



BRAINWARE UNIVERSITY

Term End Examination 2023-2024

Programme – Diploma in Robotics & Automation-2022

Course Name – Electronic Measurements and Instrumentation

Course Code - ECPC305

(Semester III)

Library
Brainware University
39C, Ramkrishna Road, Barasat
Kolkata, West Bengal-700125

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) In function generator, the output waveform of integrator express _____ wave
- a) Sinusoidal
b) Square
c) Triangular
d) Saw-tooth
- (ii) 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
- (iii) Q meter choose to measure the properties of
- a) Inductive coils
b) Non inductive coils
c) Capacitive coils
d) Both (a) and (c)
- (iv) Choose, which among the following is not the type of digital voltmeters?
- a) Ramp type
b) Integrating
c) Potentiometric type
d) None of these
- (v) 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
- (vi) 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
- (vii) The Ac Bridge which choose for the measurement of frequency is
- a) Schering bridge
b) Wien bridge
c) Hay's bridge
d) Anderson bridge
- (viii) Express, Electron beam is deflected in _____
- a) 1 direction
b) 4 directions
c) 3 directions
d) 2 directions
- (ix) Write, CRO is a _____
- a) fast x-y plotter
b) slow x-y plotter

- c) medium x-y plotter
 d) not a plotter
- (x) Discuss, Electron gun section _____
 a) provides sharp beam
 b) provides poorly focussed beam
 c) doesn't provide any beam
 d) provides electrons only
- (xi) Explain, What determines light intensity in a CRT?
 a) voltage
 b) current
 c) momentum of electrons
 d) fluorescent screen
- (xii) Classify, Focusing and accelerating anodes are _____
 a) rectangular
 b) cylindrical
 c) spherical
 d) square
- (xiii) Classify, Deflection system of a CRT consists of _____
 a) 4 plates
 b) 6 plates
 c) 2 plates
 d) 8 plates
- (xiv) 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
- (xv) Define, What is the role of CRT?
 a) to emit electrons
 b) to emit protons
 c) to emit neutrons
 d) to emit alpha particles

Group-B

(Short Answer Type Questions)

3 x 5=15

2. A circuit was tune for resonance by 8 different students, and the value of resonance frequency in KHz, where recoded as 532, 548, 543, 535, 546, 531, 543 and 536. Calculate arithmetic mean value, deviation, average deviation and standard deviation. (3)
3. Write short notes on Q meter. (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. Describe the function of spectrum analyzer? (3)

OR

Describe the purpose of function generator? (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

7. Draw the basic block diagram of an oscilloscope and state the functions of each block. (5)
8. Develop the torque equation for a PMMC instrument and show that is scale is linear. (5)

9. Explain with diagram the operation of Wheatstone bridge. (5)
10. List the various controls on the front panel of a CRO. Discuss the function of various controls on the front panel of a CRO. (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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