KAMARAJ COLLEGE (Autonomous)

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)

(4 Pages) **Reg. No:……**

Question Code: 26E01206 **Course Code: 24UFPH11/25UFPH11**

UG Degree - End Semester Examinations, April 2026

First Semester

B.Sc., PHYSICS

Introductory Physics

(For those who joined in July 2024 and June 2025 onwards)

Time : 3Hours **Maximum : 75 Marks**

PART – A (10 × 1 = 10 Marks)

Answer ALL Questions

Choose the correct answer :

CO:1 K:1 1. What is the value of charge of an electron?

(a) 1.602×10^{-19} C (b) 1.602×10^{-20} C

(c) 1.602×10^{-9} C (d) 1.602×10^{-10} C

CO:1 K:1 2. Which of the following is a scalar quantity?

(a) Displacement (b) Mass

(c) Velocity (d) Force

CO:2 K:2 3. _____is the attractive force that holds particles or molecules of the same substance together.

(a) Centrifugal force (b) Centripetal force

(c) Friction force (d) Cohesive force

CO:2 K:3 4. As the distance between two objects increases, what happens to the strength of gravitational force?

(a) Increases (b) Remains constant

(c) Decreases (d) Increases and then decreases

CO:3 K:3 5. What energy is associated with a book kept in the top of the table?

(a) Potential energy (b) Kinetic energy

(c) Sonic energy (d) Thermal energy

CO:3 K:3 6. Which of the following statement is correct?

(a) Energy can be created and destroyed
(b) Energy cannot be created but destroyed
(c) Energy can be created but cannot be destroyed
(d) Energy can neither be created nor destroyed

CO:4 K:1 7. The path traced by projectile is known as _____

(a) Orbit
(b) Track
(c) Trajectory
(d) Circle

CO:4 K:3 8. A mass on a spring undergoes simple harmonic motion. The maximum displacement from the equilibrium is _____

(a) Amplitude
(b) Period
(c) Frequency
(d) Wavelength

CO:5 K:4 9. In Doppler effect, when the source of sound moves towards the observer, the frequency will _____

(a) Increase
(b) Decrease
(c) Remains constant
(d) Become zero

CO:5 K:4 10. Which of the following is a semiconductor and is used in the manufacture of integrated chips?

(a) Gold
(b) Copper
(c) Silicon
(d) Tungsten

PART – B (5 X 5 = 25 Marks)

Answer ALL Questions choosing either (a) or (b).
Answer should not exceed 250 words.

CO:1 K:3 11. (a) Classify and explain scalar and vector quantities with suitable examples.

(OR)

(b) Illustrate vector addition with a suitable example and diagram.

CO:2 K:3 12. (a) Interpret the properties of magnetic force.

(OR)

(b) Examine the properties of gravitational force.

CO:3 13. (a) Examine the following types of energy with suitable examples (i) chemical energy (ii) heat energy

K:3

(OR)

(b) Apply law of conservation of momentum and show that momentum is a conserved quantity.

CO:4 14. (a) Compare stream line motion and turbulent motion.

K:4

(OR)

(b) Analyse the following types of motion (i) linear motion ii) projectile motion with suitable examples

CO:5 15. (a) Examine Sound intensity level

K:4

(OR)

(b) Analyse the Properties of semiconductors

PART – C (5 X 8 = 40 Marks)

Answer ALL Questions choosing either (a) or (b).

Answer should not exceed 500 words.

CO:1 16. (a) Solve and find the dimensions of the following physical quantities.

K:3

(i)Velocity (ii) Force (iii) Momentum (iv) Work

(OR)

(b) Interpret resolution of a vector. Also deduce the magnitude of resultant of two vectors by analytical method.

CO:2 17. (a) Analyse the nature of nuclear forces. Also give its properties.

K:4

(OR)

(b) Categorise the various mechanical forces and examine any two of them.

CO:3 18. (a) Examine Conservation of Energy with suitable examples.

K:4

(OR)

(b) Investigate Conservation law of angular momentum.

CO:4 19. (a) Compare light waves and sound waves.

K:5

(OR)

(b) Analyse simple Harmonic motion with suitable example.

CO:5 20. (a) Discuss the characteristics of conductor and insulator. Also give suitable examples of conductors and insulators used in your day-to-day life.

K:5

(OR)

(b) With the aid of Doppler effect, Discuss the change in frequency due to relative motion between source and observer. Justify your observation with suitable examples.