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C09–CHPP–103/C09–EE–**103**

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BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2014

DEEE—FIRST YEAR 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. Check correctness of equation $v^2 \quad u^2 \quad 2as$.

2. State and explain polygon law of vectors.

3. Derive formula for maximum range in case of oblique projection.

4. State laws of static friction.

5. Define SHM and give two examples.

6. State gas laws.

7. Distinguish between music and noise.

8. Define surface tension and give two examples.

9. State Kirchhoff 1st law and 2nd law.

10. State three laws of photo electric effect.

PART—B

10×5=50

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

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

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

11. *(a)* State parallelogram law of vector addition and find expression for resultant vector.

(b) Find the area of parallelogram formed by two vectors

$A \quad 2i \quad 3j \quad k$ and $B \quad i \quad 2j \quad 2k$ as two adjacent sides.

12. *(a)* Show that oblique projection is parabola.

(b) Derive formulas for maximum height and time of ascent in case of vertical projection.

13. *(a)* Define the terms work, power and energy.

(b) Define PE and KE and give two examples. (one for each).

(c) Show that KE $\frac{1}{2}mv^2$.

14. *(a)* Explain experimental method of determination of acceleration due to gravity g using simple pendulum.

(b) Define seconds pendulum.

15. *(a)* State first and second law of thermodynamics.

(b) Show that $C_P \quad C_V \quad R$.

16. Define noise pollution. Explain four effects of noise pollution. Write four methods to minimize noise pollution.

17. *(a)* Define three types of modulus of elasticity.

(b) Define angle of contact and capillarity.

18. *(a)* Derive formula for couple acting on bar magnet placed inside uniform magnetic field.

(b) Derive magnetic induction field strength at a point on axial line.

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