SEM-2 HONOURS PRACTICAL EXAMINATION,2021

PAPER : CC-3 TIME : 2HRS FULL MARKS : 30

ANSWER ANY *ONE* OF THE FOLLOWING QUESTIONS

1 a) Write down necessary working formula for determining low resistance (of the order few ohm to fractional of an ohm) with Potentiometer. 5

b) Draw the necessary circuit diagram for determining low resistance (of the order few ohm to fractional of an ohm) with Potentiometer. 5

c) Why we are using a high resistance in series with the above said low resistance? 5

d) Draw a blank table for the above experiment. 5

e) Can we measure the e.m.f of a battery with the help of a voltmeter? 5

f) At the null condition galvanometer reading is zero but ammeter reading in series with driver battery is not zero – explain why it is so. 5

2. a) On what principle does Cary foster bridge work? Write down the principle of finding unknown resistance using this bridge .Draw the circuit diagram. Construct the relevant empty table. 1+3+5+5

b) What is the function of a commutator? What is null point? 2+2

c) What is ρ? Draw an empty table for the determination of ρ. 2+5

d) Why do you have to take direct and reverse reading for calculating null point? What is the length of the bridge wire? What is electrical mid point? 2+1+2

3. a) What is a series L-C-R circuit? What is the expression of i in this circuit? Why it is called acceptor circuit? Write down the theory of the determination of current resonance curve using series L-C-R circuit. 2+5+ 1+ 4

b) What is impedance? What is Q factor? Construct a table for finding Q from resonance curve. Do you know any other method of finding Q? What is its unit? 2+1+3+1+1

c) How do you define resonance? Draw the current resonance curve. What do you mean by sharpness of resonance? What is half power frequency? What do you mean by band width? 2+3+2+ 1+ 2

4.(a)Write down the relevant theory for determination of horizontal component of earth's magnetic field with the help of deflection and vibration magnetometer.

(b) State the various steps of the experiment briefly.

(c) Draw the relevant table for measuring deflection and sketch the relevant graph.

(d) State four precautions to be taken during the experiment. 10 +8 +8+4

5.(a) Define mutual inductance between two coils.

(b) Draw the relevant circuit to find the mutual inductance between two coils in the laboratory.

(c) Give the functions of each component of the above drawn circuit.

(d) Write down the theory of the experiment.

(e) Explain briefly the various steps of the experiment and give a sketch of the experimental result.

(f) State two precautions that are to be taken during the experiment.

2+5+7+6+8+2