

Tsi11P

Tenkasi District Common Examination
Common Second Mid Term Test - November 2022



- - - - -
Standard - 11

PHYSICS

Time Allowed: 1.30 Hours

Maximum Marks: 35

SECTION A

Choose the correct answer and write it:

10×1=10

1. If the masses of the Earth and the Sun were suddenly doubled, the gravitational force between them would
 - a) Does not change
 - b) Increases by 2 times
 - c) Increase by 4 times
 - d) Decrease by 2 times
2. If the mass and radius of the earth are doubled, the acceleration of gravity is g
 - a) Does not change
 - b) $g/2$
 - c) $2g$
 - d) $4g$
3. Kinetic energy of a satellite orbiting the earth
 - a) Energy equal to
 - b) Level less than energy
 - c) More than potential energy
 - d) Vortex
4. Strain in a wire when it is stretched to twice its initial length
 - a) 1
 - b) 2
 - c) 3
 - d) 4
5. Which of the following is not a scalar?
 - a) Viscosity
 - b) Surface tension
 - c) Pressure
 - d) Dampness
6. Viscosity of liquid and gas respectively as temperature rises
 - a) Increases and increases
 - b) increases and decreases
 - c) Decrease and increase
 - d) Decrease and decrease
7. According to Charles' law obesity and Graph for temperature
 - a) An ellipse
 - b) A circle
 - c) A straight line
 - d) A parabola
8. Food is cooked inside the covered pan. After a while the steam pushes the lid of the pan slightly. Considering steam as a thermodynamic system, which statement is appropriate for this phenomenon?
 - a) $Q > 0, W > 0,$
 - b) $Q < 0, W > 0,$
 - c) $Q > 0, W < 0,$
 - d) $Q < 0, W < 0,$
9. Which part of the earth has no gravity?
 - a) North and South Pole
 - b) Equator
 - c) On the surface
 - d) Center of the earth
10. The mass of Earth is
 - a) 6×10^{23} kg
 - b) 6×10^{23} kg
 - c) 6×10^{24} kg
 - d) 6×10^{24} kg

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SECTION B**Answer any three question compulsorily answer question number 15: $3 \times 2 = 6$**

11. What is the Earth's escape velocity?
12. What is the difference between gravitational potential energy and gravitational self-energy?
13. Steel or rubber, which is more resilient? Why?
14. Acceleration - Definition.
15. Calculate the energy of (i) Moon orbiting Earth (ii) Earth orbiting Sun.

SECTION C**Answer any three question compulsorily answer question number 20: $3 \times 3 = 9$**

16. Lunar eclipse and solar eclipse do not happen every month. Why?
17. What is Reynolds number? What is its significance?
18. What factors affect the surface tension of a liquid?
19. State the Stefan - Boltzmann rule
20. A solid sphere has a radius of 1.5 cm and a mass of 0.038 kg. Calculate the relative mass of the solid planet.

SECTION D**Answer all the questions:** **$2 \times 5 = 10$**

21. Prove that the gravitational potential energy of an object at a point at 'h' height near the Earth's surface is $U = mgh$.

(OR)

State and prove Pascal's law in fluids.

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22. Explain in detail the different mechanisms of heat transfer.

(OR)

Give the equation for the orbital period of a satellite traversing the Earth.
