UG (CBCS) EVEN SEMESTER EXAMINATION, 2024

EDUCATION
(B.Sc. B.Ed.)

6th Semester

Course No. : BSPH – 602

(Mathematical Physics II, Electricity & Magnetism II)

Full Marks : 50
Pass Marks : 20

Time : 2 hours

The figures in the margin indicate full marks for the questions

(*Answer five questions*)

1. (a) If f(z) in analytic function with constant modulus, then show that f(z) is constant. 5

   (b) Show that inner products of tensors A_r^p and B_t^{qs} is a tensor of rank 3. 5

Or

2. (a) Evaluate the polar form of Cauchy-Riemann equation. 5

   (b) Explain the outer product of two tensors. 5

3. Calculate the equivalent inductance of two coils connected in series. 10

Or

4. Calculate the equivalent inductance of two coils connected in parallel. 10

5. (a) Explain the Domain theory of ferromagnetism. 6

   (b) Write short notes on Hysteresis. 4

Or

6. (a) Write short notes on spin wave. 5

   (b) Explain the importance of curie temperature. 5

7. (a) Discuss about he Maxwell's equations. 5

   (b) Explain skin effect. 5

Or

8. Applying Maxwell's equations drive the wave equation for $\vec{H}$ and $\vec{E}$. 10

9. (a) What is Raman effect? 5

   (b) Hence explain the blueness of sky. 5

Or

10. Explain the current-voltage relationship of a series LCR circuit acting under sinusoidal voltage. 10

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