Railway GDCE

Previous Year Paper
(Electrician)
21 Jun, 2024

Railway Recruitment Cell

Post Name : 01A-Electrician **Exam Code** :

Exam Date : 21-06-2024 **Exam Time** : 11:15AM

Question No. 1

In a pure inductive circuit, the-

A) Current leads the voltage by 90°

B) Voltage lags the current by 90°

C) Current lags the voltage by 90°

D) Current is in phase with the voltage

Answer Key: C

Question No. 2

Which of the following processes is used for joining two metals without the use of heat?

A) Soldering

B) Riveting

C) Brazing

D) Welding

Answer Key: B

Question No. 3

The ratio of the RMS value to the average value of AC is called the-

A) Crest factor

B) Form factor

C) Peak factor

D) Specific resistance

Answer Key: B

Question No. 4

The number of slip rings in a squirrel cage induction motor is-

A) Zero

B) One

C) Two

D) Three

Answer Key: A

Question No. 5

The standard frequency of domestic AC mains supply voltage of 230 V in India is-

A) 25 Hz

B) 50 Hz

C) 100 Hz

D) 1000 Hz

Answer Key: B

Question No. 6

The rate of flow of an electric charge is known as-

A) Electric current

B) Electric potential

C) Electric resistance

D) Capacitance

Answer Key: A

Question No. 7

A wire of 2 SWG is equivalent to a diameter of-

A) 5.38 mm
B) 5.89 mm
C) 6.4 mm
D) 7.01 mm

Answer Key: D

Question No. 8

Which of the following protects a cable against mechanical injury?

A) Bedding
B) Sheath
C) Armouring
D) Serving

Answer Key: C

Question No. 9

In three-phase squirrel-cage induction motors, the rotor bars are-

A) Kept open
B) Short-circuited by slip rings
C) Short-circuited by end rings
D) Connected to insulation

Answer Key: C

Question No. 10

The process by which impurities are added to a pure semiconductor is-

A) Diffusing
B) Doping
C) Drift
D) Mixing

Answer Key: B

Question No. 11

_____ is defined as the number of armature slots per pole.

A) Pole pitch
B) Front pitch
C) Back pitch
D) Coil pitch

Answer Key: A

Question No. 12

With which of the following is the term 'cogging' associated?

A) Three-phase transformers
B) Compound generators
C) DC series motors
D) Induction motors

Answer Key: D

Question No. 13

If three 10 μF capacitors are connected in parallel, then the net capacitance is-

A) 30 μF
B) 10 μF
C) 3.33 μF
D) 0.3 μF

Answer Key: A

Question No. 14

The metal used for the control spring in electrical instruments is-

A) Steel
B) Nichrome
C) Phosphor bronze
D) Silver

Answer Key: C

Question No. 15

If two capacitors of 4 pF each are connected in series, then their total capacitance is-

A) 2 pF
B) 4 pF
C) 8 pF
D) 16 pF

Answer Key: A

Question No. 16

The number of cycles per second is called-

A) Amplitude
B) Frequency
C) Time period
D) Flux

Answer Key: B

Question No. 17

We need a resistor value of 47 kΩ with a ±5% tolerance. The sequence of the colour band on this resistor should be-

A) Yellow, violet, yellow and gold
B) Yellow, violet, silver and gold
C) Yellow, violet, orange and silver
D) Yellow, violet, orange and gold

Answer Key: D

Question No. 18

Identify the passive element among the following.

A) Voltage source
B) Current source
C) Inductor
D) Transistor

Answer Key: C

Question No. 19

Two holes are drilled in the disc on the diameter of an energy meter to-

A) Increase ventilation
B) Reduce the weight of a disc
C) Eliminate creeping on no-load
D) Increase deflecting torque

Answer Key: C

Question No. 20

Which of the following is an electrical measuring instrument?

A) Moving-iron instrument
B) Hot-wire instrument

C) Electrostatic instrument

D) All of the options

Answer Key: D

Question No. 21

Batteries are usually rated in-

A) Watt-hours

B) Amperes/sec

C) Ampere-hours

D) Kilowatts

Answer Key: C

Question No. 22

The colour emitted by a sodium vapour lamp is-

A) Yellow

B) Bluish white

C) Red

D) White

Answer Key: A

Question No. 23

Four cells each of 2 V and 4 Ah are connected in parallel. What will be the net voltage of the battery?

A) 2 V

B) 4 V

C) 0.5 V

D) 3 V

Answer Key: A

Question No. 24

_____ is an insulator.

A) Copper

B) Silver

C) Plastic

D) Iron

Answer Key: C

Question No. 25

Which of the following conditions is NOT necessary to be satisfied for paralleling an incoming alternator with busbars?

A) Same frequency

B) Same voltage

C) Same phase sequence

D) Different frequency

Answer Key: D

Question No. 26

A battery is connected to a resistance of 20 Ω. If a current of 0.75 A has to be produced, then what should be the EMF of the battery?

A) 30 V

B) 15 V

C) 20 V

D) 5 V

Answer Key: B

Question No. 27

Which rule is used for Electrical generator?

A) Ampere's rule
B) Fleming's right-hand rule
C) Fleming's left-hand rule
D) Maxwell's law

Answer Key: B

Question No. 28

The negative plate of a lead-acid cell is made of-

A) Carbon
B) Spongy lead
C) Lead peroxide
D) Cadmium

Answer Key: B

Question No. 29

The speed of a DC shunt motor is controlled by the-

A) Reluctance control method
B) Field rheostatic control method
C) Field voltage control method
D) All of the options

Answer Key: D

Question No. 30

The Q-factor of a series resonant circuit is also known as the-

A) Current magnification factor
B) Voltage magnification factor
C) Load factor
D) Leakage factor

Answer Key: B

Question No. 31

At absolute zero temperature, the semiconductor behaves as a perfect-

A) Conductor
B) Capacitor
C) Insulator
D) Resistor

Answer Key: C

Question No. 32

_____ is defined as the amount of magnetization left behind after removing the external magnetic field from the circuit.

A) Residual magnetism
B) Ferromagnetism
C) Anti-ferromagnetism
D) Ferrimagnetism

Answer Key: A

Question No. 33

A half-wave rectifier requires-

A) Four diodes in bridge formation
B) One metal rectifier in bridge formation
C) Two diodes
D) One diode

Answer Key: D

Question No. 34

The process of decomposing a liquid by passing electric current (DC only) through it is called-

A) Electroplating
B) Electrolysis
C) Buckling
D) Electric diffusion

Answer Key: B

Question No. 35

Which of the following is NOT an item of safety equipment?

A) Shoes
B) Gloves
C) Helmet
D) Knife

Answer Key: D

Question No. 36

Find the total capacitance for three capacitors connected in parallel, given their individual capacitances are 12 μF, 13 μF and 25 μF.

A) 25 μF
B) 35 μF
C) 40 μF
D) 50 μF

Answer Key: D

Question No. 37

Which of the following components is NOT a passive device?

A) UJT
B) Wire wound resistor
C) Iron core inductor
D) Electrolytic capacitor

Answer Key: A

Question No. 38

The Q factor of a coil is-
(where R - resistance, L - inductance, X_L - inductive reactance, X_C - capacitive reactance)

A) R / L
B) L / R
C) X_L / R
D) R / X_L

Answer Key: C

Question No. 39

A PN junction diode is a _____ terminal device.

A) One
B) Two
C) Three
D) Four

Answer Key: B

Question No. 40

The condition for the parallel operation of two alternators is that both must have the same-

A) Reactance

B) Resistance

C) KVA rating

D) Phase angle

Answer Key: D

Question No. 41

When is an alternator said to be over-excited?

A) When it is operating at the lagging power factor

B) When it is operating at the leading power factor

C) When it is operating at the unity power factor

D) When it is operating at the infinity power factor

Answer Key: A

Question No. 42

The efficacy of a light emitting diode is expressed in-

A) Weber per square metre

B) Lumens per watt

C) Lux per square metre

D) Candela per watt

Answer Key: B

Question No. 43

The reciprocal of impedance is-

A) Susceptance

B) Elastance

C) Conductance

D) Admittance

Answer Key: D

Question No. 44

_____ states that the sum of the voltage differences around any closed loop in a circuit must be zero.

A) Hertz's law

B) Maxwell's law

C) Faraday's law

D) Kirchhoff's law

Answer Key: D

Question No. 45

The main use of the drill is-

A) Cutting

B) Making holes

C) Striking

D) Brushing

Answer Key: B

Question No. 46

Which of the following is/are the stationary part(s) of a DC motor?

A) Yoke

B) Pole core

C) Field coil

D) All of the options

Answer Key: D

Question No. 47

How is energy measured in an energy meter?

A) Joules
B) kW
C) kWh
D) W

Answer Key: C

Question No. 48

The Buchholz relay is operated by-

A) Eddy current
B) Electromagnetic induction
C) Electrostatic induction
D) Gas pressure

Answer Key: D

Question No. 49

Which of the following is NOT a non-linear circuit element?

A) Diode
B) Transistor
C) Heater coil
D) Vacuum tubes

Answer Key: C

Question No. 50

If supply frequency increases, then the skin effect-

A) Increases
B) Decreases
C) Remains the same
D) Is zero

Answer Key: A

Question No. 51

The incandescent light bulbs are made of _____ filament.

A) Copper
B) Aluminium
C) Tungsten
D) Rubidium

Answer Key: C

Question No. 52

Which instrument is used to measure insulation resistance?

A) Megger
B) Multimeter
C) Series-type ohmmeter
D) Kelvin bridge

Answer Key: A

Question No. 53

HRC fuse provides the best protection against-

A) Open circuits
B) Back EMF
C) Reverse current
D) Short circuits

Answer Key: D

Question No. 54

Calculate the electrical energy consumed by a 500-watt lamp for 5 hours.

A) 0.5 units

B) 1.5 units

C) 2.5 units

D) 3.5 units

Answer Key: C

Question No. 55

A DIAC has _____ terminal(s).

A) 1

B) 2

C) 3

D) 4

Answer Key: B

Question No. 56

Five 2-V cells are connected in parallel. Find the output voltage.

A) 2 V

B) 10 V

C) 20 V

D) 40 V

Answer Key: A

Question No. 57

_____ gates are universal gates.

A) NAND & AND

B) NAND & OR

C) NAND & NOR

D) NOR & OR

Answer Key: C

Question No. 58

What is the function of the conservator in a transformer?

A) Prevents moisture entry

B) Transfers heat to atmosphere

C) Releases internal pressure

D) Aids in contraction and expansion of oil

Answer Key: D

Question No. 59

When do we use a fire extinguisher?

A) In case of flood

B) In case of electric shock

C) In case of fire

D) In case of burn injury

Answer Key: C

Question No. 60

Which term in the magnetic circuit is similar to conductance in the electrical circuit?

A) Reluctivity

B) Permeance

C) Reluctance

D) Permeability

Answer Key: B

Question No. 61

What is the function of a circuit breaker?

A) To decrease the voltage

B) To make contact at an abnormal condition

C) To isolate automatically at an abnormal condition

D) To enable physical breaking contact at a normal condition

Answer Key: C

Question No. 62

The _____ automatically switches off an electrical circuit during an abnormal condition or overload of the network.

A) MCB

B) Fuse

C) Earthing

D) Ground

Answer Key: A

Question No. 63

How many amperes are required to light an ordinary 40-watt, 120-volt incandescent lamp? (Assume the power factor to be 1.0)

A) 0.3 A

B) 0.5 A

C) 3 A

D) 1.3 A

Answer Key: A

Question No. 64

A guy wire running from one side of a crossarm to the next pole is called-

A) Terminal guy

B) Line guy

C) Span guy

D) Arm guy

Answer Key: D

Question No. 65

The electric iron contains a _____ that keeps the iron from getting too hot when turned on and left unattended for a long time.

A) Varistor

B) Thermostat

C) Resistor

D) Capacitor

Answer Key: B

Question No. 66

As per BIS 335 - 1983 recommendations, the dielectric strength (breakdown voltage) for new unfiltered transformer oil shall be a minimum of-

A) 30 kV

B) 25 kV

C) 20 kV

D) 15 kV

Answer Key: A

Question No. 67

IGBT acts as an open switch if gate voltage is-

A) Positive
B) Negative
C) Zero
D) Infinity

Answer Key: B

Question No. 68

If the shaft in a DC machine is _____, then loosen the end plate studs and retighten them in the proper sequence.

A) Not rotating freely
B) Burnt out
C) Damaged
D) Rotating very fast

Answer Key: A

Question No. 69

The starter resistance in a DC motor is shorted because of-

A) Excessive vibration
B) Excessive heating
C) Insufficient pressure
D) Loosely fitted studs

Answer Key: A

Question No. 70

A DC series motor should NOT be started or made to run-

A) With load
B) Without load
C) Without an ammeter
D) With an ammeter

Answer Key: B

Question No. 71

Which type of filing method is used when heavy reduction of material is required?

A) Diagonal filing
B) Transverse filing
C) Longitudinal filing
D) Either transverse or longitudinal filing

Answer Key: A

Question No. 72

Which part of the motor needs maximum attention during maintenance?

A) Stator winding
B) Rotor winding
C) Frame
D) Bearing

Answer Key: D

Question No. 73

_____ are used to protect electrical appliances such as motors, air conditioners, refrigerators, and pumps, where high voltage rating and currents are required.

A) Thermal fuses

B) SMD fuses

C) Plug-in fuses

D) Cartridge fuses

Answer Key: D

Question No. 74

Which of the following instruments is used to connect two alternators in parallel?

A) Oscilloscope

B) Stroboscope

C) Synchronoscope

D) Helioscope

Answer Key: C

Question No. 75

In prohibition signs, the colour of the border and crossbar is-

A) Yellow

B) Black

C) Red

D) White

Answer Key: C