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B.Sc./2nd Sem/Physics (H)/P/22(CBCS)

2022

B.Sc. 2nd Semester Examination

PHYSICS (Honours)

Paper : C 3-P

Electricity and Magnetism

[Practical]

Full Marks : 20

Time : Three Hours

*The figures in the margin indicate full marks.
Candidates are required to give their answers
in their own words as far as practicable.*

I. Write down :

- (i) the theory
- (ii) working principle
- (iii) experimental procedure

for any *one* of the following experiments : $15 \times 1 = 15$

1. Determination of the capacitance of a given capacitor using an ac source of low frequency (~ 50 Hz).
2. Determination of an unknown Low Resistance (r) using Potentiometer.
3. Determination of an unknown Low Resistance using Carey Foster's Bridge.

4. Determine the resistance of a galvanometer using Thomson's method.
5. Measurement of field strength B and its variation in a solenoid (determine dB/dx).
6. Verify the Thevenin and Norton theorems.
7. Verify the Superposition theorems.
8. Verify the Maximum power transfer theorems.
9. Determination of self-inductance of a coil by Anderson's bridge.
10. Study the response curve of a Series LCR circuit and determine its (i) Resonant frequency, (ii) Impedance at resonance, (iii) Quality factor Q and (iv) Band width.
11. Study the response curve of a parallel LCR circuit and determine its (i) Anti-resonant frequency and (ii) Quality factor Q.

II. Laboratory Note Book 2

III. Viva-voce 3
