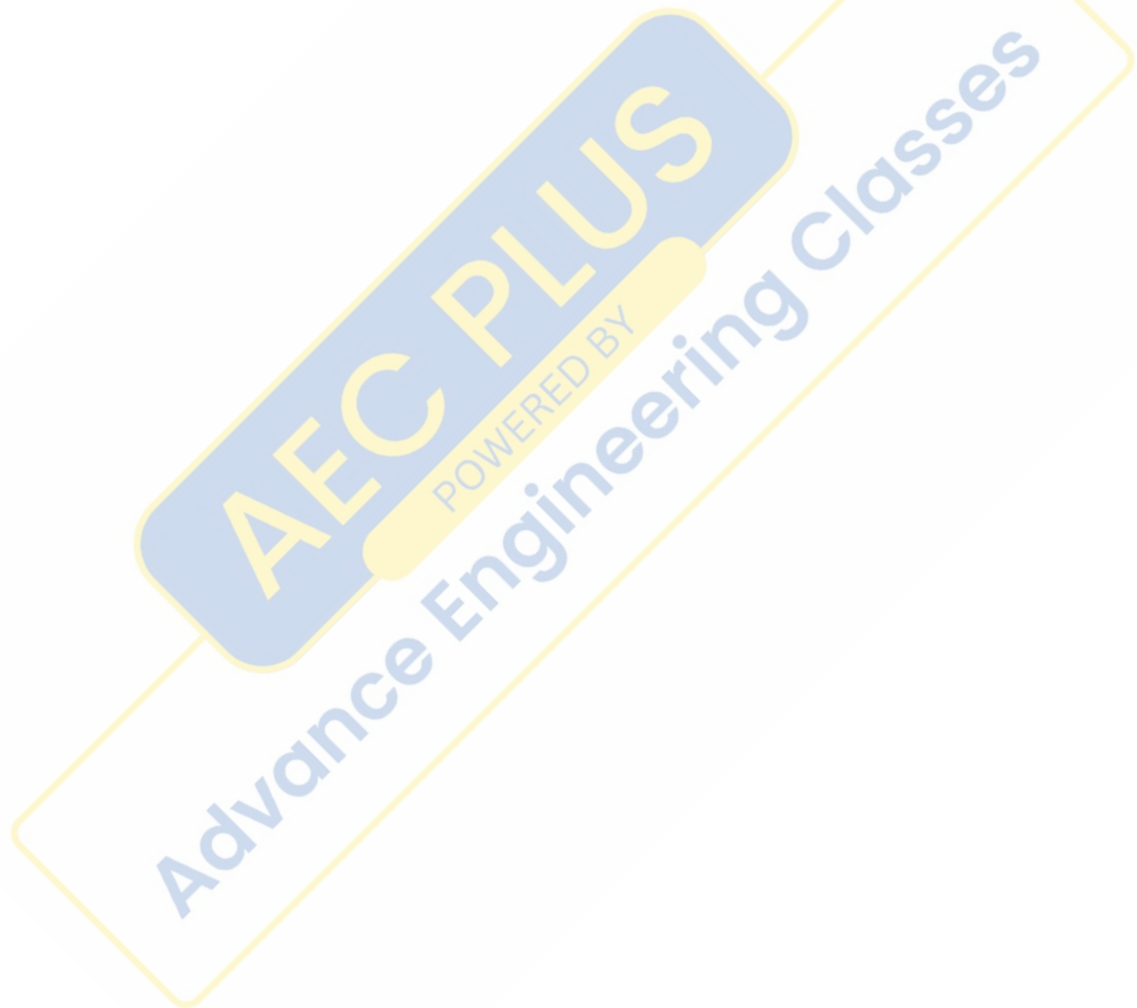


**UPPCL  
JE EE**

**Previous Year Paper  
28 March 2022 Shift 2**





## UTTAR PRADESH POWER CORPORATION LTD.

Participant ID	
Participant Name	
Test Center Name	
Test Date	28/03/2022
Test Time	2:30 PM - 5:30 PM
Subject	Junior Engineer Trainee Electrical

### Section : Domain Knowledge

**Q.1** In this underground cable laying system, conduit or duct of glazed stone or cast iron or concrete are laid in the ground with manholes at suitable positions along the cable route. The cables are then pulled into position from manholes. What is this system?

- Ans**
- A. Traying2 system
  - B. Direct laying
  - C. Draw in system
  - D. Solid system

Question ID : 75322911656

Status : Answered

Chosen Option : C

**Q.2** What physical change will happen to the cathode of the lead acid battery on charging?

- Ans  A. The colour will change to slightly yellow.
- B. The colour will change to slightly white.
- C. The colour will change to chocolate brown.
- D. The colour will change to grey.

Question ID : 75322911578

Status : Answered

Chosen Option : D

**Q.3** A lap connected DC generator has 8 poles and 150 slots with 8 conductors in each slot. If the flux per pole is 0.05 Wb, find the EMF generated when the speed is 800 RPM.

- Ans  A. 1600 V
- B. 400 V
- C. 800 V
- D. 3200 V

Question ID : 75322911574

Status : Answered

Chosen Option : C

**Q.4** In earlier days, little attention was paid to the motivational content of work. When was the importance of the human relations discovered?

- Ans  A. 1937-1942
- B. 1827-1832
- C. 1927-1932
- D. 1837-1842

Question ID : 75322911609

Status : Answered

Chosen Option : C

**Q.5** Good oil in the oil CB of a transformer must withstand certain voltage for one minute, in a standard oil testing cup with 0.15-inch gap between electrodes. How much is this voltage?

- Ans  A. 40 kV  
 B. 20 kV  
 C. 30 kV  
 D. 10 kV

Question ID : 75322911664

Status : Answered

Chosen Option : C

**Q.6** Which of the following is NOT a continuous random variable?

- Ans  A. The tossing of a coin  
 B. Weight  
 C. Temperature  
 D. The lifetime of an electric bulb

Question ID : 75322911551

Status : Answered

Chosen Option : A

**Q.7** Which of the following points are internal causes of overvoltage?

- Ans  A. Switching Surges, Insulation Failure, Arcing Ground and Resonance  
 B. Switching Surges, Insulation Failure, Lightning and Resonance  
 C. Switching Surges, Lightning, Arcing Ground and Resonance  
 D. Switching Surges, Insulation Failure, Arcing Ground and Lightning

Question ID : 75322911615

Status : Answered

Chosen Option : A

**Q.8 Day tank is associated with the fuel supply system of which of the following power generation systems?**

- Ans**  A. Diesel power plant  
 B. Hydroelectric power plant  
 C. Steam power plant  
 D. Gas turbine power plant

Question ID : 75322911595

Status : **Answered**

Chosen Option : **A**

**Q.9 Which of the following is NOT true for an outdoor substation in the power distribution system?**

- Ans**  A. The time required for the erection is more.  
 B. The cost of installation is more.  
 C. More space is required for the erection.  
 D. The dust and dirt are deposited over the equipment.

Question ID : 75322911632

Status : **Answered**

Chosen Option : **A**

**Q.10 Which of the following does NOT help in product forecasting?**

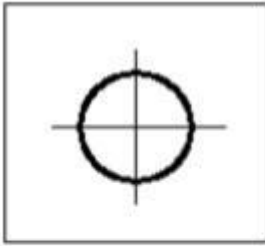
- Ans**  A. Consideration of current events  
 B. Production capability  
 C. Future developments  
 D. Analysis of past data

Question ID : 75322911657

Status : **Answered**

Chosen Option : **B**

Q.11



The given Lissajous pattern is observed in CRO.

What is the phase difference of the applied signals?

- Ans
- A.  $90^\circ$  or  $270^\circ$
  - B.  $180^\circ$
  - C.  $30^\circ$  or  $330^\circ$
  - D.  $0^\circ$

Question ID : 75322911693

Status : Answered

Chosen Option : A

Q.12 Which component in a nuclear power plant reduces the speed of the neutron by absorbing its energy?

- Ans
- A. Shielding
  - B. Control rod
  - C. Coolant
  - D. Moderator

Question ID : 75322911652

Status : Answered

Chosen Option : D

**Q.13** In which type of DC-link configuration are poles operated in parallel which reduces the insulation cost?

- Ans  A. Monopolar link  
 B. Bipolar link  
 C. Unipolar link  
 D. Homopolar link

Question ID : 75322911601

Status : Answered

Chosen Option : D

**Q.14** After the SCR is latched on, a certain minimum value of anode current is needed to maintain conduction. If the anode current is reduced below this minimum value, the SCR will turn OFF. What is this current called?

- Ans  A. Surge current  
 B. Peak repetitive forward blocking voltage  
 C. Holding current  
 D. Latching current

Question ID : 75322911586

Status : Answered

Chosen Option : C

**Q.15** Which type of motor is used for the improvement of the power factor in case the static capacitor is expensive for the power system?

- Ans  A. DC compound motor  
 B. Three-phase induction motor  
 C. DC shunt motor  
 D. Synchronous motor

Question ID : 75322911624

Status : Answered

Chosen Option : D

Q.16 What is the command for 'Identify current directory' in MATLAB?

- Ans  A. Rmdir  
 B. Cd  
 C. Dir  
 D. Pwd

Question ID : 75322911639

Status : **Not Attempted and  
Marked For Review**

Chosen Option : --

Q.17 What is the reason that, both AC and DC values can be measured with moving iron instruments?

- Ans  A. The current flows in both directions  
 B. There is no magnetic effect  
 C. The polarity reverses automatically  
 D. The deflection is proportional to the square of the current

Question ID : 75322911554

Status : **Answered**

Chosen Option : D

Q.18 Sinusoidal voltages applied to X and Y plates of a CRO is having a phase difference of  $90^\circ$ . Which Lissajous pattern will be formed in the CRO screen?

- Ans  A. Straight line in quadrants 1 and 3  
 B. Circle, covering all 4 quadrants equally  
 C. Straight line in quadrants 2 and 4  
 D. Ellipse in quadrants 1 and 3

Question ID : 75322911559

Status : **Answered**

Chosen Option : B



**Q.19** What is the main application of long time over current relays?

- Ans  A. For rapid short-circuit current drops
- B. As backup earth fault protection
- C. As protection of distribution feeders
- D. Where the fault magnitude is mainly dependent on the system generating capacity at the time of fault

Question ID : 75322911665

Status : Answered

Chosen Option : B

**Q.20** Find the probability of the binomial distribution whose mean is 3 and variance is 2.

- Ans  A.  $\frac{1}{6}$
- B.  $\frac{2}{3}$
- C.  $\frac{1}{3}$
- D.  $\frac{1}{2}$

Question ID : 75322911674

Status : Answered

Chosen Option : C

**Q.21 Which of the following is used for starting high intensity Metal Halide and Sodium vapour lamps?**

- Ans  A. Illuminance  
 B. Ballast  
 C. Luminaire  
 D. Igniters

Question ID : **75322911631**  
Status : **Answered**  
Chosen Option : **D**

**Q.22 Which of the following is widely used for switching off power signals as a static circuit breaker?**

- Ans  A. TRIAC  
 B. Thyristor  
 C. Tunnel diode  
 D. DIAC

Question ID : **75322911588**  
Status : **Not Answered**  
Chosen Option : --

**Q.23 Where can we employ high resistance methods of arc extinction?**

- Ans  A. Only in AC circuit breakers  
 B. In DC circuit breakers and low-capacity AC circuit breakers  
 C. Only in DC circuit breakers  
 D. In AC circuit breakers and low-capacity DC circuit breakers

Question ID : **75322911613**  
Status : **Answered**  
Chosen Option : **B**

Q.24 A 4-pole, 3-phase star connected alternator has 48 slots. The coil span is 150 electrical degrees. Determine the distribution factor.

- Ans  A. .931  
 B. .836  
 C. .866  
 D. .961

Question ID : 75322911660

Status : Answered

Chosen Option : D

Q.25 The energy available due to the difference in water temperature (between the surface of the tropical ocean and at a deeper level) is known as Ocean thermal energy (OTE). What is the minimum temperature required for operating OTE power plants?

- Ans  A. 50° C  
 B. 20° C  
 C. 100° C  
 D. 10° C

Question ID : 75322911581

Status : Answered

Chosen Option : B

Q.26 Which of the following is NOT true for wave winding?

- Ans  A. Average pitch = (back pitch + front pitch) / 2.  
 B. No. of parallel paths = No. of poles.  
 C. The back pitch is equal to the front pitch.  
 D. The back pitch and front pitch should be odd.

Question ID : 75322911573

Status : Answered

Chosen Option : B

**Q.27 Which tool is used for the movement of a component, tag, wire number etc. along the connected wire in AutoCAD?**

- Ans**
- A. Deviate tool from the Transform Component drop-down
  - B. Scoot tool from the Transform Component drop-down
  - C. Move tool from the Transform Component drop-down
  - D. Transfer tool from the Transform Component drop-down

Question ID : 75322911641

Status : **Answered**

Chosen Option : **B**

**Q.28 Which type of heating is normally used for hardening, annealing and tempering of machine parts?**

- Ans**
- A. Indirect resistance heating
  - B. Eddy current heating
  - C. Direct arc heating
  - D. Infrared heating

Question ID : 75322911637

Status : **Answered**

Chosen Option : **B**

**Q.29 What is the measure of maximum disruptive stress with an overhead transmission system?**

- Ans**
- A. The maximum voltage between parallel running conductors
  - B. The size of the conductor
  - C. The maximum voltage between conductor and earth
  - D. Insulation between parallel running conductors

Question ID : 75322911598

Status : **Answered**

Chosen Option : **C**

**Q.30 Which of the following is NOT true for metal arc welding?**

- Ans  A. The electric supply is connected between an electrode and a workpiece.
- B. Only DC supply can be used.
- C. No need for filler material.
- D. The electrode also serves the purpose of a filter.

Question ID : 75322911638

Status : Answered

Chosen Option : B

**Q.31 What is the output voltage of the distribution transformer?**

- Ans  A. 33 kV
- B. 132 kV
- C. 11 kV
- D. 400 V

Question ID : 75322911597

Status : Answered

Chosen Option : D

**Q.32 Which of the following is NOT true for a three-phase transformer?**

- Ans  A. It is slightly more efficient.
- B. It is cheaper.
- C. It takes more space.
- D. It has a three-limbed core.

Question ID : 75322911576

Status : Answered

Chosen Option : C

**Q.33 What is the ultimate objective of industrial management?**

- Ans  A. To make the best qualities of finished goods.
- B. To make the industry maximum profitable.
- C. To make the maximum quantity of production.
- D. to produce the right quantity of right quality goods at the right time.

Question ID : **75322911610**

Status : **Answered**

Chosen Option : **D**

**Q.34 Which of the following is NOT true for AC power transmission?**

- Ans  A. AC voltage can be stepped up or stepped down by transformers with ease and efficiency.
- B. AC power can be generated at high voltages.
- C. The maintenance of AC sub-stations is easy and cheaper
- D. AC line requires less copper than a DC line.

Question ID : **75322911599**

Status : **Answered**

Chosen Option : **D**

**Q.35 Which of the following may be defined as the voltage that appears across the breaking contact at the instant of arc extinction?**

- Ans  A. Restriking voltage
- B. Arc voltage
- C. Recovery voltage
- D. Active recovery voltage

Question ID : **75322911614**

Status : **Answered**

Chosen Option : **A**

Q.36 The effective resistance of a 2200 V, 50 Hz, 440 KVA, single phase alternator is  $0.5 \Omega$ . On a short circuit, a field current of 40 A gives the full load current of 250 A. The EMF on an open circuit with the same field current excitation is 1000 V. Calculate the synchronous reactance?

- Ans
- A.  $2.78 \Omega$
  - B.  $8 \Omega$
  - C.  $4 \Omega$
  - D.  $3.96 \Omega$

Question ID : 75322911621

Status : Answered

Chosen Option : D

Q.37 What are the given buttons known as in AutoCAD?



- Ans
- A. Annotation buttons
  - B. Radio buttons
  - C. Metric buttons
  - D. Imperial buttons

Question ID : 75322911698

Status : Answered

Chosen Option : A

**Q.38** In a voltage regulator, a pair of vibrating contacts short circuits a portion of the resistance in the field circuit intermittently. What type of voltage regulator is it?

- Ans**
- A. Carbon pile voltage regulator
  - B. Brown Boveri regulator
  - C. Zener voltage regulator
  - D. Terrill voltage regulator

Question ID : 75322911628

Status : **Answered**

Chosen Option : **D**

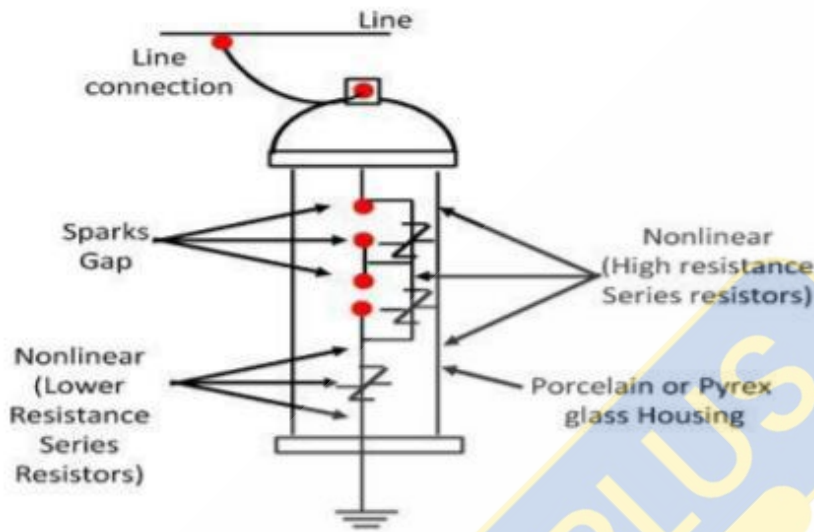
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Q.39 Select the correct type of lightning arrester from the given figure.



- Ans
- A. Oxide film arrester
  - B. Expulsion type lightning arrester
  - C. Metal oxide lightning arrester/gapless lightning arrester
  - D. Valve type lightning arrester

Question ID : 75322911697

Status : Answered

Chosen Option : D

**Q.40** Which of the following is defined as the distance in terms of the number of armature conductors in which a coil advances on the back of the armature? (Far end of the commutator)

- Ans  A. Front pitch  
 B. Back pitch  
 C. Coil pitch  
 D. Pole pitch

Question ID : 75322911572

Status : Answered

Chosen Option : B

**Q.41** In a Variable Reluctance (VR) stepper motor, the number of windings in the stator ( $N_w$ ) is 10 and the number of teeth on the rotor ( $N_t$ ) is 8. Calculate the step angle.

- Ans  A.  $9^\circ$   
 B.  $4.5^\circ$   
 C.  $20^\circ$   
 D.  $15^\circ$

Question ID : 75322911645

Status : Answered

Chosen Option : A

**Q.42** Which component in the wind power plant controls the angle of blades whenever the wind changes by rotating the angle of blades to cut the maximum wind?

- Ans  A. Nacelle  
 B. Wind vane  
 C. Pitch drive  
 D. Yaw drive

Question ID : 75322911596

Status : Answered

Chosen Option : C

**Q.43** Which of the following commutations is also known as self-commutation, or resonant commutation or load commutation?

- Ans
- A. Class B commutation
  - B. Class C commutation
  - C. Class A commutation
  - D. Class D commutation

Question ID : 75322911587

Status : Answered

Chosen Option : C

**Q.44** A 132 kV transmission line has the following data:  
Wt. of conductor = 680 kg/km; Length of span = 260 m Ultimate strength = 3100 kg;  
Safety factor = 2.  
What will be the sag?

- Ans
- A. 3.7 m
  - B. 1.85 m
  - C. 5.1 m
  - D. 2.55 m

Question ID : 75322911654

Status : Answered

Chosen Option : A

**Q.45** The production of polarisation by the application of mechanical stress is known as piezoelectricity. What is the reverse phenomenon termed as?

- Ans
- A. Electrostriction
  - B. Electrostatic
  - C. Recombination
  - D. Diffusion

Question ID : 75322911562

Status : Answered

Chosen Option : A

Q.46 Pulse width modulated voltage source inverter is a variable frequency converter with a:

- Ans  A. thyristor rectifier  
 B. diode inverter  
 C. thyristor inverter  
 D. diode rectifier

Question ID : 75322911651  
Status : Answered  
Chosen Option : D

Q.47 A stepping motor has 8 main poles which have been castellated to have 4 teeth each. If the rotor has 45 teeth, calculate the stepping angle.

- Ans  A. 2.75°  
 B. 3.25°  
 C. 1.8°  
 D. 2.4°

Question ID : 75322911663  
Status : Not Answered  
Chosen Option : --

Q.48 Which of the following is NOT true about a three-phase squirrel cage induction motor?

- Ans  A. A squirrel cage induction motor is used in lathes and drilling machines.  
 B. Rotor copper losses are high and hence less efficient.  
 C. These motors require less maintenance.  
 D. Its construction is very simple and rugged.

Question ID : 75322911622  
Status : Answered  
Chosen Option : B

**Q.49** What is the voltage range for which screened cable is suitable for underground power transmission?

- Ans**  A. 22 kV to 66 kV  
 B. Beyond 66 kV  
 C. Up to 11 kV  
 D. 11 kV to 22 kV

Question ID : 75322911603

Status : Answered

Chosen Option : A

**Q.50** The distance travelled by a particle in time 't' seconds is given by  $s = t^2 - 12t + 3$ . Find the time 't' when the velocity becomes zero.

- Ans**  A. t = 9 sec  
 B. t = 3 sec  
 C. t = 6 sec  
 D. t = 12 sec

Question ID : 75322911671

Status : Answered

Chosen Option : C

**Q.51** The output of the line frequency converters, also called the phase-controlled converters, contains an AC ripple that is a multiple of \_\_\_\_ line frequency.

- Ans**  A. 50 Hz  
 B. 25 Hz  
 C. 10 Hz  
 D. 20 Hz

Question ID : 75322911590

Status : Answered

Chosen Option : A

**Q.52** What should be the cross section of the earth continuity conductor?

**Ans**  A.

It should not be either less than  $2.9 \text{ mm}^2$  or half of the installation conductor size.

B.

It should not be either less than  $1.9 \text{ mm}^2$  or half of the installation conductor size.

C.

It should not be either less than  $0.9 \text{ mm}^2$  or half of the installation conductor size.

D.

It should not be either less than  $3.9 \text{ mm}^2$  or half of the installation conductor size.

Question ID : 75322911679

Status : Answered

Chosen Option : A

**Q.53** A burnt motor is rewound with a lower sized conductor (compared to the original one). How will it affect the losses in stators when the conductor size is reduced by 50%?

**Ans**  A. Losses in stators will increase by 50%.

B. Losses in stators will increase by 100%.

C. Losses in stators will increase by 200%.

D. Losses in stators will increase by 300%.

Question ID : 75322911606

Status : Answered

Chosen Option : D

Q.54 Which theory presumes that any given activity delineated in a network is unlikely to be completed on time?

- Ans  A. CPM  
 B. PERT  
 C. Gnat chart  
 D. Bar chart

Question ID : 75322911611

Status : Answered

Chosen Option : B

Q.55 Evaluate.  $\int x^2 \cos 3x \, dx$

- Ans  A.  $(X^2) \frac{\sin 3x}{3} + (2X) \frac{\cos 3x}{3} - (2) \frac{\sin 3x}{27} + C$   
 B.  $(X^2) \frac{\sin 3x}{3} + (X) \frac{\cos 3x}{3} - (2) \frac{\sin 3x}{27} + C$   
 C.  $(X^2) \frac{\sin 3x}{3} + (2X) \frac{\cos 3x}{3} - \frac{\sin 3x}{27} + C$   
 D.  $(X) \frac{\sin 3x}{3} + (2) \frac{\cos 3x}{3} - \frac{\sin 3x}{27} + C$

Question ID : 75322911691

Status : Answered

Chosen Option : C

**Q.56** Which of the following is a disadvantage of ball bearings?

- Ans  A. They produce more noise.  
 B. Their life is short.  
 C. They have high friction loss.  
 D. They require more maintenance.

Question ID : 75322911635

Status : Answered

Chosen Option : A

**Q.57** What is the resistivity of insulators at room temperature?

- Ans  A. Between  $10^5$  to  $10^9$  ohm cm  
 B. Between  $10^{18}$  to  $10^{32}$  ohm cm  
 C. Between  $10^3$  to  $10^5$  ohm cm  
 D. Between  $10^9$  to  $10^{18}$  ohm cm

Question ID : 75322911675

Status : Answered

Chosen Option : D

**Q.58** A 12-pole 3  $\phi$  alternator driver at speed of 500 RPM supplies power to an 8 pole 3  $\phi$  induction motor. Calculate the speed if the slip of the motor is 0.03.

- Ans  A. 627.5 RPM  
 B. 635.5 RPM  
 C. 835.5 RPM  
 D. 727.5 RPM

Question ID : 75322911686

Status : Answered

Chosen Option : D



**Q.59** 'Two-watt meter' method is used to measure the power of a three-phase balanced load. The reading of the first and second wattmeter is 20 watts and 10 watts, respectively. What is the power factor of the load?

- Ans  A. 0.866  
 B. 0  
 C. 0.5  
 D. 1

Question ID : 75322911558  
Status : Answered  
Chosen Option : A

**Q.60** Which part of the underground cable helps to protect the cable from moisture, gases or other damaging liquids (acids or alkalis) in the soil?

- Ans  A. Armouring  
 B. Insulation  
 C. Metallic sheath  
 D. Serving

Question ID : 75322911604  
Status : Answered  
Chosen Option : C

**Q.61** What is the normal gap between the rotor and the stator of a motor?

- Ans  A. Few mils to 5 mils  
 B. Few mils to 15 mils  
 C. Few mm to 15 mm  
 D. Few mils to 50 mils

Question ID : 75322911666  
Status : Answered  
Chosen Option : D

Q.62 The presence of extra atoms between the regular atoms of the crystal as an interstitial in a semiconductor is known as a/an \_\_\_\_\_ defect.

- Ans  A. Frenkel  
 B. Avalanche  
 C. Tunnel  
 D. Schottky

Question ID : 75322911564  
Status : Answered  
Chosen Option : A

Q.63 Evaluate  $\int_0^{\pi/2} \sin x \, dx$

- Ans  A. 0  
 B. 1  
 C. Infinite  
 D. Cos x

Question ID : 75322911669  
Status : Answered  
Chosen Option : B

Q.64 What is the approximate efficiency of a hydroelectric power plant?

- Ans  A. 45%  
 B. 95%  
 C. 65%  
 D. 85%

Question ID : 75322911594  
Status : Answered  
Chosen Option : D

**Q.65** A type of arrester barrier consists of two sphere electrode  $S_1$  and  $S_2$  which are connected, respectively, to the line and the arrester. The auxiliary needle is placed between the mid of two sphere  $S_1$  and  $S_2$ . What type of lightning arrester is it?

- Ans**
- A. Expulsion Type Lightning Arrester
  - B. Impulse Protective Gap Arrester
  - C. Horn Gap Arrester
  - D. Auto valve Arrester

Question ID : 75322911683  
Status : Answered  
Chosen Option : C

**Q.66** What is the ratio of space required Gas (SF<sub>6</sub>) insulated substation to that of air insulated substation for power distribution?

- Ans**
- A. 1 : 8
  - B. 1 : 10
  - C. 1 : 5
  - D. 1 : 2

Question ID : 75322911633  
Status : Answered  
Chosen Option : B

**Q.67** Which of the following is NOT applicable to the disadvantages of moving coil instruments?

- Ans**
- A. Used for DC measurement only
  - B. Error may be produced due to ageing of permanent magnets and control springs
  - C. Hysteresis loss
  - D. High cost

Question ID : 75322911553  
Status : Answered  
Chosen Option : C

Q.68 What are the inputs to the synchronous motor?

- Ans  A. A 3-phase supply to a rotor.
- B. A 3-phase supply to a stator and DC supply to a rotor.
- C. A DC supply to a stator and 3-phase supply to a rotor.
- D. A DC supply to a stator.

Question ID : 75322911623

Status : Answered

Chosen Option : B

Q.69 Evaluate:  $\int x \sin 2x \, dx$

- Ans  A.  $x \cos \frac{2x}{2} + \sin \frac{2x}{4} + c$
- B.  $x \cos \frac{2x}{2} - \sin \frac{2x}{4} + c$
- C.  $-x \cos \frac{2x}{2} + \sin \frac{2x}{4} + c$
- D.  $-x \cos \frac{2x}{2} - \sin \frac{2x}{4} + c$

Question ID : 75322911670

Status : Not Answered

Chosen Option : --

Q.70 Which of the following is NOT true for the Lead sheathed or metal sheathed wiring?

- Ans  A. It can be used in places exposed to sun or rain.
- B. It can be used in damp situation.
- C. It gives a fairly good look.
- D. It can be used where chemical corrosion may occur.

Question ID : 75322911592

Status : Answered

Chosen Option : D

Q.71 How are energy meters calibrated?

- Ans
- A. By radian xytronin meter
  - B. By radian dytronic meter
  - C. By an automated meter testing system
  - D. By rotating the substandard meter

Question ID : 75322911642

Status : Answered

Chosen Option : D

Q.72 Find the direction cosines of the vector  $2\vec{i} + 3\vec{j} - 4\vec{k}$ .

- Ans
- A.  $-\frac{2}{\sqrt{29}}, -\frac{3}{\sqrt{29}}, -\frac{4}{\sqrt{29}}$
  - B.  $-\frac{2}{\sqrt{29}}, -\frac{3}{\sqrt{29}}, \frac{4}{\sqrt{29}}$
  - C.  $\frac{2}{\sqrt{29}}, \frac{3}{\sqrt{29}}, -\frac{4}{\sqrt{29}}$
  - D.  $\frac{2}{\sqrt{29}}, \frac{3}{\sqrt{29}}, \frac{4}{\sqrt{29}}$

Question ID : 75322911668

Status : Answered

Chosen Option : C

Q.73 Thermistor are made up of which materials?

- Ans
- A. Transition metals
  - B. Semiconductors
  - C. Insulating materials
  - D. Alkali metals

Question ID : 75322911569

Status : Answered

Chosen Option : B

**Q.74 How many diodes and SCRs are there in a single-phase half bridge inverter?**

- Ans  A. One diode and two SCRs  
 B. Two diodes and one SCR  
 C. Two diodes and two SCRs  
 D. One diode and one SCR

Question ID : 75322911644

Status : Answered

Chosen Option : C

**Q.75 What is the compression ratio of the air, which is drawn into the cylinder and compressed to heated enough to ignite the injected fuel in the diesel engine?**

- Ans  A. 14 : 1 to 25 : 1  
 B. 4 : 1 to 11 : 1  
 C. 7 : 1 to 14 : 1  
 D. 25 : 1 to 29 : 1

Question ID : 75322911607

Status : Answered

Chosen Option : A

**Q.76 Which of the following is a diamagnetic material?**

- Ans  A. Tungsten  
 B. Graphite  
 C. Neodymium  
 D. Gadolinium

Question ID : 75322911563

Status : Answered

Chosen Option : B

**Q.77 Which of the following is NOT one of the mechanical devices used for reducing particulate pollutants?**

- Ans**
- A. Scrubber
  - B. Electro-static precipitator
  - C. Cyclone separator
  - D. Volatile organic compound

Question ID : 75322911585

Status : Answered

Chosen Option : D

**Q.78 Which of the following is NOT true for a shell type single-phase transformer?**

- Ans**
- A. The core has three limbs.
  - B. The coils used are of the multi-layer disc type or sandwich type
  - C. Both HV and LV windings are placed on a central limb.
  - D. It has a single magnetic circuit.

Question ID : 75322911575

Status : Answered

Chosen Option : D

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Q.79 What are the conditions for the function  $y = f(x)$  to be maximum at  $x = a$ ?

Ans

- A.  $\frac{dy}{dx}$  is positive and  $\frac{d^2y}{dx^2}$  is negative
- B.  $\frac{dy}{dx}$  is negative and  $\frac{d^2y}{dx^2}$  is negative
- C.  $\frac{dy}{dx} = 0$  and  $\frac{d^2y}{dx^2}$  is positive
- D.  $\frac{dy}{dx} = 0$  and  $\frac{d^2y}{dx^2}$  is negative

Question ID : 75322911672

Status : Answered

Chosen Option : C

Q.80 What is the purpose of the copper shading bands provided on the central limb in a single-phase induction type energy meter?

Ans

- A. To reduce eddy current and hysteresis losses.
- B. To bring the flux produced by the shunt magnet exactly in quadrature with the applied voltage.
- C. To act as a counting or registering mechanism.
- D. To provide braking torque.

Question ID : 75322911557

Status : Answered

Chosen Option : C



**Q.81** When did the first discussion on Human Environment take place in UN conferences?

- Ans  A. 5 June 1982  
 B. 5 June 1962  
 C. 5 June 1952  
 D. 5 June 1972

Question ID : 75322911648

Status : Answered

Chosen Option : D

**Q.82** According to Fleming's left-hand rule, which finger represents the direction of the current?

- Ans  A. Middle finger  
 B. Thumb  
 C. Ring figure  
 D. Fore finger

Question ID : 75322911571

Status : Answered

Chosen Option : A

**Q.83** Any three numbers  $p$ ,  $q$ ,  $r$  proportional to the direction cosines of the straight-line AB are called the \_\_\_\_\_ of the straight-line AB.

- Ans  A. direction ratios  
 B. sector ratios  
 C. parallels  
 D. perpendiculars

Question ID : 75322911550

Status : Answered

Chosen Option : A

**Q.84 Which of the following applications is possible with eddy current heating?**

- Ans  A. Manufacturing of synthetics  
 B. Wood processing  
 C. Foundry course baking  
 D. Vacuum tube heating

Question ID : 75322911667

Status : Answered

Chosen Option : B

**Q.85 Earthing for high power installations may require several earth electrodes. How are the electrodes connected if more than one is used?**

- Ans  A. No inter connection  
 B. In series parallel connection  
 C. Parallel to each other  
 D. In series with each other

Question ID : 75322911593

Status : Answered

Chosen Option : C

**Q.86 What is the maintenance cost for an electric locomotive compared to that of a steam locomotive?**

- Ans  A. 60%  
 B. 70%  
 C. 50%  
 D. 40%

Question ID : 75322911636

Status : Answered

Chosen Option : C

Q.87 What is the vertical clearance where a low or medium voltage overhead line passes above the building according to IE rule 79?

- Ans  A. 8 feet from the highest point  
 B. 10 feet from the highest point  
 C. 6 feet from the highest point  
 D. 4 feet from the highest point

Question ID : 75322911591

Status : Answered

Chosen Option : A

Q.88 How is the slot angle for a winding is measured?

- Ans  A.  $\text{Slot angle} = \frac{180^\circ}{\text{Numberpoles}}$   
 B.  $\text{Slot angle} = \frac{180^\circ}{\text{Numberof slots}}$   
 C.  $\text{Slot angle} = \frac{180^\circ}{\text{Numberpoles per slots}}$   
 D.  $\text{Slot angle} = \frac{180^\circ}{\text{Numberslots per pole}}$

Question ID : 75322911685

Status : Answered

Chosen Option : D

**Q.89** How is the air gap between the stator and rotor of the motor measured?

- Ans  A. By vernier caliper  
 B. By micrometer  
 C. By bevel protractor  
 D. By feeler gauge

Question ID : 75322911629

Status : Answered

Chosen Option : D

**Q.90** A 3-phase, 20 HP, 208 V, 6-pole, 50 Hz star connected induction motor delivers 15 kW at 5% slip. Find the frequency of the rotor current.

- Ans  A. 2.5 Hz  
 B. 5 Hz  
 C. 12.5 Hz  
 D. 25 Hz

Question ID : 75322911661

Status : Answered

Chosen Option : A

**Q.91** What are the most important properties of insulating material used electrically?

- Ans  A. Low resistivity and low dielectric strength  
 B. High resistivity and low dielectric strength  
 C. Low resistivity and high dielectric strength  
 D. High resistivity and high dielectric strength

Question ID : 75322911643

Status : Answered

Chosen Option : D

Q.92 Which of the following instruments is an absolute instrument?

- Ans  A. Volt meter  
 B. Tangent galvanometer  
 C. Glass thermometer  
 D. Pressure gauge

Question ID : 75322911552

Status : Answered

Chosen Option : B

Q.93 What will be the EMF equation when a synchronous motor is operating in a lagging power factor?

- Ans  A.  $E_f = [(V_t \cos \phi - I_a R_a)^2 + (V_t \sin \phi - I_a X_a)^2]^{1/2}$   
 B.  $E_f = [(V_t \cos \phi + I_a R_a)^2 + (V_t \sin \phi + I_a X_a)^2]^{1/2}$   
 C.  $E_f = [(V_t \cos \phi - I_a R_a)^2 + (V_t \sin \phi + I_a X_a)^2]^{1/2}$   
 D.  $E_f = [(V_t \cos \phi + I_a R_a)^2 + (V_t \sin \phi - I_a X_a)^2]^{1/2}$

Question ID : 75322911687

Status : Answered

Chosen Option : A

Q.94 When was the programme of the Integrated Child Development Services (ICDS) launched?

- Ans  A. 1955  
 B. 1985  
 C. 1965  
 D. 1975

Question ID : 75322911582

Status : Answered

Chosen Option : D

**Q.95** Which of the following is NOT true for current transformers and potential transformers used in a substation in a power distribution system?

- Ans**
- A. The volt-ampere capacity of a potential transformer is low (100VA) and the voltage ratio is relatively high (132kv/100v).
  - B. The protective relays are connected in the primary circuits of CTs and PTs.
  - C. The current ratio of current transformers is generally high (500A/5A) and volt ampere capacity is relatively low (50 VA) as compared with that of the power transformers.
  - D. The current transformers and voltage transformers are used for transforming the current and voltage to a lower value for the purpose of measurement, protection and control.

Question ID : 75322911634

Status : Answered

Chosen Option : B

**Q.96** Which of the following is a natural pollution?

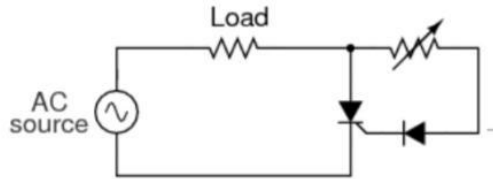
- Ans**
- A. Chemical factories
  - B. Transportation
  - C. Terrestrial dust
  - D. Fuel burning

Question ID : 75322911584

Status : Answered

Chosen Option : C

Q.97



The above figure represents the resistance triggering to control the Gate current of the SCR. What is the maximum firing angle achievable with this?

- Ans
- A.  $180^\circ$
  - B.  $135^\circ$
  - C.  $90^\circ$
  - D.  $45^\circ$

Question ID : 75322911678

Status : Answered

Chosen Option : C

Q.98 Which of the following is defined as the latching current for the SCR?

- Ans
- A. The peak anode current that an SCR can handle for a short duration.
  - B. The minimum DC gate current necessary to turn the SCR ON.
  - C. A minimum anode current must flow through the SCR in order for it to stay ON initially after the gate signal is removed.
  - D. A certain minimum value of anode current needed to maintain conduction.

Question ID : 75322911650

Status : Answered

Chosen Option : C

**Q.99** A moving coil instrument, whose resistance is  $50\ \Omega$ , gives a full-scale deflection with a voltage of  $1\ \text{V}$ . This instrument is to be used with a series multiplier to extend the range to  $50\ \text{V}$ . Find the value of the multiplier resistance.

- Ans
- A.  $2.5\ \text{k}\Omega$
  - B.  $2.25\ \text{k}\Omega$
  - C.  $2.45\ \text{k}\Omega$
  - D.  $2.05\ \text{k}\Omega$

Question ID : 75322911555  
Status : Answered  
Chosen Option : C

**Q.100** Which of the following is NOT one of the essential features of the switchgear?

- Ans
- A. No discrimination
  - B. Complete reliability
  - C. Provision of manual control
  - D. Quick operation

Question ID : 75322911612  
Status : Answered  
Chosen Option : A

**Q.101** What type of energy conversion takes place in a Stepper motor?

- Ans
- A. It converts electrical pulse into discrete mechanical movements.
  - B. It converts electrical energy into linear movements.
  - C. It converts electrical pulse into impulse movements.
  - D. It converts electrical energy into rotary movements.

Question ID : 75322911570  
Status : Answered  
Chosen Option : A



Q.102 What is the material that is most commonly used as an insulator for overhead lines?

- Ans  A. Porcelain  
 B. Fibre glass  
 C. Ebonite  
 D. Perlite

Question ID : 75322911602

Status : Answered

Chosen Option : A

Q.103 What is the material used for armature core in DC machines in order to reduce the hysteresis loss?

- Ans  A. Austenite  
 B. Spring steel  
 C. Silicon steel  
 D. Chrome steel

Question ID : 75322911646

Status : Answered

Chosen Option : C

Q.104 What should be the smallest aluminium conductor (cross sectional area) for the house wiring?

- Ans  A. Not less than  $1.0 \text{ mm}^2$   
 B. Not less than  $2.5 \text{ mm}^2$   
 C. Not less than  $2.0 \text{ mm}^2$   
 D. Not less than  $1.5 \text{ mm}^2$

Question ID : 75322911688

Status : Answered

Chosen Option : D

Q.105 Which of the following is NOT true for the interconnected grid system in power supply?

- Ans
- A. Increases plant reserve capacity
  - B. Increases reliability of supply
  - C. Increases diversity factor
  - D. Makes it possible to use older and less efficient plants

Question ID : 75322911653

Status : Answered

Chosen Option : A

Q. 106 What is the purpose of breather in a three-phase transformer?

- Ans
- A. To remove moisture from the incoming air to the oil tank.
  - B. To remove hot gases from the oil tank.
  - C. To maintain the temperature of the transformer oil.
  - D. To allow air into the oil tank for cooling.

Question ID : 75322911577

Status : Answered

Chosen Option : A

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Q.107 How is the plant capacity factor measured?

- Ans
- A. Capacity factor =  $\frac{\text{Sum of individual maximum demands}}{\text{Maximum demand of entire group}}$
  - B. Capacity factor =  $\frac{\text{Maximum demand of entire group}}{\text{Sum of individual maximum demands}}$
  - C. Capacity factor =  $\frac{\text{Maximum energy that could be generated}}{\text{Actual energy generated}}$
  - D. Capacity factor =  $\frac{\text{Actual energy generated}}{\text{Maximum energy that could be generated}}$

Question ID : 75322911680

Status : Answered

Chosen Option : D

Q.108 A 6-cell, 12 V battery is to be charged at a constant rate of 10 A from a 24 V DC supply. If the EMF of each cell at the beginning and end of the charge is 1.8 V and 2.2 V, respectively, what should be the value of the maximum and minimum resistance connected in series with the battery?

- Ans
- A. Maximum 1.32 Ohm and minimum 1.08 Ohm
  - B. Maximum 1.28 Ohm and minimum 0.56 Ohm
  - C. Maximum 0.64 Ohm and minimum 0.28 Ohm
  - D. Maximum 2.64 Ohm and minimum 1.32 Ohm

Question ID : 75322911579

Status : Answered

Chosen Option : A

**Q.109** What is the term used for emission of electrons from metals by projecting light of sufficiently small wavelength on the metal?

- Ans
- A. Secondary emission
  - B. Field emission
  - C. Photoelectric emission
  - D. Thermionic emission

Question ID : 75322911560

Status : Answered

Chosen Option : C

**Q.110** Two vectors have the same magnitude and the same direction, but they do NOT have the same segment. What are they known as?

- Ans
- A. Collinear vectors
  - B. Position vectors
  - C. Equal vectors
  - D. Resolution vectors

Question ID : 75322911549

Status : Answered

Chosen Option : C

**Q.111** Which insulating materials are generally employed for switch boards and panels?

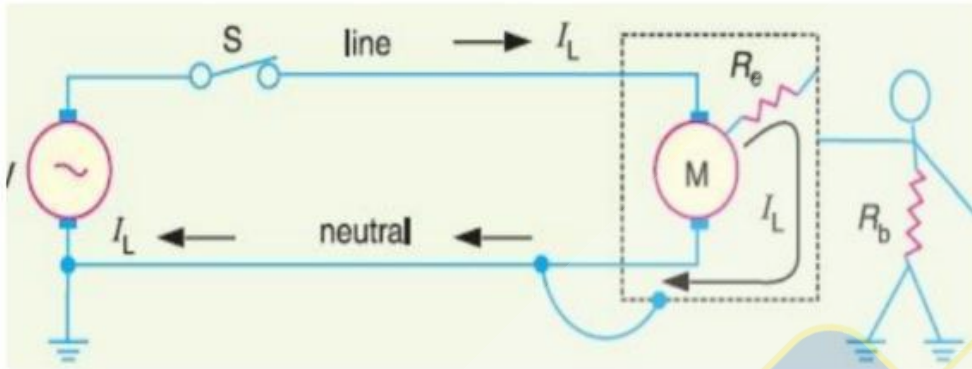
- Ans
- A. Bakelite
  - B. Polyvinylchloride
  - C. Porcelain
  - D. Marble and state

Question ID : 75322911561

Status : Answered

Chosen Option : D

Q.112



What type of equipment grounding is shown in the above figure?

Ans

- A. Ungrounded enclosure
- B. Enclosure connected to a neutral wire
- C. System grounding
- D. Ground wire connected to an enclosure

Question ID : 75322911684

Status : Answered

Chosen Option : B

Q.113 What is the internal barrier voltage of a Silicon diode which opposes the applied voltage?

Ans

- A. 1.1 V
- B. 0.7 V
- C. 0.3 V
- D. 1.3 V

Question ID : 75322911566

Status : Answered

Chosen Option : B

**Q.114 How is the Murray test used to find the fault location in an underground cable?**

- Ans
- A. By making one magnetic amplifier
  - B. By making one operational amplifier circuit
  - C. By making one integrator circuit
  - D. By making one Wheatstone Bridge

Question ID : 75322911605

Status : Answered

Chosen Option : D

**Q.115 What is the instrument used to measure the specific gravity of electrolyte in a cell?**

- Ans
- A. Hygrometer
  - B. Hydrometer
  - C. Refract meter
  - D. Lactometer

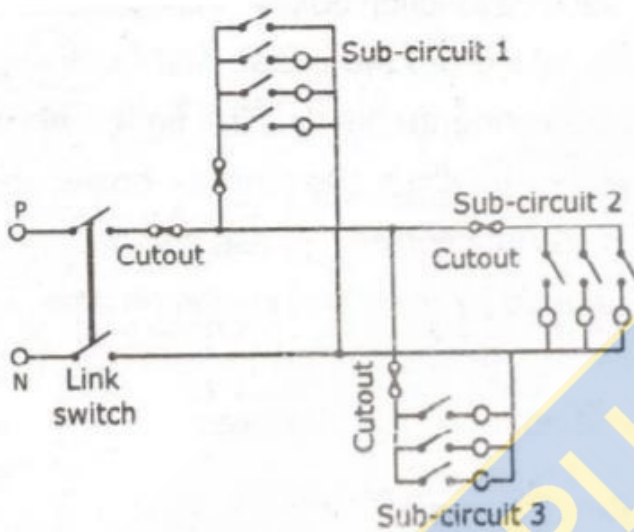
Question ID : 75322911647

Status : Answered

Chosen Option : A

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Q.116 Select the correct method of representation for the given wiring diagram.



- Ans
- A. Looping back system
  - B. Joint box
  - C. Tree system
  - D. Casing system

Question ID : 75322911694

Status : Answered

Chosen Option : C

**Q.117 Ladder programming is the most common programming languages for PLCs. Which of the following is NOT true about the features of the ladder language?**

- Ans**  A. Most PLC allows more than one output for each row (Rung).
- B. Input instructions are entered on the right and output instructions are located on the left.
- C. The Processor (or 'Controller') explores rungs of the ladder from top to bottom and from left to right.
- D. Power rails are the power supply lines L1 and L2 for alternating current circuits and 24 V - earth for DC circuits.

Question ID : 75322911618

Status : Answered

Chosen Option : B

**Q.118 What should be the insulation resistance of the LV side of the 1600 KVA, 20 kV/400 V, three phase, oil filled T/C without oil tank (dry type) at 20°C?**

- Ans**  A. 150 Megaohm
- B. 29.7 Megaohm
- C. 15 Megaohm
- D. 300 Megaohm

Question ID : 75322911627

Status : Answered

Chosen Option : D

**Q.119 What should be the resistance between the consumer earth terminal and earth continuity conductor (at the end)?**

- Ans**  A. Should be less than 0.25  $\Omega$
- B. Should be less than 2  $\Omega$
- C. Should be less than 1  $\Omega$
- D. Should be less than 0.5  $\Omega$

Question ID : 75322911625

Status : Answered

Chosen Option : C



Q.120 Find the equation for the step angle for a stepper motor.

- Ans
- A.  $\text{Step angle} = \frac{180^\circ}{(\text{No. of stator phases} + \text{No. of rotor teeth})}$
- B.  $\text{Step angle} = \frac{180^\circ}{(\text{No. of stator phases} \times \text{No. of rotor teeth})}$
- C.  $\text{Step angle} = \frac{360^\circ}{(\text{No. of stator phases} + \text{No. of rotor teeth})}$
- D.  $\text{Step angle} = \frac{360^\circ}{(\text{No. of stator phases} \times \text{No. of rotor teeth})}$

Question ID : 75322911676

Status : Answered

Chosen Option : D

Q.121 An HVDC substation has more than two converter stations and interconnecting DC terminal lines. What do we call this substation?

- Ans
- A. Multi-terminal DC substation
- B. Point to point system
- C. Multi-terminal point system
- D. Bi-terminal DC substation

Question ID : 75322911600

Status : Answered

Chosen Option : A

**Q.122** Find the formula for the economic voltage between lines in a 3-phase system as per the empirical formula where V is the Line voltage in kV, L is the distance of the transmission line in Km and P is the maximum power per phase to be delivered in a single circuit.

Ans

A.  $V = 5.5 \left( \frac{L}{1.6} + \frac{3P}{10} \right)^{1/2}$

B.  $V = 5.5 \left( \frac{L}{16} + \frac{3P}{100} \right)^{1/2}$

C.  $V = 5.5 \left( \frac{L}{1.6} + \frac{3P}{100} \right)^{1/2}$

D.  $V = 5.5 \left( \frac{L}{16} + \frac{3P}{10} \right)^{1/2}$

Question ID : 75322911681

Status : Answered

Chosen Option : C

**Q.123** Before the Industrial Revolution people worked with hand tools, manufacturing articles in their own homes or in small shops. In the third quarter of the 18th century which power was applied to machinery?

Ans

A. Solar power

B. Steam power

C. Hydraulic power

D. Thermal power

Question ID : 75322911608

Status : Answered

Chosen Option : B

**Q.124** What is the load and for what duration is it applied to insulators for the proof load test?

- Ans**
- A. A load of 40% in excess of the specified maximum working load is applied for about two minutes.
  - B. A load of 20% in excess of the specified maximum working load is applied for about one minute.
  - C. A load of 40% in excess of the specified maximum working load is applied for about one minute.
  - D. A load of 20% in excess of the specified maximum working load is applied for about two minutes.

Question ID : 75322911655

Status : Answered

Chosen Option : B

**Q.125** After the detection of a valid signal in PLC, it passes the signal to logic section through an isolation circuit. What is this isolation circuit made up of?

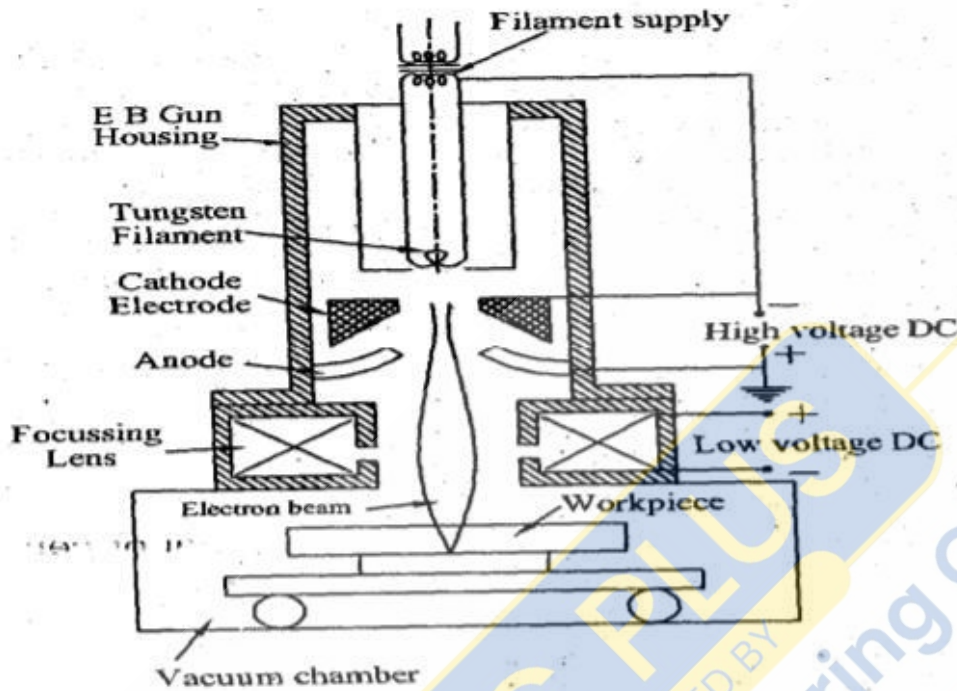
- Ans**
- A. Thyristor
  - B. Chopper
  - C. Opto-coupler
  - D. High pass filter

Question ID : 75322911658

Status : Answered

Chosen Option : C

Q.126



What type of welding is shown in the above figure?

Ans

- A. Inert gas metal arc welding
- B. Laser beam welding
- C. Ultrasonic welding
- D. Electron beam welding

Question ID : 75322911690

Status : Answered

Chosen Option : D

Q.127 Which of the following is a math instruction in PLC?

- Ans
- A. MCR
  - B. GRT
  - C. CPT
  - D. TND

Question ID : 75322911617

Status : Answered

Chosen Option : C

Q.128 What is the main cause of noise, hum sound in the transformer?

- Ans
- A. The core is made up of thin laminations, vibrates because of the alternating magnetic flux, and therefore expands or contracts ever so slightly with each cycle.
  - B. The transformer oil absorbs all the heat generated in the transformer. The sound comes out of the boiling of the oil due to the temperature.
  - C. Transformers are generally mounted loosely with a shock absorber. High currents due to heavy loads cause vibration at the shock absorber.
  - D. The current in coils is very high. The force in the coil is directly proportional to the square of the current. The force causes the noise.

Question ID : 75322911626

Status : Answered

Chosen Option : A

Q.129 What are the conditions for the function  $F(X)$  is said to be the distribution function of the random variable  $X$ ?

- Ans
- A.  $F(X) = P(X \leq x); -\infty \leq x \leq \infty$
  - B.  $F(X) = P(X \geq x); -\infty \leq x \leq \infty$
  - C.  $F(X) = P(X \leq x); -1 \leq x \leq 1$
  - D.  $F(X) = P(X \geq x); -1 \leq x \leq 1$

Question ID : 75322911673

Status : Answered

Chosen Option : A

Q.130 Find the initial velocity, if  $S = 3t^2 - 2t + 3$ .

- Ans
- A. -4
  - B. 2
  - C. -2
  - D. 4

Question ID : 75322911692  
Status : Answered  
Chosen Option : C

Q.131 How is the semiconductor crystal bonded?

- Ans
- A. By Vander wall bond
  - B. By electron-pair bonds
  - C. By forces between protons
  - D. By forces between nuclei

Question ID : 75322911565  
Status : Answered  
Chosen Option : B

Q.132 Which of the following is the lowest level of the automation hierarchy, which includes devices such as actuators and sensors?

- Ans
- A. Field level
  - B. Cell level
  - C. Plant level
  - D. Area level

Question ID : 75322911659  
Status : Answered  
Chosen Option : A

**Q.133 Which of the following is usually defined as a communication satellite within the SCADA system?**

- Ans  A. Tag terminal unit  
 B. Communication terminal unit  
 C. Master terminal unit  
 D. Remote terminal unit

Question ID : 75322911619

Status : Answered

Chosen Option : D

**Q.134 What is the usual KVA rating for Revolving armature type alternator?**

- Ans  A. Very small to very large KVA capacity  
 B. Relatively small KVA capacity  
 C. Medium KVA capacity  
 D. Relatively large KVA capacity

Question ID : 75322911620

Status : Answered

Chosen Option : B

**Q.135 One formal process is used to predict the environmental consequences (positive or negative) of a plan, policy, programme, or project before the decision to move forward with the proposed action. What is the name of the process?**

- Ans  A. Energy impact assessment (EIA)  
 B. Energy issuance assessment (EIA)  
 C. Environmental impact assessment (EIA)  
 D. Environmental issuance assessment (EIA)

Question ID : 75322911583

Status : Answered

Chosen Option : C

**Q.136** A circuit breaker may complete a full short circuit on being closed. This is known as making capacity. How is it calculated?

**Ans**  A. Making capacity =  $\sqrt{3}$  × Symmetrical breaking capacity

B.

Making capacity =  $1.8 \times \sqrt{3}$  × Symmetrical breaking capacity

C.

Making capacity =  $1.8 \times \sqrt{2}$  × Symmetrical breaking capacity

D. Making capacity =  $1.8 \times$  Symmetrical breaking capacity

Question ID : 75322911682

Status : Answered

Chosen Option : C

**Q.137** What should be the cross section of the earth continuity conductor?

**Ans**  A.

Should not be either less than  $2.9 \text{ mm}^2$  or half of the installation conductor size

B.

Should not be either less than  $1.9 \text{ mm}^2$  or same as the installation conductor size

C.

Should not be either less than  $1.9 \text{ mm}^2$  or half of the installation conductor size

D.

Should not be either less than  $2.9 \text{ mm}^2$  or same as the installation conductor size

Question ID : 75322911695

Status : Answered

Chosen Option : A



**Q.138 Find the range of speed at which synchronous machines are most economical.**

- Ans  A. Below 300 RPM  
 B. Above 600 RPM  
 C. Above 1000 RPM  
 D. Between 300 to 600 RPM

Question ID : 75322911662

Status : Answered

Chosen Option : A

**Q.139 Which Section of Air (Prevention and Control of Pollution) Act 1981, provides for the State Government to declare 'air pollution control areas' in consultation with SPCB?**

- Ans  A. Section 21  
 B. Section 15  
 C. Section 19  
 D. Section 17

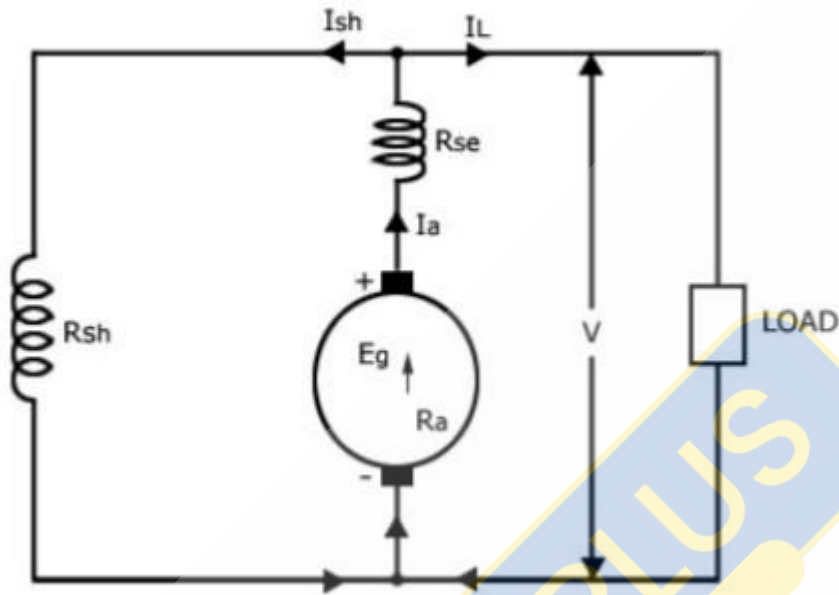
Question ID : 75322911649

Status : Answered

Chosen Option : C

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Q.140



Identify the DC generator represented in the above figure.

Ans

- A. Short shunt compound generator
- B. Series generator
- C. Separately excited DC generator
- D. Long shunt compound generator

Question ID : 75322911677

Status : Answered

Chosen Option : D

**Q.141** What is connected across the output terminals of the solid state Relay to protect the semiconductor output switching device from noise and voltage transient spikes when used to switch highly inductive or capacitive loads?

- Ans
- A. Inductor – capacitor network
  - B. Uni Junction Transistor
  - C. Resistance – capacitor network
  - D. Resistance – Inductor network

Question ID : 75322911589

Status : Answered

Chosen Option : C

**Q.142** What is the output voltage of the IC 7905 Voltage Regulator?

- Ans
- A. -5 V
  - B. -10 V
  - C. -2 V
  - D. -20 V

Question ID : 75322911567

Status : Answered

Chosen Option : A

**Q.143** In this type of back-up Protection method, the same breaker is used by both main and back-up protection, but the protective systems are different. Separate trip coils may be provided for the same breaker. What is this type of Back-up Protection method?

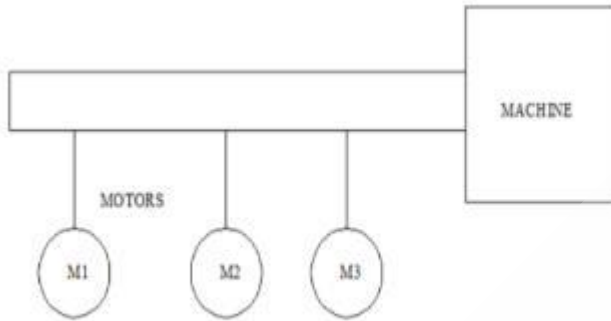
- Ans
- A. Relay back-up method
  - B. Remote back-up method
  - C. Centrally Coordinated Back-up method
  - D. Breaker back-up method

Question ID : 75322911616

Status : Answered

Chosen Option : A

Q.144



Which type of electrical drive is shown in the above figure?

- Ans
- A. Mono-motor drive
  - B. Group drive
  - C. Multi-motor drive
  - D. Individual drive

Question ID : 75322911689

Status : Answered

Chosen Option : D

Q.145 What is the current in the pressure coil for a Low Power Factor wattmeter compared to that of the high-power factor wattmeter?

- Ans
- A. 10 times lower
  - B. 100 times lower
  - C. 10 times higher
  - D. 100 times higher

Question ID : 75322911556

Status : Answered

Chosen Option : C

Q.146 What is the load and how many points should be there in a sub circuit which is one of the electrical distributions from the main distribution board?

- Ans  A. 500 watts of load or not more than 5 electrical points  
 B. 1000 watts of load or not more than 15 electrical points  
 C. 2000 watts of load or not more than 20 electrical points  
 D. 800 watts of load or not more than 10 electrical points

Question ID : 75322911630

Status : Answered

Chosen Option : D

Q.147 What are the inputs for the NAND gate for which the output will be 0?

- Ans  A. 1, 0  
 B. 1, 1  
 C. 0, 1  
 D. 0, 0

Question ID : 75322911568

Status : Answered

Chosen Option : B

Q.148 Which of the following tools is used to create a gap in the wiring where the two wires intersect each other?

- Ans  A. Space  
 B. Deviation  
 C. Gap  
 D. Distance

Question ID : 75322911640

Status : Answered

Chosen Option : C

Q.149 What per cent of energy from the sun is used by green plants? (Rest remains unutilised)

- Ans  A. 1%  
 B. 5%  
 C. 2%  
 D. 10%

Question ID : 75322911580

Status : Answered

Chosen Option : A

Q.150 How is the making capacity of a circuit breaker related to its symmetrical breaking capacity?

Ans  A.

Making capacity =  $1.8 \times \text{Symmetrical breaking capacity} \times \sqrt{2}$

B.

Making capacity =  $1.8 \times \text{Symmetrical breaking capacity} \times \sqrt{3}$

C.

Making capacity =  $2.8 \times \text{Symmetrical breaking capacity} \times \sqrt{2}$

D.

Making capacity =  $2.8 \times \text{Symmetrical breaking capacity} \times \sqrt{3}$

Question ID : 75322911696

Status : Answered

Chosen Option : A

Section : General Knowledge and Awareness

Q.1 भारत के अजय सिंह ने ताशकंद, उज्बेकिस्तान में आयोजित राष्ट्रमंडल भारोत्तोलन चैंपियनशिप 2021 में किस भार वर्ग में स्वर्ण पदक जीता?

- Ans  A. 59 kg  
 B. 81 kg  
 C. 73 kg  
 D. 67 kg

Question ID : 75322911700

Status : Not Answered

Chosen Option : --

Q.2 The death rate is the number of deaths per \_\_\_\_\_ persons in a year.

- Ans  A. hundred  
 B. ten thousand  
 C. thousand  
 D. million

Question ID : 75322911712

Status : Answered

Chosen Option : C

Q.3 नागालैंड की निम्न में से कौन सी जनजाति मोत्सु मोंग (Moatsu Mong) उत्सव मनाती है?

- Ans  A. नागा जनजाति (Naga tribe)  
 B. जारवा जनजाति (Jarawa tribe)  
 C. सावर जनजाति (Saver tribe)  
 D. आओ जनजाति (Ao tribe)

Question ID : 75322911706

Status : Not Answered

Chosen Option : --

Q.4 संयुक्त लोक सेवा आयोग का सदस्य अपना पदभार संभालने की तिथि से छः वर्ष की अवधि के लिए या जब तक वह \_\_\_\_\_ का नहीं हो जाता है, जो भी पहले हो, तक अपना पद धारण करता है।

- Ans  A. 64 वर्ष की आयु  
 B. 60 वर्ष की आयु  
 C. 65 वर्ष की आयु  
 D. 62 वर्ष की आयु

Question ID : 75322911718

Status : Not Answered

Chosen Option : --

Q.5 पंजाब, पश्चिमी राजस्थान और उत्तरी गुजरात के मैदान निम्नलिखित में से किस पादप मंडल में शामिल हैं?

- Ans  A. मालाबार क्षेत्र  
 B. दक्कन क्षेत्र  
 C. गंगा का मैदानी क्षेत्र  
 D. सिंधु मैदानी क्षेत्र

Question ID : 75322911710

Status : Answered

Chosen Option : D

Q.6 In budget 2021–22, the tax exemption on the interest earned on the employees' contributions to provident funds was limited up to:

- Ans  A. ₹2.5 lakh  
 B. ₹3 lakh  
 C. ₹2 lakh  
 D. ₹1.5 lakh

Question ID : 75322911707

Status : Not Answered

Chosen Option : --



**Q.7 Which of the following statements is NOT correct about 'solution'?**

- Ans**  A. In saturated solutions, the solvent is not capable of dissolving any more solute at a given temperature.
- B. A dilute solution contains a small amount of solute in a large amount of solvent.
- C. In aqueous solutions, the solute is dissolved in water.
- D. In concentrated solutions, the solvent is capable of dissolving any amount of more solute at a given temperature.

Question ID : 75322911715

Status : **Not Answered**

Chosen Option : --

**Q.8 In which year was the Prime Minister Rozgar Yojana (PMRY) launched to create self-employment opportunities?**

- Ans**  A. 1993
- B. 1990
- C. 1992
- D. 1991

Question ID : 75322911709

Status : **Not Answered**

Chosen Option : --

**Q.9 On the banks of which river is the world heritage site 'Rani-ki-vav' located?**

- Ans**  A. Sabarmati River
- B. Narmada River
- C. Saraswati River
- D. Tapi River

Question ID : 75322911704

Status : **Not Answered**

Chosen Option : --

Q.10 Which of the following minerals is essential to produce thyroid hormones?

- Ans  A. Silver  
 B. Zinc  
 C. Iodine  
 D. Iron

Question ID : 75322911713

Status : Answered

Chosen Option : C

Q.11 किस रिट के अनुसार कोई न्यायालय गिरफ्तारी के तरीके या आधारों के वैध या संतोषजनक न होने पर गिरफ्तार व्यक्ति को रिहा करने का आदेश दे सकती है?

- Ans  A. अधिकार पृच्छा (quo warranto)  
 B. उत्प्रेषण (Certiorari)  
 C. परमादेश (mandamus)  
 D. बंदी प्रत्यक्षीकरण (Habeas corpus)

Question ID : 75322911717

Status : Not Answered

Chosen Option : --

Q.12 The Rann Utsav is a quarter-year-long winter celebration in the white sandy deserts of:

- Ans  A. Barmer  
 B. Pushkar  
 C. Jaisalmer  
 D. Kutch

Question ID : 75322911705

Status : Answered

Chosen Option : D

Q.13 किस संविधान संशोधन अधिनियम द्वारा एक नया अध्याय IV-A बनाया गया था, जिसमें केवल एक अनुच्छेद (51-A) जोड़ा गया था, जो नागरिकों के लिए दस मौलिक कर्तव्यों की संहिता से संबंधित था?

- Ans
- A. 52वां संविधान (संशोधन) अधिनियम, 1985
  - B. 54वां संविधान (संशोधन) अधिनियम, 1986
  - C. 42वां संविधान (संशोधन) अधिनियम, 1976
  - D. 44वां संविधान (संशोधन) अधिनियम, 1978

Question ID : 75322911716

Status : Answered

Chosen Option : D

Q.14 Which of the following is NOT a correct pair of Delhi Sultan and his tenure?

- Ans
- A. Khizr Khan: 1414–1421
  - B. Firuz Shah Tughlaq: 1324–1351
  - C. Jalal-ud-din Khalji: 1290–1296
  - D. Ghiyas ud-din Balban: 1266–1287

Question ID : 75322911703

Status : Not Answered

Chosen Option : --

Q.15 Which of the following is the highest peak of the Kumaun Himalayas?

- Ans
- A. Badrinath
  - B. Kamet
  - C. Nanda Devi
  - D. Trisul

Question ID : 75322911711

Status : Not Answered

Chosen Option : --

Q.16 Which of the following countries is NOT included in the top ten ranks in the Human Development Index Report 2020?

- Ans  A. France  
 B. Australia  
 C. Norway  
 D. Ireland

Question ID : 75322911708  
Status : Not Answered  
Chosen Option : --

Q.17 निम्नलिखित में से किस विटामिन को पैटोथेनिक अम्ल के रूप में जाना जाता है?

- Ans  A. विटामिन B1  
 B. विटामिन B2  
 C. विटामिन B3  
 D. विटामिन B5

Question ID : 75322911714  
Status : Not Answered  
Chosen Option : --

Q.18 In which year did Dr. Ambedkar start a temple entry movement, in which his Mahar caste followers participated?

- Ans  A. 1925  
 B. 1923  
 C. 1920  
 D. 1927

Question ID : 75322911702  
Status : Not Answered  
Chosen Option : --

Q.19 अल्पसंख्यक कार्य मंत्रालय की निम्न में से कौन सी योजना, संघ लोक सेवा आयोग (UPSC), राज्य लोक सेवा आयोगों (PSCs) और कर्मचारी चयन आयोग द्वारा आयोजित प्रारंभिक परीक्षा उत्तीर्ण करने वाले अल्पसंख्यक छात्रों को सहायता प्रदान करने से संबंधित है?

- Ans  A. पढ़ो प्रदेश  
 B. नई उड़ान  
 C. नया सवेरा  
 D. नई मंजिल

Question ID : 75322911699

Status : Not Answered

Chosen Option : --

Q.20 In 1875, who founded the Arya Samaj, an organisation that attempted to reform Hinduism?

- Ans  A. Narayana Guru  
 B. Swami Dayanand Saraswati  
 C. Raja Ram Mohan Roy  
 D. Ishwar Chandra Vidyasagar

Question ID : 75322911701

Status : Answered

Chosen Option : B

Section : Reasoning

Q.1 Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1. Caricature
2. Cartographer
3. Caretaker
4. Caramel
5. Cancellation

Ans  A. 5, 4, 3, 1, 2

B. 2, 4, 3, 1, 5

C. 5, 4, 3, 2, 1

D. 5, 3, 4, 1, 2

Question ID : 75322911725

Status : Answered

Chosen Option : A

Q.2 नीचे दी गई अक्षर श्रृंखला में ऐसे कितने व्यंजन हैं, जिनके ठीक पहले और ठीक बाद स्वर हैं?

ERGHJKALUVTBEVINDPKJEKUJHGETYREDAFGAVCADWAT  
YAROKODU

Ans  A. 6

B. 8

C. 7

D. 5

Question ID : 75322911726

Status : Answered

Chosen Option : C

Q.3 अंजलि अपने घर से पूर्व की ओर 240 m चलती है और फिर बाएं मुड़कर 120 m चलती है। उसके बाद, वह दाएं मुड़ती है और 360 m चलती है। फिर, वह दाएं मुड़ती है और 120 m चलती है। अंत में वह बाएं मुड़ती है और 300 m चलकर एक बैंक पहुंचती है। बैंक के सापेक्ष अंजलि के घर की सीधी दूरी और दिशा क्या है?

- Ans  A. 860 m, पश्चिम  
 B. 900 m, पश्चिम  
 C. 900 m, पूर्व  
 D. 880 m, पूर्व

Question ID : 75322911729

Status : Answered

Chosen Option : C

Q.4 नीचे दिए गए समीकरण को संतुलित करने के लिए किन दो चिह्नों को आपस में बदला जाना चाहिए?

$$108 \div 27 \times 4 - 154 + 81 = 89$$

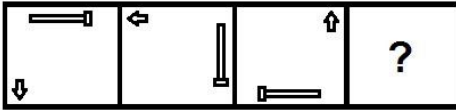
- Ans  A. + और +  
 B. × और ÷  
 C. × और +  
 D. + और -

Question ID : 75322911735

Status : Answered

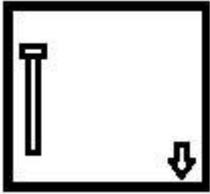
Chosen Option : D

Q.5 Select the figure from among the given options that will replace the question mark (?) in the following figure series.

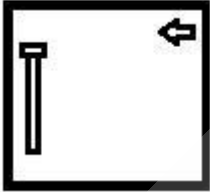


Ans

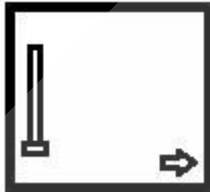
A.



B.



C.



D.



Question ID : 75322911736

Status : Answered

Chosen Option : D



Q.6 Select the option that is embedded in the given figure (rotation is NOT allowed).



Ans

A.



B.



C.



D.



Question ID : 75322911738

Status : Answered

Chosen Option : B

Q.7  $G = U = N > S > T < B = Q$  के अनुसार, निम्नलिखित में से कौन सा निष्कर्ष निश्चित रूप से सही है?

Ans  A.  $Q = G$

B.  $S > B$

C.  $U > T$

D.  $G < T$

Question ID : 75322911724

Status : Answered

Chosen Option : C

Q.8 In a code language, FROZEN is written as EPLVZH. How will MOTHER be written in that language?

- Ans  A. LMQDZL  
 B. NMQCZN  
 C. LMQCZM  
 D. LMRDAL

Question ID : 75322911727

Status : Answered

Chosen Option : A

Q.9 दिए गए कथनों और निष्कर्षों को ध्यानपूर्वक पढ़ें। कथनों में दी गई जानकारी को सत्य मानते हुए विचार करें, भले ही वह सामान्यतः ज्ञात तथ्यों से भिन्न प्रतीत होती हो, और तय करें कि दिए गए निष्कर्षों में से कौन से कथनों का तार्किक रूप से पालन करते हैं?

कथन:

- कुछ जार बोतलें हैं।  
कुछ बोतलें प्लेटें हैं।  
सभी प्लेटें चम्मच हैं।

निष्कर्ष:

- I. कुछ प्लेटें जार हैं।  
II. कुछ चम्मच प्लेटें हैं।  
III. कुछ प्लेटें बोतलें हैं।

- Ans  A. केवल निष्कर्ष I और III पालन करते हैं।  
 B. केवल निष्कर्ष III पालन करता है।  
 C. केवल निष्कर्ष I और II पालन करते हैं।  
 D. केवल निष्कर्ष II और III पालन करते हैं।

Question ID : 75322911723

Status : Answered

Chosen Option : D

Q.10 विशाल ने हरदीप से अधिक अंक प्राप्त किए। जतिन ने प्रतीक से कम अंक प्राप्त किए। सैम ने बलवीर से अधिक अंक प्राप्त किए, जिसने प्रतीक से अधिक अंक प्राप्त किए। जतिन ने विशाल से अधिक अंक प्राप्त किए। इनमें से किसने सर्वाधिक अंक प्राप्त किए?

- Ans  A. विशाल  
 B. प्रतीक  
 C. जतिन  
 D. सैम

Question ID : 75322911721

Status : Answered

Chosen Option : D

Q.11 निम्नलिखित समीकरण में फलश्रुति (?) के स्थान पर लगभग कितना मान आएगा?

$$94.008 \div 46.998 + 16.006 \times 5.98 - 21.003 \div 6.999 = ?$$

- Ans  A. 95  
 B. 84  
 C. 98  
 D. 92

Question ID : 75322911734

Status : Answered

Chosen Option : A

Q.12 उस विकल्प का चयन कीजिए, जिसका तीसरे शब्द से वही संबंध है, जो दूसरे शब्द का पहले शब्द से है।

राँक : संगीत :: लोरी : ?

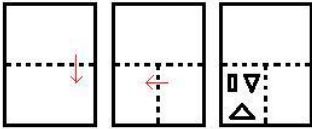
- Ans  A. बच्चे  
 B. नृत्य  
 C. गीत  
 D. माँ

Question ID : 75322911732

Status : Answered

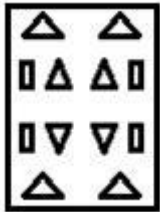
Chosen Option : C

**Q.13** A paper sheet is folded and cut as shown in the following figures. How will the sheet appear when unfolded?

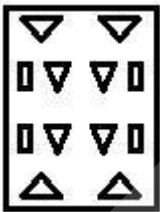


Ans

A.



B.



C.



D.



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Question ID : 75322911737

Status : Answered

Chosen Option : C

Q.14 दिए गए विकल्पों में से उस संख्या का चयन कीजिए, जो निम्नलिखित श्रेणी में प्रश्नचिह्न (?) के स्थान पर आ सकती है।

24, 26, 78, 82, ?

Ans  A. 426

B. 410

C. 99

D. 248

Question ID : 75322911733

Status : Answered

Chosen Option : B

Q.15 A, C की पत्नी है। D, K का पुत्र है। G, F की मां है। F, D का पुत्र है। C और D भाई हैं। G का K से क्या संबंध है?

Ans  A. बहन

B. पुत्रवधू

C. मामी/मौसी

D. चाची/ताई/बुआ

Question ID : 75322911730

Status : Answered

Chosen Option : B

Q.16 A % B' का अर्थ है - 'A, B की बहन है'  
'A # B' का अर्थ है - 'A, B का पुत्र है'  
'A = B' का अर्थ है - 'A, B की पत्नी है'  
'A \* B' का अर्थ है - 'A, B का भाई है'

तो V % T \* R # L = M \* S # P के आधार पर, M का V से क्या संबंध है?

- Ans  A. चाचा/ताऊ/फूफा  
 B. भतीजा/भांजा  
 C. दादा  
 D. पिता

Question ID : 75322911731

Status : Answered

Chosen Option : D

Q.17 Six boxes numbered 1 to 6 are kept one above the other but not necessarily in the same order. Box 5 is just below Box 2. Only two boxes are kept between Box 3 and Box 4. At least two boxes are between Box 5 and Box 6. Box 3 is at the top. Box 6 is just below Box 1 but just above Box 4. Which box is just above Box 5?

- Ans  A. Box 2  
 B. Box 6  
 C. Box 3  
 D. Box 1

Question ID : 75322911722

Status : Answered

Chosen Option : A

Q.18 K, L, M, N, O और P, पहली पंक्ति में एक दूसरे के बगल में बैठकर फिल्म देख रहे हैं। K, O के दाईं ओर ठीक बगल में बैठा है। L दाएं सिरे से दूसरे स्थान पर बैठा है। M, P के बाईं ओर ठीक बगल में बैठा है। N किसी एक सिरे पर बैठा है। N और M के बीच दो व्यक्ति बैठे हैं। बाएं सिरे से दूसरे स्थान पर कौन बैठा है?

Ans  A. K

B. P

C. O

D. M

Question ID : 75322911719

Status : Answered

Chosen Option : A

Q.19 In a code language, MANGO is coded as 100, and FORK is coded as 100. How will ZEBRA be coded in that language?

Ans  A. 104

B. 122

C. 118

D. 164

Question ID : 75322911728

Status : Answered

Chosen Option : A

Q.20 संयुक्ता, माही, युक्ता, रौनक, ज़ैनब और हीर एक सीधी पंक्ति में दक्षिण की ओर मुख करके बैठे हैं। युक्ता, रौनक और ज़ैनब के मध्य के किसी स्थान पर बैठी है। माही, ज़ैनब के दाईं ओर ठीक बगल में बैठी है। रौनक और युक्ता के बीच में केवल हीर बैठी है। रौनक किसी एक सिरे पर बैठा है। माही बाएं सिरे से दूसरे स्थान पर बैठी है। संयुक्ता का स्थान कौन सा है?

- Ans
- A. दाएं सिरे से दूसरा
  - B. ज़ैनब और माही के बीच
  - C. हीर के बाईं ओर ठीक बगल में
  - D. माही और युक्ता के बीच

Question ID : 75322911720

Status : Answered

Chosen Option : D

Section : General Hindi

Q.1 निम्नलिखित में से कौन सा विकल्प 'मध्यम पुरुष' है?

- Ans
- A. वे
  - B. तू
  - C. मैं
  - D. यह

Question ID : 75322911743

Status : Answered

Chosen Option : B

Q.2 'हुलिया तंग होना' मुहावरे का सही अर्थ क्या है?

- Ans
- A. कमजोर होना
  - B. लज्जित होना
  - C. अपमान होना
  - D. परेशान होना

Question ID : 75322911745

Status : Answered

Chosen Option : A



Q.3 निम्नलिखित में कौन सा विकल्प 'रूप' के अनुसार क्रियाविशेषण का भेद नहीं है?

- Ans
- A. स्थानीय
  - B. मूल
  - C. यौगिक
  - D. साधारण

Question ID : 75322911741

Status : Not Answered

Chosen Option : --

Q.4 'हाथी' का पर्यायवाची शब्द कौन सा है?

- Ans
- A. सैन्धव
  - B. मोषक
  - C. रासभ
  - D. कुंजर

Question ID : 75322911747

Status : Not Answered

Chosen Option : --

Q.5 'जो वस्तु काम में आ जाए वही अच्छी' अर्थ के लिए उपयुक्त लोकोक्ति कौन सी है?

- Ans
- A. मजनु को लैला का कुत्ता भी प्यारा
  - B. बिंध गया सो मोती, रह गया सो सीप
  - C. बुढ़ी घोड़ी लाल लगाम
  - D. बोए पेड़ बबूल के आम कहाँ से होय

Question ID : 75322911746

Status : Answered

Chosen Option : B

Q.6 'विधि' का विलोम क्या होगा?

- Ans  A. विधान  
 B. निषेध  
 C. सुधि  
 D. प्रविधि

Question ID : 75322911748

Status : Not Answered

Chosen Option : --

Q.7 'उसने अभी नहाया है।' वाक्य में कौन सा काल है?

- Ans  A. आसन्न भूत  
 B. सामान्य वर्तमान  
 C. सामान्य भूत  
 D. संदिग्ध भूत

Question ID : 75322911740

Status : Not Answered

Chosen Option : --

Q.8 'वह मुझे कभी न कभी मिलेगा।' वाक्य में कौन सा काल है?

- Ans  A. संभाव्य भविष्यत्  
 B. सामान्य भूत  
 C. सामान्य भविष्यत्  
 D. सामान्य वर्तमान

Question ID : 75322911739

Status : Answered

Chosen Option : A

Q.9 'धुँधला' किस प्रकार का विशेषण है?

- Ans  A. गुणवाचक  
 B. सार्वनामिक  
 C. परिमाणबोधक  
 D. संख्यावाचक

Question ID : 75322911742

Status : Answered

Chosen Option : C

Q.10 'अन्य पुरुष' के अंतर्गत कौन आता है?

- Ans  A. श्रोता  
 B. वक्ता और श्रोता को छोड़कर और सब  
 C. वक्ता और श्रोता  
 D. वक्ता

Question ID : 75322911744

Status : Answered

Chosen Option : B

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