3003

BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2021

FIRST YEAR (COMMON) EXAMINATION

ENGINEERING PHYSICS

Time : 3 hours]   [*Total Marks* : 80

PART—A

4×5=20

Instructions :   (1) Answer *any* **five** questions.

                   (2) Each question carries **four** marks.

                   (3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write the fundamental quantities in SI system with their units.

2. Define vector and scalar quantities.

3. What is acceleration due to gravity (g) and write its value?

4. State the laws of friction.

5. Write the conditions of simple harmonic motion.

6. Write a short note on isothermal process.

7. Write Sabine's formula and name the terms in it.

8. Define stress and strain.

9. State Coulomb's inverse-square law of magnetism.

10. Write the applications of optical fibres.

PART—B

15×4=60

Instructions : (1) Answer *any* **four** questions.

(2) Each question carries **fifteen** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. State and explain triangle law and polygon law of vectors.

12. Define projectile and prove that the path of an oblique projectile is a parabola.

13. Define potential energy and kinetic energy with examples, and derive potential energy = mgh.

14. Derive equations for displacement and velocity of a body in simple harmonic motion.

15. State the gas laws and derive PV=RT.

16. Write the causes, effects and controlling methods of noise pollution.

17. Define surface tension and explain it with reference to molecular theory.

18. State and explain Kirchhoff's laws of electricity.

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