23010

C23-AEI-BM-CH-CHST-CHOT-CHPC-CHPP-EE-EEVT-TT–103

23010

BOARD DIPLOMA EXAMINATION, (C-23)

MARCH/APRIL—2025

FIRST YEAR (COMMON) EXAMINATION

ENGINEERING PHYSICS

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

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

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

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

1. Write any three rules for writing SI Units.

2. Define scalar and vector quantities with examples.

3. Derive relationship between K.E and momentum.

4. Convert 101 °F into Kelvin.

5. Define reverberation and reverberation time.

6. Calculate the velocity of sound in air, if an observer at a distance of 800 m from a building hears an echo after 5 seconds.

7. Start and explain Ohm's law.

8. Define magnetic field magnetic lines of force.

9. List any three applications of photoelectric effect.

10. Explain the Total Internal Reflection.

www.manaresults.co.in

PART—B

10×5=50

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

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

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

11. *(a)* State and explain triangle law of addition of vectors. 2+4

(b) A body is thrown with some velocity at an angle of 60° with the horizontal. If its horizontal component is 50 ms^{-1}, what is the actual velocity? 4

12. *(a)* Write a brief note on Polar Satellites. 5

(b) Define orbital velocity. Calculate the orbital velocity of a body around the earth. (Assume that g = 9·8m/s^2 and the radius of earth is about 6·4 × 10^6m). 2+3

13. *(a)* State the explain Newton's universal law of gravitation. 6

(b) Mention any four applications of artificial satellites. 4

14. *(a)* Define work done and energy. Mention their SI units. 4+2

(b) A body of mass 2 kg is moving with kinetic energy of 16 joule. Find its momentem. 4

15. *(a)* State Boyle's law, Charle's law and Gay-Lussac's law. 2+2+2

(b) Calculate the value of 'R' for 1 gram mole of gas. 4

16. *(a)* Distinguish between musical sound and noise. 4

(b) Explain methods of minimizing noise pollution. 6

www.manaresults.co.in

17. *(a)* Derive an expression for balancing condition of wheatstone's bridge. 7

(b) If the distance between two magnetic poles is increased to four times, then what happens to the force between them? 3

18. *(a)* Explain the principle and working of optical fiber. 6

(b) Define Intrinsic and extrinsic semiconductors. 4

★★★

www.manaresults.co.in