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SB—82—2022

FACULTY OF SCIENCE

B.Sc. (First Year) (Second Semester) EXAMINATION

MAY/JUNE, 2022

(NEW PATTERN))

PHYSICS

Paper-IV

(Electricity and Magnetism)

(Wednesday, 15-06-2022)

Time : 10.00 a.m. to 12.30 p.m.

Time— 2½ Hours

Maximum Marks—40

Note : *All* questions are compulsory.

1. Explain in detail series and parallel resonance circuit (LCR). 15

Or

(a) Derive the relation between turns ratio with voltage ratio and current ratio of the transformer. 7

(b) What is difference between Self Induction and Mutual Induction ? 8

2. Explain Motion of charged particles in uniform electric field and derive Maxwell's displacement current. 15

Or

(a) Explain I-H curve By magnetometer method. 7

(b) Derive an expression for mutual inductance of a pair of Coil. 8

3. Write short notes on (any two) : 10

(a) Wheatstone bridge

(b) Hysteresis curve

(c) Lorentz force and force on a current carrying conductor.

(d) Faraday's Law of Electromagnetic Induction.

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