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NA—40—2023

FACULTY OF SCIENCE AND TECHNOLOGY

B.Sc. (First Semester) EXAMINATION

NOVEMBER/DECEMBER, 2023

(New Course)

PHYSICS

Paper-II

(Mathematical Methods in Physics)

(Monday, 11-12-2023)

Time : 10.00 a.m. to 12.00 noon.

Time—2 Hours

Maximum Marks—40

N.B. :— (i) *All questions are compulsory.*

(ii) *Figures to the right indicate full marks.*

1. Explain scalar triple product and vector triple product with proper examples. 15

Or

(a) Explain complex algebra for two complex number. 8

(b) Find $Z_1 + Z_2$ and $Z_1 \times Z_2$ 7

$$Z_1 = 5+3i$$

$$Z_2 = 2+4i$$

2. Evaluate coefficients of Fourier series a_0 , a_n and b_n . 15

Or

(a) Explain application of chain rule. 8

(b) Explain rules for finding complementary function for linear homogenous partial differential equation. 7

P.T.O.

WT

(2)

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3. Write short notes on any *two* :

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- (a) Find Fourier series for square wave.
- (b) Addition, subtraction, multiplication of complex number and its complex conjugates.
- (c) Condition for maxima and minima.
- (d) Divergence and curl of vector.

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