ISRO
Technician B

Previous Year Paper
(Electrical) 3 Nov 2022

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यू. आर. राव उपग्रह केंद्र, बेंगलूरू

भारतीय अंतरिक्ष अनुसंधान संगठन
Indian Space Research Organisation

U.R. RAO SATELLITE CENTRE
Bengaluru

Participant ID	
Participant Name	
Test Center Name	
Test Date	03/11/2022
Test Time	12:00 PM - 1:30 PM
Subject	TECHNICIAN B (ELECTRICAL) Post Code 003

Section : **TECHNICIAN B (ELECTRICAL) Post Code 003**

Q.1

एक 6छड लैप कुंडलित जनित्र में 300 चालक है, प्रति चालक में प्रेरित ई.एम.एफ 5 वोल्टता है तो जनित्र द्वारा जनित वोल्टता ..... होगी

a) 60 वोल्ट
b) 1500 वोल्ट
c) 360 वोल्ट
d) 250 वोल्ट

Ans

✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222341**
Status : **Answered**
Chosen Option : **D**

Q.2

बत्ती और पंखे के लिए तांबा तार का न्यूनतम अनुप्रस्त काट क्षेत्र _____ है

a) 1 mm^2
b) 1.5 mm^2
c) 2 mm^2
d) 2.54 mm^2

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222397**
Status : **Answered**
Chosen Option : **B**

Q.3

Common emitter configuration is mostly used in amplifier circuits because of its

a) Very Low input impedance and high voltage gain
b) High input impedance and voltage gain less than one
c) Moderately High input impedance and high voltage gain
d) Low input impedance and low voltage gain

Ans
✘ A. a
✘ B. b
✔ C. c
✘ D. d

Question ID : **1703222369**
Status : **Answered**
Chosen Option : **B**

Q.4

The condition of electrolyte in a battery is measured in terms of:

a) voltage output
b) specific gravity
c) acid contents
d) current value

Ans

✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222350**
Status : **Answered**
Chosen Option : **B**

Q.5

In AC circuits, ratio of KW to the KVA represents_____.

a) Form factor
b) Peak factor
c) Power factor
d) Load factor

Ans

✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222395**
Status : **Answered**
Chosen Option : **C**

Q.6

Lumen is the unit of

a) Light wavelength
b) Luminous intensity
c) Frequency
d) Luminous flux

Ans
✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222400**
Status : **Answered**
Chosen Option : **D**

Q.7

चालक की प्रतिरोधकता हेतु चिह्न _____ है

a) ρ
b) Ω
c) μ
d) β

Ans
✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222383**
Status : **Answered**
Chosen Option : **A**

Q.8

Which type of Circuit Breaker is used for 415 V, LT System?

a) Air Circuit Breakers.
b) Minimum Oil Circuit Breakers.
c) SF6 Circuit Breakers.
d) Vacuum Circuit Breakers.

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222364**
Status : **Answered**
Chosen Option : **A**

Q.9

Form factor of which of the following circuit is Zero?

a) Capacitance
b) Inductance
c) Resistance
d) Both a) and b)

Ans
✘ A. a
✘ B. b
✘ C. c
✔ D. d

Question ID : **1703222390**
Status : **Answered**
Chosen Option : **D**

Q.10

The salient pole type rotors as compared to the cylindrical pole type rotors are

a) Smaller in diameter and larger in Axial length
b) Larger in diameter and smaller in Axial length
c) Larger in diameter and Axial length
d) Smaller in diameter and Axial length

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222363**
Status : **Answered**
Chosen Option : **B**

Q.11

When primary of a transformer is connected to Direct Current (DC)

a) Primary draws small current
b) Primary leakage reactance is increased
c) Core losses are increased
d) Primary may draw heavy current

Ans
✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222343**
Status : **Answered**
Chosen Option : **D**

Q.12

In the control circuit wiring, the meaning of Normally Closed contact means.

a) Contacts remain in closed condition in all the states of relay.
b) Contacts open when the relay coil is de energized.
c) Contacts open when the relay coil is energized.
d) Contacts close when the relay coil is de energized.

Ans
✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222365**
Status : **Answered**
Chosen Option : **C**

Q.13

If resistance decreases with increase in temperature, resistance has

a) Positive temperature Coefficient
b) Negative temperature Coefficient
c) Neutral temperature Coefficient
d) Zero temperature Coefficient

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222371**
Status : **Answered**
Chosen Option : **B**

Q.14

With load on transformer reduces, following losses are reduced

a) Eddy current losses.
b) Hysteresis losses
c) Iron losses
d) Copper losses

Ans

✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222344**
Status : **Answered**
Chosen Option : **D**

Q.15

4-Point method to measure soil resistivity is also known as

a) Wenner method
b) Weiner Method
c) Weber Method
d) Walker method

Ans

✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222384**
Status : **Answered**
Chosen Option : **B**

Q.16

Metal used for plate type earthing

a) Copper
b) Silver
c) Aluminum
d) Gold

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222378**
Status : **Answered**
Chosen Option : **A**

Q.17

When 3 phase system is balanced, the neutral wire carries
a) No current.
b) Half of phase current.
c) 1.732 times of phase current.
d) One third of the phase current.

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222349**
Status : **Answered**
Chosen Option : **A**

Q.18

The purpose of a capacitor in a fan is to:

a) increase the speed
b) protect the fan in case of fault occurs
c) produce the phase shift
d) control the speed of the fan

Ans

✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222360**
Status : **Answered**
Chosen Option : **C**

Q.19

The current gain of common emitter amplifier configuration is

a) Less than one
b) Typically zero
c) Typically one
d) Greater than one

Ans

✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222368**
Status : **Answered**
Chosen Option : **A**

Q.20

The no load voltage of a generator is 242 V and rated load voltage is 220 V. The voltage regulation of generator is

a) 4.5%
b) 11.3%
c) 2.8%
d) 10%

Ans

✗ A. a

✗ B. b

✗ C. c

✓ D. d

Question ID : **1703222342**
Status : **Answered**
Chosen Option : **D**

Q.21

Megger is used to measure

a) Earth resistance
b) Insulation resistance
c) Breakdown voltage of insulation
d) Tan Delta

Ans

✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703222366**
Status : **Answered**
Chosen Option : **B**

Q.22

Full load line current of a 3-phase, 3 HP (Horsepower), 415 V, 50 Hz squirrel cage induction motor at 0.8 lagging pf is approximately:

a) 6.2 A
b) 3.80 A
c) 4.5 A
d) 3.30 A

Ans

✗ A. a

✓ B. b

✗ C. c

✗ D. d

Question ID : **1703222354**
Status : **Answered**
Chosen Option : **C**

Q.23

In order to increase the ampere- hour rating of a battery, the cells are connected in:

a) Star
b) Delta
c) Series
d) Parallel

Ans

✗ A. a

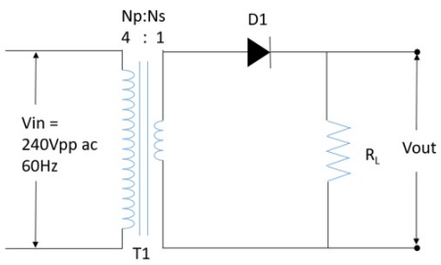
✗ B. b

✗ C. c

✓ D. d

Question ID : **1703222351**
Status : **Answered**
Chosen Option : **D**

Q.24 निम्न परिपथ में, डायोड डी1 द्वारा देखा जानेवाला लगभग अधिकतम शिखर विपरीत वोल्टता क्या है ?



a) 120V
b) 60V
c) 40V
d) 30V

Ans
✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222367**
Status : **Answered**
Chosen Option : **B**

Q.25

By laminating core of transformer, we reduce
a) Leakage Reactance
b) Eddy Current losses
c) Copper losses
d) Hysteresis losses

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222345**
Status : **Answered**
Chosen Option : **B**

Q.26

एक कुंडली में 1000 मरोड के तांबे के तार का अनुप्रस्थ काट क्षेत्र 1.6 mm^2 है। कुंडली की लंबाई 1000 मी. और तांबे की प्रतिरोधकता 0.02 μΩ-m है। कुंडली का प्रतिरोध बताएं

a) 20 m Ω
b) 20 Ω
c) 20 K Ω
d) 20 M Ω

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222393**
Status : **Not Attempted and Marked For Review**
Chosen Option : **--**

Q.27

Eddy current loss in a transformer can be reduced by:
a) increasing the thickness of the laminations
b) decreasing the thickness of the laminations
c) winding the coils with a higher gauge wire
d) decreasing the air-gap in the magnetic circuit

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222346**
Status : **Answered**
Chosen Option : **A**

Q.28

Select the correct option from following with reference to resistivity of the material in ascending order.

a) Copper, Silver, Tungsten, Aluminum
b) Silver, Copper, Aluminum, Tungsten
c) Aluminum, Copper, Tungsten, Silver
d) Copper, Aluminum, Silver, Tungsten

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222389**
Status : **Answered**
Chosen Option : **B**

Q.29

Ability of measuring instrument to reproduce same output signal when same input signal is applied again and again under fixed environmental conditions

a) Ruggedness
b) Reliability
c) Repeatability
d) Responsibility

Ans
✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222387**
Status : **Answered**
Chosen Option : **B**

Q.30

What is the SI unit for magnetic flux density?

a) Webers
b) Tesla
c) Gauss
d) Volt

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222381**
Status : **Answered**
Chosen Option : **B**

Q.31

Variable resistor in a circuit is known as

a) Potentiometer
b) Chip resistor
c) Wire wound resistor
d) Metal film resistor

Ans
✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222373**
Status : **Answered**
Chosen Option : **A**

Q.32

In power transistors, the heat sink is connected to the

a) Base
b) Emitter
c) Collector
d) Base and Emitter

Ans

✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222370**
Status : **Answered**
Chosen Option : **A**

Q.33

Relationship between peak value and RMS value of sinusoidal current

a) $I_{rms} = I_p/1.414$
b) $I_{rms} = I_p * 1.414$
c) $I_p = I_{rms} * 2$
d) $I_p = I_{rms} / 2$

Ans

✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222380**
Status : **Answered**
Chosen Option : **A**

Q.34

The synchronous speed of an induction motors refers to the speed of the

a) Rotor
b) Armature
c) Rotating magnetic field
d) Value marked on the name plate

Ans
✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222359**
Status : **Answered**
Chosen Option : **C**

Q.35

Earthing for house wiring uses

a) Coal and Salt
b) Coal and sugar
c) Clay and Salt
d) Clay and Sugar

Ans
✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222377**
Status : **Answered**
Chosen Option : **A**

Q.36

Conductor combining function of both protective conductor and neural conductor

a) Protective Earth and Neural conductor
b) Passive Earth and Neural conductor
c) Pulse Earth and Neural conductor
d) Positive Earth and Neural conductor

Ans

✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222385**
Status : **Answered**
Chosen Option : **B**

Q.37

Which of the following protective device has minimum breaking capacity?

a) Miniature Circuit breaker
b) Vacuum Circuit breaker
c) Minimum oil Circuit breaker
d) Air Circuit breaker

Ans

✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222353**
Status : **Answered**
Chosen Option : **A**

Q.38

Non-metallic conduits are made from _____.

a) PVC
b) Fibre
c) Both a) and b)
d) None of the above

Ans

✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222396**
Status : **Answered**
Chosen Option : **A**

Q.39

When a 1MΩ resistor is connected in parallel to 1KΩ resistor, resultant value will be

a) Near to 1KΩ
b) Near to 1MΩ
c) Near to $10^9\Omega$
d) Near to 0Ω

Ans

✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222372**
Status : **Answered**
Chosen Option : **B**

Q.40

50 Hz आपूर्ति में प्रचालित तीन चरण 415 V इंडक्शन मशीन में 5 % रपट है । तो घूर्णक वोल्टता द्वारा प्रति मिनट में पूर्ण घूर्णन की कुल संख्या

a) 150
b) 100
c) 250
d) 2.5

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222355**
Status : **Answered**
Chosen Option : **A**

Q.41

Candela is the unit of _____

a) Luminous Intensity
b) Luminous flux
c) Both a) and b)
d) None of the above

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222399**
Status : **Answered**
Chosen Option : **A**

Q.42

Select the false statement about the delta connection system from following.

a) Delta connection is a 3 wire system
b) Delta connection has a neutral line
c) Delta connection is used for short distance
d) Delta connection is used for distribution

Ans

✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222391**
Status : **Answered**
Chosen Option : **B**

Q.43

Ratio of maximum energy stored to the energy dissipated is called

a) Q factor
b) Power factor
c) Form factor
d) Peak factor

Ans

✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222394**
Status : **Answered**
Chosen Option : **B**

Q.44

Which of following is not the cable specification.

a) Voltage rating
b) Conductor material
c) Number of strands
d) Dielectric loss

Ans

✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222392**
Status : **Answered**
Chosen Option : **D**

Q.45

If a single phasing occurs during running of 3 phase motor than

a) Motor will run as two phase motor and perform normally
b) Will continue to run on two phases but will not take load
c) Continue to run but likely to fail due to excessive high current
d) Will immediately stall

Ans

✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222357**
Status : **Answered**
Chosen Option : **C**

Q.46

Measurement which provides a fast go-no-go testing for fuses

a) Diode measurement
b) Voltage measurement
c) Continuity measurement
d) Current measurement

Ans
✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222382**
Status : **Answered**
Chosen Option : **C**

Q.47

Wheatstone bridge is said to be balance when voltage across its output terminal is

a) zero Voltage
b) Positive voltage
c) Negative voltage
d) Infinite voltage

Ans
✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222386**
Status : **Answered**
Chosen Option : **A**

Q.48

In automatic star delta starter, the motor starts in star bur do not change over to delta, The reason for this anomaly is due malfunction of

a) Over load relay.
b) Push Button actuator
c) Main contactor
d) Timer

Ans

✗ A. a
✗ B. b
✗ C. c
✓ D. d

Question ID : **1703222358**
Status : **Answered**
Chosen Option : **D**

Q.49

Which of the following is the main function of the Choke in Fluorescent lamp?

a) Voltage limiting
b) Induces high voltage
c) Eliminates the ripples in the supply voltage
d) None of the above

Ans

✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222398**
Status : **Answered**
Chosen Option : **B**

Q.50

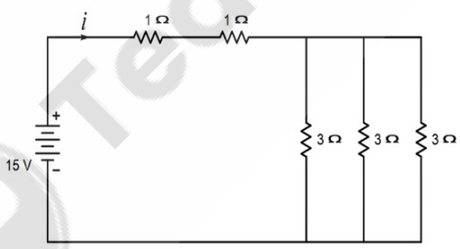
Fusing Factor is…

a) Minimum Fusing current /Rated current
b) Maximum Fusing current /Rated current
c) Rated current / Minimum Fusing current
d) Rated current / Maximum Fusing current

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222352**
Status : **Answered**
Chosen Option : **B**

Q.51 Find the current drawn from the source in the following circuit.



a) 3 A
b) 1.3636 A
c) 5 A
d) 10 A

Ans
✘ A. a
✘ B. b
✔ C. c
✘ D. d

Question ID : **1703222388**
Status : **Answered**
Chosen Option : **C**

Q.52

Calculate the resistance of bulb if it draws 0.1A from 9V battery

a) 900Ω
b) 90Ω
c) 9Ω
d) 9000Ω

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222375**
Status : **Answered**
Chosen Option : **B**

Q.53

Function of capacitor in single phase induction motor is

a) Suppressing of spark across centrifugal switch
b) Splitting of phase
c) Improve Efficiency
d) Speed control

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222361**
Status : **Answered**
Chosen Option : **B**

Q.54

4 स्तंभ वाले तथा 1800 r.p.m पर एक प्रत्यावर्तित्र द्वारा जनित वोल्टता की आवृत्ति है

a) 60 Hz
b) 120 Hz
c) 7200 Hz
d) 450Hz

Ans
✔ A. a
✘ B. b
✘ C. c
✘ D. d

Question ID : **1703222362**
Status : **Answered**
Chosen Option : **A**

Q.55

The speed of rotor of Induction motor is

a) Same as synchronous speed
b) Higher than synchronous speed
c) Lesser than synchronous speed
d) Determined by supply frequency and number of poles

Ans
✘ A. a
✘ B. b
✔ C. c
✘ D. d

Question ID : **1703222356**
Status : **Answered**
Chosen Option : **C**

Q.56

Potential reference of earth for earthing is always considered to be

a) Infinite V
b) 0 V
c) 230V
d) 110V

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222376**
Status : **Answered**
Chosen Option : **B**

Q.57

गोल्ड बैंड के साथ प्रतिरोधी का सह्यता _____ होगा

a) ±5%
b) ±20%
c) ±10%
d) ±15%

Ans
✓ A. a
✗ B. b
✗ C. c
✗ D. d

Question ID : **1703222374**
Status : **Answered**
Chosen Option : **A**

Q.58

The distance between two adjacent teeth of hacksaw blades are as
a) Specifications of the blade
b) Pitch of the blade
c) Size of the blade
d) Designation of the blade

Ans
✗ A. a
✓ B. b
✗ C. c
✗ D. d

Question ID : **1703222347**
Status : **Answered**
Chosen Option : **B**

Q.59

In an electromechanical indicating instrument, force used to prevent the oscillation of pointer quickly is

a) Deflecting force
b) Controlling force
c) Damping force
d) Newton force

Ans
✗ A. a
✗ B. b
✓ C. c
✗ D. d

Question ID : **1703222379**
Status : **Answered**
Chosen Option : **C**

Q.60

A person gets an electric shock while using an electric kettle. The probable reason for this is

a) The fuse wire in the circuit is not rated properly.
b) The operating voltage is low.
c) The kettle is not earthed.
d) There is no water in the kettle.

Ans

✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : **1703222348**
Status : **Answered**
Chosen Option : **C**