17643

BRAINWARE UNIVERSITY

Term End Examination 2025-2026
Programme – Dip.RA-2024
Course Name – Electronic Measurements and Instrumentation
Course Code - DEC30104
(Semester III)

Full Marks : 60 **Time : 2:30 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question) 1 x 15=15

1. *Choose the correct alternative from the following :*

(i) A moving-coil permanent-magnet instrument can be select as ..... by using a low resistance shunt.
a) ammeter b) voltmeter
c) flux-meter d) ballistic galvanometer

(ii) A dynamometer wattmeter can be operate to measure for
a) D.C. only b) A.C. only
c) both D.C. and A.C. d) none of the above

(iii) For measurements on high voltage capacitors, the suitable bridge can apply
a) Wein bridge b) Modified De Santy's bridge
c) Schering bridge d) none of the above

(iv) Select, The full range of audibility in audio frequency oscillator is .....
a) 0 to 20 Hz b) 20 Hz to 2 kHz
c) 20 Hz to 20 kHz d) 20 Hz to 20 MHz

(v) The frequency can be calculate by
a) wien's bridge b) Schering Bridge
c) De Sauty's Bridge d) Anderson's Bridge

(vi) In function generator, the output waveform of integrator express_____ wave
a) Sinusoidal b) Square
c) Triangular d) Saw-tooth

(vii) Select, A liquid crystal display requires
a) An AC drive b) Both AC and DC drive
c) Both AC and DC drive d) None of these

(viii) Write, With the increase in the intensity of light, the resistance of a photovoltaic cell
a) Increases b) Decreases

c) Remains same
d) None of these

(ix) Vibration galvanometer are generally select

a) For measuring electric charges
b) As null-point detectors in ac bridges
c) As null-point detectors in dc bridges
d) For measuring power

(x) The Ac Bridge which choose for the measurement of frequency is

a) Schering bridge
b) Wien bridge
c) Hay's bridge
d) Anderson bridge

(xi) Schering bridges are choose, for the measurement of

a) Unknown capacitance
b) Dielectric loss
c) Power factor
d) All of these

(xii) Select the bridge, suitable for the measurement of capacitance is

a) Anderson's bridge
b) Hay's bridge
c) Owen's bridge
d) None of These

(xiii) Under balanced condition,select the current flowing through the detector is equal to

a) 0.04166666666666666
b) 0
c) Sum of the currents flowing in the
d) Difference between the current flowing in the

(xiv) Discuss, Electron gun section _____

a) provides sharp beam
b) provides poorly focussed beam
c) doesn't provide any beam
d) provides electrons only

(xv) Discuss, Control grid is given _____

a) positive voltage
b) negative voltage
c) neutral voltage
d) zero voltage

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Discuss Advantage and disadvantages of PMMC instrument. (3)

3. List the important items in the specifications for sine wave generators and function generators. (3)

4. Describe the function of deflecting controlling and damping torque in measuring instrument. (3)

5. Describe the advantages of electronic voltmeter over the other voltmeter. (3)

6. Write the importance of bridge. (3)

OR

Write the significance of sensitivity in voltmeters. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Deduce the torque equation of the instrument. (5)

8. Sketch as OP-AMP monostable multivibrator circuit. Show the waveforms at various point in the circuit. (5)

9. Explain briefly about types of Errors. (5)

10. Explain with a diagram a basic AC bridge. (5)

11. Write about the successive approximation type digital voltmeter. (5)

12. Derive the balance condition for a capacitance comparison bridge with diagram. (5)

OR

Derive the balance condition for an inductance comparison bridge with diagram. (5)

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