



अंतरिक्ष उपयोग केंद्र



SPACE APPLICATIONS CENTRE



Participant ID	
Participant Name	
Test Center Name	
Test Date	30/07/2026
Test Time	9:00 AM - 11:15 AM
Subject	11 Technician B Electronics Mechanic

Section : Technician B Electronics Mechanic

- Q.1** Suppose resistivity of Cu material is $1.68 \times 10^{-8} \Omega\text{-m}$. The resistance of a Cu wire of length 4 m and cross section area 1 square meter is:
- $6.72 \times 10^{-8} \Omega$
 - $1.68 \times 10^{-8} \Omega$
 - $0.42 \times 10^{-8} \Omega$
 - $0.16 \times 10^{-8} \Omega$

Ans ☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883584
 Option 1 ID : 47768813773
 Option 2 ID : 47768813774
 Option 3 ID : 47768813775
 Option 4 ID : 47768813776
 Status : Answered
 Chosen Option : A

- Q.2** In a BJT operating in active region, collector current is mainly controlled by:
- Emitter resistance
 - Collector voltage
 - Base current
 - All of the above

Ans ☒ A. a

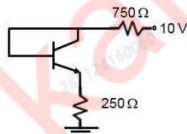
☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883636
 Option 1 ID : 47768813961
 Option 2 ID : 47768813962
 Option 3 ID : 47768813963
 Option 4 ID : 47768813964
 Status : Answered
 Chosen Option : B

- Q.3** In the Si BJT circuit, what will be the current through the collector resistor?



- 2.3 mA
- 4.5 mA
- 9.3 mA
- 10 mA

Ans ☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883631
 Option 1 ID : 47768813961
 Option 2 ID : 47768813962
 Option 3 ID : 47768813963
 Option 4 ID : 47768813964
 Status : Answered
 Chosen Option : C

- Q.4** निम्नलिखित में से किस डायोड का उपयोग आमतौर पर माइक्रोवेव पावर डिटेक्शन के लिए किया जाता है?

- P-I-N डायोड
- P-N जंक्शन डायोड
- शोटकी बैरियर डायोड
- गन डायोड

Ans ☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883585
 Option 1 ID : 47768813777
 Option 2 ID : 47768813778
 Option 3 ID : 47768813779
 Option 4 ID : 47768813780
 Status : Not Answered
 Chosen Option : --

Q.5

The main reason for using ground planes in PCBs is:

- a. Reduce PCB cost
- b. Reduce EMI and provide low-impedance return paths
- c. Increase inductance
- d. Increase PCB mass

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883638
Option 1 ID : 47768813989
Option 2 ID : 47768813990
Option 3 ID : 47768813991
Option 4 ID : 47768813992
Status : Answered
Chosen Option : B

Q.6

Which of the following microwave frequency bands is most affected by rain attenuation in satellite communication?

- a. S-Band
- b. Ku-Band
- c. C-Band
- d. Ka-Band

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883574
Option 1 ID : 47768813733
Option 2 ID : 47768813734
Option 3 ID : 47768813735
Option 4 ID : 47768813736
Status : Not Answered
Chosen Option : --

Q.7

Which of the following devices is most suitable for low noise amplification at microwave frequency?

- a. BJT
- b. JFET
- c. MESFET
- d. MOSFET

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883622
Option 1 ID : 47768813925
Option 2 ID : 47768813926
Option 3 ID : 47768813927
Option 4 ID : 47768813928
Status : Answered
Chosen Option : D

Q.8

Maximum (V_{max}) and minimum (V_{min}) value of an AM envelope are 1.8 V and 1.2 V respectively. What is the value of modulation coefficient (m)?

- a. 0.6
- b. 0.2
- c. 1.6
- d. 3

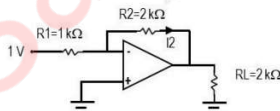
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883611
Option 1 ID : 47768813881
Option 2 ID : 47768813882
Option 3 ID : 47768813883
Option 4 ID : 47768813884
Status : Answered
Chosen Option : A

Q.9

Current I_2 through the resistor R_2 shown in the OP-AMP circuit is:

- a. 1/10 mA
- b. 1/3 mA
- c. 2 mA
- d. 1 mA



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883623
Option 1 ID : 47768813929
Option 2 ID : 47768813930
Option 3 ID : 47768813931
Option 4 ID : 47768813932
Status : Not Answered
Chosen Option : --

Q.10

Which soldering method is primarily used for surface-mount components?

- a. Wave soldering
- b. Reflow soldering
- c. Hand soldering with a soldering iron
- d. Ultrasonic soldering

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883608
 Option 1 ID : 47768813869
 Option 2 ID : 47768813870
 Option 3 ID : 47768813871
 Option 4 ID : 47768813872
 Status : Answered
 Chosen Option : C

Q.11

Which of the following electric bulbs have lowest resistance?

- a. 220 V, 60 W
- b. 220 V, 100 W
- c. 115 V, 60 W
- d. 115 V, 100 W

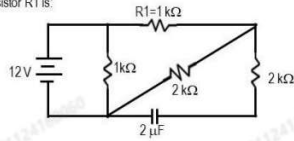
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883582
 Option 1 ID : 47768813765
 Option 2 ID : 47768813766
 Option 3 ID : 47768813767
 Option 4 ID : 47768813768
 Status : Answered
 Chosen Option : D

Q.12

At steady state, current through the resistor R1 is:

- a. 12 mA
- b. 4 mA
- c. 24 mA
- d. 6 mA



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883619
 Option 1 ID : 47768813913
 Option 2 ID : 47768813914
 Option 3 ID : 47768813915
 Option 4 ID : 47768813916
 Status : Not Answered
 Chosen Option : --

Q.13

EMF of a battery refers to:

- a. Open-circuit voltage
- b. Voltage across terminals when current flows
- c. Voltage across terminals under load
- d. Maximum short-circuit current

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883603
 Option 1 ID : 47768813849
 Option 2 ID : 47768813850
 Option 3 ID : 47768813851
 Option 4 ID : 47768813852
 Status : Answered
 Chosen Option : A

Q.14

Which of the following is a non-reciprocal microwave device?

- a. Circulator
- b. Waveguide
- c. Hybrid junction
- d. Directional coupler

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883575
 Option 1 ID : 47768813737
 Option 2 ID : 47768813738
 Option 3 ID : 47768813739
 Option 4 ID : 47768813740
 Status : Not Answered
 Chosen Option : --

- Q.15
- The process of depositing copper on PCB substrate uniformly is called:
- a. Electroplating

b. Patterning

c. Passivation

d. Milling

Ans

☒ A. a

☐ B. b

☐ C. c

☐ D. d

Question ID : 4776883592

Option 1 ID : 47768813805

Option 2 ID : 47768813806

Option 3 ID : 47768813807

Option 4 ID : 47768813808

Status : Answered

Chosen Option : D

- Q.16
- Controlled impedance traces are required in:
- a. RF circuits and high-speed digital lines

b. Audio amplifiers

c. LED driver circuits

d. 50 Hz power PCBs

Ans

☒ A. a

☐ B. b

☐ C. c

☐ D. d

Question ID : 4776883637

Option 1 ID : 47768813985

Option 2 ID : 47768813986

Option 3 ID : 47768813987

Option 4 ID : 47768813988

Status : Answered

Chosen Option : D

- Q.17
- In a parallel LC circuit below resonance frequency, the circuit behaves as:
- a. Capacitive

b. Inductive

c. Oscillatory

d. Resistive

Ans

☒ A. a

☐ B. b

☐ C. c

☐ D. d

Question ID : 4776883596

Option 1 ID : 47768813821

Option 2 ID : 47768813822

Option 3 ID : 47768813823

Option 4 ID : 47768813824

Status : Answered

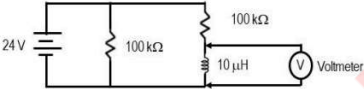
Chosen Option : A

- Q.18
- At steady state, the voltmeter shown in the circuit reads:
- a. 12 V

b. 0 V

c. 12 V

d. 24 V



Ans

☐ A. a

☒ B. b

☐ C. c

☐ D. d

Question ID : 4776883618

Option 1 ID : 47768813909

Option 2 ID : 47768813910

Option 3 ID : 47768813911

Option 4 ID : 47768813912

Status : Not Answered

Chosen Option : --

- Q.19
- Typically which type of driver circuit used for LED lamps:
- a. AC motor driver

b. Constant voltage driver

c. Constant current driver

d. Induction driver

Ans

☐ A. a

☐ B. b

☒ C. c

☐ D. d

Question ID : 4776883639

Option 1 ID : 47768813993

Option 2 ID : 47768813994

Option 3 ID : 47768813995

Option 4 ID : 47768813996

Status : Answered

Chosen Option : C

Q.20 Binary Coded Decimal (BCD) equivalent of $(45)_{10}$ is:

- a. 01000101
- b. 01010100
- c. 00110110
- d. 11011000

Ans

✓ A. a

✗ B. b

✗ C. c

✗ D. d

Question ID : 4776883601

Option 1 ID : 47768813841

Option 2 ID : 47768813842

Option 3 ID : 47768813843

Option 4 ID : 47768813844

Status : Answered

Chosen Option : A

Q.21 An ideal voltage regulator has a voltage regulation of:

- a. 50 %
- b. 100 %
- c. 0 %
- d. 5 %

Ans

✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : 4776883583

Option 1 ID : 47768813769

Option 2 ID : 47768813770

Option 3 ID : 47768813771

Option 4 ID : 47768813772

Status : Answered

Chosen Option : B

Q.22 The free space wavelength of transmitted signal from a satellite of frequency 30 GHz is:

- a. 3 cm
- b. 30 cm
- c. 1 cm
- d. 300 cm

Ans

✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : 4776883602

Option 1 ID : 47768813845

Option 2 ID : 47768813846

Option 3 ID : 47768813847

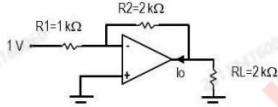
Option 4 ID : 47768813848

Status : Answered

Chosen Option : C

Q.23 Current I_o shown in the OP-AMP circuit is:

- a. 1/10 mA
- b. 1/3 mA
- c. 2 mA
- d. 1 mA



Ans

✗ A. a

✗ B. b

✓ C. c

✗ D. d

Question ID : 4776883625

Option 1 ID : 47768813937

Option 2 ID : 47768813938

Option 3 ID : 47768813939

Option 4 ID : 47768813940

Status : Answered

Chosen Option : D

Q.24 The PIV (Peak Inverse Voltage) of each diode in a bridge rectifier is (V_m is amplitude of the AC voltage):

- a. V_m
- b. $2V_m$
- c. $V_m/2$
- d. Zero

Ans

✓ A. a

✗ B. b

✗ C. c

✗ D. d

Question ID : 4776883560

Option 1 ID : 47768813677

Option 2 ID : 47768813678

Option 3 ID : 47768813679

Option 4 ID : 47768813680

Status : Answered

Chosen Option : B

Q.25

Two types of wires of same material and equal length but diameter of one wire is 2 times of another. Resistance of the thick wire is:

- a. Half
- b. Twice
- c. Four times
- d. One fourth

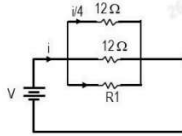
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883580
 Option 1 ID : 47768813757
 Option 2 ID : 47768813758
 Option 3 ID : 47768813759
 Option 4 ID : 47768813760
 Status : Answered
 Chosen Option : A

Q.26

The value of resistor R1 is:

- a. $R1 = 4\ \Omega$
- b. $R1 = 2\ \Omega$
- c. $R1 = 8\ \Omega$
- d. $R1 = 6\ \Omega$



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883621
 Option 1 ID : 47768813921
 Option 2 ID : 47768813922
 Option 3 ID : 47768813923
 Option 4 ID : 47768813924
 Status : Answered
 Chosen Option : D

Q.27

An AC circuit of series combination of $3\ \Omega$ resistor and a inductive reactance of $4\ \Omega$. If current flowing through the circuit is 1 A, what is the voltage applied to the circuit.

- a. 3 V
- b. 4 V
- c. 5 V
- d. 7 V

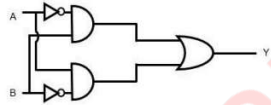
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883612
 Option 1 ID : 47768813885
 Option 2 ID : 47768813886
 Option 3 ID : 47768813887
 Option 4 ID : 47768813888
 Status : Answered
 Chosen Option : C

Q.28

Which of the following Boolean expression correctly represents the logic circuit diagram?

- a. $Y = (A+B)' \cdot (A'+B)$
- b. $Y = AB + A'B'$
- c. $Y = (A+B)' + (A+B)$
- d. $Y = AB' + A'B$



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883576
 Option 1 ID : 47768813741
 Option 2 ID : 47768813742
 Option 3 ID : 47768813743
 Option 4 ID : 47768813744
 Status : Answered
 Chosen Option : D

Q.29

In a series LCR circuit at resonance frequency, the circuit behaves as:

- a. Capacitive
- b. Inductive
- c. Oscillatory
- d. Resistive

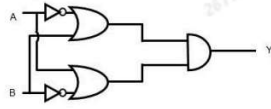
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883597
 Option 1 ID : 47768813825
 Option 2 ID : 47768813826
 Option 3 ID : 47768813827
 Option 4 ID : 47768813828
 Status : Answered
 Chosen Option : D

Q.30

Which of the following Boolean expression correctly represents the logic circuit diagram?

- a. $Y = (A+B) \cdot (A+B)'$
 b. $Y = AB + A'B'$
 c. $Y = (A+B)' + (A+B)$
 d. $Y = AB' + A'B$



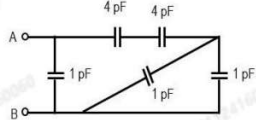
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883577
 Option 1 ID : 47768813745
 Option 2 ID : 47768813746
 Option 3 ID : 47768813747
 Option 4 ID : 47768813748
 Status : Answered
 Chosen Option : A

Q.31

Equivalent capacitance across the terminal AB is:

- a. 10 pF
 b. 6 pF
 c. 2 pF
 d. 1 pF



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883634
 Option 1 ID : 47768813973
 Option 2 ID : 47768813974
 Option 3 ID : 47768813975
 Option 4 ID : 47768813976
 Status : Not Answered
 Chosen Option : --

Q.32

Power gain of a microwave amplifier is measured using:

- a. Multimeter
 b. Oscilloscope
 c. Frequency counter
 d. Network analyzer

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883595
 Option 1 ID : 47768813817
 Option 2 ID : 47768813818
 Option 3 ID : 47768813819
 Option 4 ID : 47768813820
 Status : Answered
 Chosen Option : B

Q.33

Photodiodes operate mainly in:

- a. AC mode
 b. Forward bias
 c. No bias
 d. Reverse bias

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883604
 Option 1 ID : 47768813853
 Option 2 ID : 47768813854
 Option 3 ID : 47768813855
 Option 4 ID : 47768813856
 Status : Answered
 Chosen Option : D

Q.34

For a full wave rectifier with load R_L , the average output voltage is (V_m is amplitude of the sinusoidal AC voltage):

- a. V_m
 b. $V_m / 2$
 c. V_m / π
 d. $2V_m / \pi$

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883562
 Option 1 ID : 47768813685
 Option 2 ID : 47768813686
 Option 3 ID : 47768813687
 Option 4 ID : 47768813688
 Status : Answered
 Chosen Option : D

Q.35

Calibration of a measurement instrument improves?

- a. Accuracy
- b. Resolution
- c. Noise immunity
- d. Sensitivity

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883586
Option 1 ID : 47768813781
Option 2 ID : 47768813782
Option 3 ID : 47768813783
Option 4 ID : 47768813784
Status : Answered
Chosen Option : A

Q.36

Output X of a digital logic circuit is given by $X = A'BC(B+D)'$. Determine X, if A=0, B=1, C=1 and D=0.

- a. 0
- b. 1
- c. 100
- d. 10

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883590
Option 1 ID : 47768813797
Option 2 ID : 47768813798
Option 3 ID : 47768813799
Option 4 ID : 47768813800
Status : Answered
Chosen Option : A

Q.37

If a transformer operates at 50 Hz instead of 60 Hz with same voltage, core loss will.

- a. Increase
- b. Decrease
- c. Remain constant
- d. Becomes zero

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883572
Option 1 ID : 47768813725
Option 2 ID : 47768813726
Option 3 ID : 47768813727
Option 4 ID : 47768813728
Status : Answered
Chosen Option : A

Q.38

An AC voltage of 100 V (RMS) is applied across a resistance of 100 Ω . The energy consumed in 5 sec is:

- a. 500 Watt
- b. 500 Joule
- c. 1 Joule
- d. 1 Watt

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883609
Option 1 ID : 47768813873
Option 2 ID : 47768813874
Option 3 ID : 47768813875
Option 4 ID : 47768813876
Status : Answered
Chosen Option : A

Q.39

Crimping is preferred over soldering in wiring harness because:

- a. It offers stronger mechanical reliability
- b. It is cheaper
- c. It needs no tools
- d. It increases resistance

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883570
Option 1 ID : 47768813717
Option 2 ID : 47768813718
Option 3 ID : 47768813719
Option 4 ID : 47768813720
Status : Answered
Chosen Option : A

Q.40 The change in output voltage of a 10 V output voltage regulator from no load to full load is 10 mV. The load regulation is:

- a. 100 %
- b. 12 %
- c. 1 %
- d. 0.1 %

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883616
Option 1 ID : 47768813901
Option 2 ID : 47768813902
Option 3 ID : 47768813903
Option 4 ID : 47768813904
Status : Answered
Chosen Option : D

Q.41 In the circuit, the power dissipation to the load resistance R_L is:

- a. 5 Watt
- b. 4 Watt
- c. 4.5 Watt
- d. 6.5 Watt



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883635
Option 1 ID : 47768813977
Option 2 ID : 47768813978
Option 3 ID : 47768813979
Option 4 ID : 47768813980
Status : Not Answered
Chosen Option : --

Q.42 With increase of operating temperature, RF resistance of a constant current bias P-I-N diode:

- a. Decreases
- b. Becomes zero
- c. Remains constant
- d. Increases

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883579
Option 1 ID : 47768813753
Option 2 ID : 47768813754
Option 3 ID : 47768813755
Option 4 ID : 47768813756
Status : Answered
Chosen Option : A

Q.43 The ripple factor of a full-wave rectifier with no filter is approximately:

- a. 1.21
- b. 0.82
- c. 0.482
- d. 2.2

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883564
Option 1 ID : 47768813693
Option 2 ID : 47768813694
Option 3 ID : 47768813695
Option 4 ID : 47768813696
Status : Answered
Chosen Option : C

Q.44 In amplitude modulation (AM), the amplitude of carrier wave changes according to the:

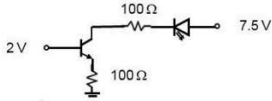
- a. Frequency of the modulating signal
- b. Frequency of the carrier wave
- c. Amplitude of modulating signal
- d. Amplitude of the carrier wave

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883613
Option 1 ID : 47768813889
Option 2 ID : 47768813890
Option 3 ID : 47768813891
Option 4 ID : 47768813892
Status : Answered
Chosen Option : C

Q.45 In the Si transistor based LED driver circuit, the voltage drop across the LED is 2 V. Approximate LED current in the circuit?

a. 10 mA
b. 13 mA
c. 5 mA
d. 2 mA



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883629
Option 1 ID : 47768813953
Option 2 ID : 47768813954
Option 3 ID : 47768813955
Option 4 ID : 47768813956
Status : Answered
Chosen Option : C

Q.46 LED stack lights are preferred over filament lamps due to:

a. Less heat generation and last longer
b. Consume more power
c. Have shorter life
d. Cheaper to manufacture

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883606
Option 1 ID : 47768813861
Option 2 ID : 47768813862
Option 3 ID : 47768813863
Option 4 ID : 47768813864
Status : Answered
Chosen Option : A

Q.47 Decimal equivalent of $(7D)_{16}$ is:

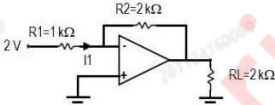
a. AC
b. 23
c. EA
d. 125

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883600
Option 1 ID : 47768813837
Option 2 ID : 47768813838
Option 3 ID : 47768813839
Option 4 ID : 47768813840
Status : Answered
Chosen Option : D

Q.48 Current I_1 through the resistor R_1 shown in the OP-AMP circuit is:

- a. 1/10 mA
b. 1/3 mA
c. 2 mA
d. 1 mA

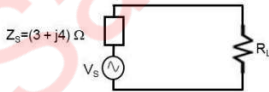


Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883624
Option 1 ID : 47768813933
Option 2 ID : 47768813934
Option 3 ID : 47768813935
Option 4 ID : 47768813936
Status : Answered
Chosen Option : C

Q.49 The load R_L is pure resistive. The value of R_L to deliver maximum power by the source V_s to R_L is:

- a. 3 Ω
b. 4 Ω
c. 5 Ω
d. 9 Ω



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883628
Option 1 ID : 47768813949
Option 2 ID : 47768813950
Option 3 ID : 47768813951
Option 4 ID : 47768813952
Status : Not Answered
Chosen Option : --

Q.50

The slope of a first-order RC low-pass filter beyond cutoff is:

- a. -20 dB/octave
- b. -10 dB/octave
- c. -12 dB/octave
- d. -6 dB/octave

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883565
Option 1 ID : 47768813697
Option 2 ID : 47768813698
Option 3 ID : 47768813699
Option 4 ID : 47768813700
Status : Not Answered
Chosen Option : --

Q.51

A Zener diode used as a regulator has $V_z = 6$ V and maximum power rating 0.9 W. Maximum Zener current allowed is:

- a. 150 mA
- b. 50 mA
- c. 100 mA
- d. 200 mA

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883571
Option 1 ID : 47768813721
Option 2 ID : 47768813722
Option 3 ID : 47768813723
Option 4 ID : 47768813724
Status : Answered
Chosen Option : A

Q.52

Excessive heating in soldering causes:

- a. Icicle formation
- b. Cold solder joint
- c. Dry solder joint
- d. Lifted pads

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883591
Option 1 ID : 47768813801
Option 2 ID : 47768813802
Option 3 ID : 47768813803
Option 4 ID : 47768813804
Status : Answered
Chosen Option : D

Q.53

If a power meter measures 49 W when actual power is 50 W, the accuracy is:

- a. 98 %
- b. 2 %
- c. 99 %
- d. 49/50 %

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883588
Option 1 ID : 47768813789
Option 2 ID : 47768813790
Option 3 ID : 47768813791
Option 4 ID : 47768813792
Status : Answered
Chosen Option : A

Q.54

The phase shift of a low pass RC filter at very low frequencies approaches:

- a. 0°
- b. 45°
- c. 90°
- d. 180°

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883563
Option 1 ID : 47768813689
Option 2 ID : 47768813690
Option 3 ID : 47768813691
Option 4 ID : 47768813692
Status : Answered
Chosen Option : D

Q.55

High precision and low accuracy of a measurement instrument means:

- a. Readings are only close to each other
- b. Readings are spread out
- c. Readings are close to each other but far from true value
- d. Instrument is ideal

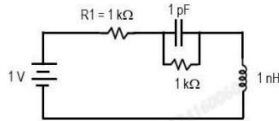
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883589
Option 1 ID : 47768813793
Option 2 ID : 47768813794
Option 3 ID : 47768813795
Option 4 ID : 47768813796
Status : Answered
Chosen Option : C

Q.56

At steady state, current flowing through the resistor R1 is:

- a. 1 mA
- b. 2 mA
- c. 0.5 mA
- d. 1/3 mA



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883620
Option 1 ID : 47768813917
Option 2 ID : 47768813918
Option 3 ID : 47768813919
Option 4 ID : 47768813920
Status : Not Answered
Chosen Option : --

Q.57

A super-heterodyne receiver has an intermediate frequency of 455 KHz. What is the LO frequency when the received frequency is 540 KHz?

- a. 995 KHz
- b. 540 KHz
- c. 455 KHz
- d. 910 KHz

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883610
Option 1 ID : 47768813877
Option 2 ID : 47768813878
Option 3 ID : 47768813879
Option 4 ID : 47768813880
Status : Answered
Chosen Option : A

Q.58

The package most suitable for microwave frequency space applications is:

- a. Ceramic package
- b. Plastic DIP
- c. QFN with exposed pad
- d. TO-92

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883568
Option 1 ID : 47768813709
Option 2 ID : 47768813710
Option 3 ID : 47768813711
Option 4 ID : 47768813712
Status : Answered
Chosen Option : A

Q.59

What will be the inductive reactance (XL) of a circuit if operating frequency becomes doubled?

- a. Remain same (XL)
- b. Doubled (2XL)
- c. One fourth (XL/4)
- d. Half (XL/2)

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883615
Option 1 ID : 47768813897
Option 2 ID : 47768813898
Option 3 ID : 47768813899
Option 4 ID : 47768813900
Status : Answered
Chosen Option : B

Q.60

Above cutoff frequency, the main loss mechanism in microwave waveguides is:

- a. Intermodulation loss
- b. Radiation loss
- c. Dielectric loss
- d. Conduction loss on walls

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883573
Option 1 ID : 47768813729
Option 2 ID : 47768813730
Option 3 ID : 47768813731
Option 4 ID : 47768813732
Status : Not Answered
Chosen Option : --

Q.61

Infrared sensors operate on?

- a. Magnetic radiation
- b. UV waves
- c. Visible light
- d. Thermal radiation

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883605
Option 1 ID : 47768813857
Option 2 ID : 47768813858
Option 3 ID : 47768813859
Option 4 ID : 47768813860
Status : Answered
Chosen Option : B

Q.62

A circuit consists of series combination of inductance and capacitance of values 25 μH and 25 pF . The resonant frequency of the circuit is:

- a. $20/\pi$ MHz
- b. $10/\pi$ MHz
- c. $25/\pi$ MHz
- d. $20/\pi$ kHz

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883598
Option 1 ID : 47768813829
Option 2 ID : 47768813830
Option 3 ID : 47768813831
Option 4 ID : 47768813832
Status : Answered
Chosen Option : C

Q.63

The sensitivity of a radio receiver refers to:

- a. Ability to detect weak signals
- b. Ability to select desired station
- c. Ability to reduce noise
- d. Ability to reject unwanted noise

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883607
Option 1 ID : 47768813865
Option 2 ID : 47768813866
Option 3 ID : 47768813867
Option 4 ID : 47768813868
Status : Answered
Chosen Option : A

Q.64

Least count of a measurement instrument affects mainly?

- a. Accuracy
- b. Resolution
- c. Noise immunity
- d. Sensitivity

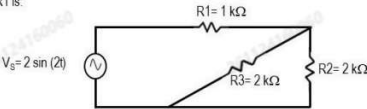
Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883587
Option 1 ID : 47768813785
Option 2 ID : 47768813786
Option 3 ID : 47768813787
Option 4 ID : 47768813788
Status : Answered
Chosen Option : D

Q.65

RMS current flowing through the resistor R1 is:

- a. 1 mA
- b. 2 mA
- c. $1/\sqrt{2}$ mA
- d. 2 mA



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883633
Option 1 ID : 47768813969
Option 2 ID : 47768813970
Option 3 ID : 47768813971
Option 4 ID : 47768813972
Status : Answered
Chosen Option : C

Q.66

The power dissipated within the load resistance R_L is:

- a. 3 W
- b. 4 W
- c. 2 W
- d. 9 W



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883627
Option 1 ID : 47768813945
Option 2 ID : 47768813946
Option 3 ID : 47768813947
Option 4 ID : 47768813948
Status : Answered
Chosen Option : B

Q.67

An ac circuit is series combination of 3Ω resistance and 4Ω capacitive reactance. If current flowing through the circuit is 2 A, what is the voltage applied to the circuit?

- a. 14 V
- b. 10 V
- c. 20 V
- d. 28 V

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883614
Option 1 ID : 47768813893
Option 2 ID : 47768813894
Option 3 ID : 47768813895
Option 4 ID : 47768813896
Status : Answered
Chosen Option : B

Q.68

Wire bonding in IC packaging typically uses:

- a. Silver wires
- b. Gold wires
- c. Titanium wires
- d. Steel wires

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883569
Option 1 ID : 47768813713
Option 2 ID : 47768813714
Option 3 ID : 47768813715
Option 4 ID : 47768813716
Status : Answered
Chosen Option : A

Q.69

The color code of a carbon resistor of value $32 \text{ M}\Omega \pm 32 \text{ k}\Omega$ is:

- a. Green, Red, Violet, Violet
- b. Orange, Red, Blue, Violet
- c. Orange, Red, Blue, Brown
- d. Green, Red, Blue, Gray

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883578
Option 1 ID : 47768813749
Option 2 ID : 47768813750
Option 3 ID : 47768813751
Option 4 ID : 47768813752
Status : Answered
Chosen Option : A

Q.70

Zener diode generally used to realize:

- a. Rectifier circuit
- b. Voltage regulator circuit
- c. Signal amplifier
- d. Signal generator

Ans

☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883581

Option 1 ID : 47768813761

Option 2 ID : 47768813762

Option 3 ID : 47768813763

Option 4 ID : 47768813764

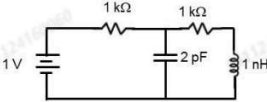
Status : Answered

Chosen Option : B

Q.71

At steady state, voltage across the 2 pF capacitor is:

- a. 1 V
- b. 2 V
- c. 0.5 V
- d. 0 V



Ans

☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883630

Option 1 ID : 47768813957

Option 2 ID : 47768813958

Option 3 ID : 47768813959

Option 4 ID : 47768813960

Status : Not Answered

Chosen Option : --

Q.72

What will be the ripple frequency of a full wave rectified signal for a supply voltage of frequency 50 Hz?

- a. 50 Hz
- b. 100 Hz
- c. 25 Hz
- d. 200 Hz

Ans

☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883561

Option 1 ID : 47768813681

Option 2 ID : 47768813682

Option 3 ID : 47768813683

Option 4 ID : 47768813684

Status : Answered

Chosen Option : B

Q.73

In PCB wiring, vias are used to:

- a. Reduce copper thickness
- b. Supply external power
- c. Connect components mechanically
- d. Connect traces between layers

Ans

☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883567

Option 1 ID : 47768813705

Option 2 ID : 47768813706

Option 3 ID : 47768813707

Option 4 ID : 47768813708

Status : Answered

Chosen Option : D

Q.74

Internal resistance of an ideal ammeter is:

- a. Zero
- b. Infinite
- c. Very high
- d. Changes with current

Ans

☒ A. a

☒ B. b

☒ C. c

☒ D. d

Question ID : 4776883594

Option 1 ID : 47768813813

Option 2 ID : 47768813814

Option 3 ID : 47768813815

Option 4 ID : 47768813816

Status : Answered

Chosen Option : A

Q.75
Reflow soldering is primarily used for:

- a. Through-hole components
- b. Power modules
- c. Wire bonding
- d. SMT components

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883593
Option 1 ID : 47768813809
Option 2 ID : 47768813810
Option 3 ID : 47768813811
Option 4 ID : 47768813812
Status : Not Answered
Chosen Option : --

Q.76
Hexadecimal equivalent of $(123)_{10}$ is:

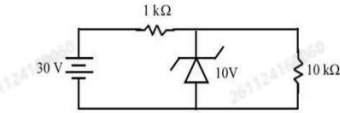
- a. EA
- b. 23
- c. 7B
- d. AC

Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883599
Option 1 ID : 47768813833
Option 2 ID : 47768813834
Option 3 ID : 47768813835
Option 4 ID : 47768813836
Status : Answered
Chosen Option : C

Q.77
Breakdown voltage of the Zener diode in the circuit is 10 V. Current passes through the Zener diode is:

- a. 20 mA
- b. 19 mA
- c. 29 mA
- d. 300 mA

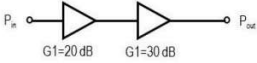


Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883626
Option 1 ID : 47768813941
Option 2 ID : 47768813942
Option 3 ID : 47768813943
Option 4 ID : 47768813944
Status : Answered
Chosen Option : A

Q.78
Two amplifiers are connected in cascade of power gain 20 dB and 30 dB. Overall power gain of the system is:

- a. 130 dB
- b. 100 dB
- c. 75 dB
- d. 50 dB

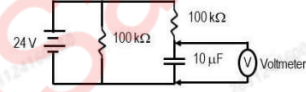


Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883632
Option 1 ID : 47768813965
Option 2 ID : 47768813966
Option 3 ID : 47768813967
Option 4 ID : 47768813968
Status : Answered
Chosen Option : D

Q.79
At steady state, the voltmeter shown in the circuit reads:

- a. 12 V
- b. 24 V
- c. 1.2 V
- d. 2.4 V



Ans ☒ A. a
☒ B. b
☒ C. c
☒ D. d

Question ID : 4776883617
Option 1 ID : 47768813905
Option 2 ID : 47768813906
Option 3 ID : 47768813907
Option 4 ID : 47768813908
Status : Not Answered
Chosen Option : --

Q.80

A star-topology ground connection is used to:

- a. Reduce voltage gain
- b. Reduce ground loops
- c. Increase wiring length
- d. Improve visual appearance

Ans

- ☒ A. a
- ☒ B. b
- ☒ C. c
- ☒ D. d

Question ID : 4776883566

Option 1 ID : 47768813701

Option 2 ID : 47768813702

Option 3 ID : 47768813703

Option 4 ID : 47768813704

Status : Answered

Chosen Option : B

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