

Code No. : 20665 E Sub. Code : EFPH 11

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2023.

First Semester

Physics

Foundation Course — INTRODUCTORY PHYSICS

(For those who joined in July 2023 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. What is the unit of sound?
(a) Decimal (b) Decibel
(c) Second (d) None of the above
2. What is the unit of energy?
(a) Ohm (b) Newton
(c) Electron volt (d) Farad

3. What force causes objects to fall towards the Earth's center?
(a) Gravitational force
(b) Magnetic force
(c) Tension force
(d) Electrostatic force
4. The constant tug on the moon as it moves around the earth is due to _____.
(a) The centrifugal force
(b) The centripetal force
(c) Neither (a) nor (b)
(d) Both (a) and (b)
5. What type of collision explains the case when two car collides head on and bounce off on one another?
(a) Elastic collision (b) Inelastic collision
(c) Oblique collision (d) None of the above
6. Through solar cells, solar energy is converted into _____ energy.
(a) wind (b) nuclear
(c) electrical (d) light

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7. SI unit of the surface tension _____.
(a) N/m (b) m²/s
(c) kg/s (d) pa
8. The path of a projectile is
(a) parabola (b) hyperbola
(c) circular (d) straight line
9. The friction in a flowing fluid is called _____.
(a) Density (b) Surface tension
(c) Viscosity (d) Capillary action
10. Which of the following is NOT an insulator?
(a) Glass (b) Mica
(c) Wood (d) Gold

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain about the Addition and the Subtraction of Vectors with examples.
Or
(b) Given the examples of Physical quantities of scalar and vectors.

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12. (a) What is friction and explain how does it work?
Or
(b) Distinguish between cohesive and adhesive forces.
13. (a) Describe the Conservation laws of momentum.
Or
(b) Explain the different types of energy.
14. (a) Write note on simple harmonic motion.
Or
(b) Compare the light and sound wave.
15. (a) Write a short notes on surface tension and diffusion.

Or

- (b) Write a note on the following :
(i) Angle of contact
(ii) Lubricants
(iii) Capillary flow.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) Define Scalars and Vectors. Give to example of each.

Or

- (b) What is the difference between resultant and resolution vectors?

17. (a) Define centripetal and centrifugal force with examples.

Or

- (b) Write a note on the following :

- (i) Gravitational force
- (ii) Electrostatic force
- (iii) Nuclear force
- (iv) Mechanical force.

18. (a) What are collisions? Explain the possible types of collisions.

Or

- (b) Write a short notes on angular momentum.

19. (a) Explain :

- (i) Linear motion
- (ii) Projectile motion
- (iii) Circular motion
- (iv) Angular motion

Or

- (b) Explain about the free, forced, damped oscillation.

20. (a) What is Viscosity? Discuss the significance of viscosity.

Or

- (b) Discuss about the thermal and electric materials.
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