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37	A	B	C	D	E
38	A	B	C	D	E
39	A	B	C	D	E

PRACTICE QUESTIONS

College Board AP - Turkey

APPH1

AP Physics 1: Algebra-Based

Uploaded by tex_erin

EDITION

Original Demo

QUESTIONS

6

ISSUED

October 14, 2026

Before you begin

What this is

6 practice questions for College Board AP - Turkey **APPH1** , each with its answer key and an explanation. Answer a question before you read its key - the explanation is worth more once you have committed.

If something looks wrong

Send us three things and we will check it:

- the exam code, **APPH1**
- the question number
- the email address on your order

Write to **support@mometrix.net**. We reply within one business day.

Licence

Free Mometrix practice demo. The complete question bank is available through a paid account.

QUESTION 1

MULTIPLE CHOICE

A ball is thrown straight up with initial speed v_0 . Neglecting air resistance, which of the following quantities are equal at the ball's maximum height and at the height from which it was thrown? (Choose two.)

- ☒ **A** Total mechanical energy
- ☐ **B** Kinetic energy
- ☒ **C** Gravitational potential energy
- ☐ **D** Speed

ANSWER A - C

WHY With negligible air resistance, total mechanical energy is conserved at all points during the flight (statement A). At maximum height, the kinetic energy is zero and all the energy is gravitational potential energy, which equals the initial total mechanical energy (statement C). At maximum height, both kinetic energy and speed are zero, which is less than their initial values.

QUESTION 2

SINGLE CHOICE

A mass-spring system oscillates with period T . If the mass is replaced by one four times as large and the spring constant is unchanged, the new period is:

- ☐ **A** $T/2$
- ☐ **B** T
- ☒ **C** $2T$
- ☐ **D** $4T$

ANSWER C

WHY Period of a mass-spring system is $T = 2\pi\sqrt{m/k}$. Replacing m with $4m$ gives $T' = 2\pi\sqrt{4m/k} = 2 \cdot 2\pi\sqrt{m/k} = 2T$.

QUESTION 3

SINGLE CHOICE

A 3.0 kg object is lifted vertically at constant speed from the ground to a height of 6.0 m. The object is then held at rest. What is the net work done on the object during this entire process?

- ☒ A 0 J
- ☐ B 60 J
- ☐ C 120 J
- ☐ D 180 J

ANSWER A

WHY Because the object starts and ends at rest, with no change in kinetic energy, the work-energy theorem requires the net work to be zero. The lifting force does positive work, gravity does negative work of equal magnitude, and during the hold both forces are zero with no displacement.

QUESTION 4

SINGLE CHOICE

Two point charges, $q_1 = +3.0 \mu\text{C}$ and $q_2 = -4.0 \mu\text{C}$, are separated by 0.30 m. What is the magnitude of the electrostatic force between them? ($k = 8.99 \times 10^9 \text{ N}\cdot\text{m}^2/\text{C}^2$)

- ☐ A 0.60 N
- ☒ B 1.2 N
- ☐ C 3.0 N
- ☐ D 12 N

ANSWER B

WHY $F = k|q_1q_2|/r^2 = (8.99 \times 10^9)(3.0 \times 10^{-6})(4.0 \times 10^{-6})/(0.30)^2 = (8.99 \times 10^9)(12 \times 10^{-12})/(0.09) \approx 0.108/0.09 \approx 1.2 \text{ N}.$

QUESTION 5

SINGLE CHOICE

An ideal gas in a sealed rigid container has 200 J of heat added to it. Which of the following correctly describes the change in internal energy of the gas?

- ☒ **A** The internal energy increases by 200 J because no work is done by the gas.
- ☐ **B** The internal energy decreases by 200 J because work is done on the surroundings.
- ☐ **C** The internal energy increases by 100 J because half the heat is lost as work.
- ☐ **D** The internal energy does not change because the volume is constant.

ANSWER A

WHY The first law of thermodynamics states $\Delta U = Q - W$. For a rigid container the volume does not change, so the gas does no work ($W = 0$). Therefore $\Delta U = Q = +200 \text{ J}$; the internal energy increases by 200 J.

QUESTION 6

SINGLE CHOICE

Two identical carts, each of mass 2.0 kg, move directly toward each other on a frictionless surface. Cart A moves to the right at 3.0 m/s and Cart B moves to the left at 1.0 m/s. They collide and stick together. What is the magnitude of the velocity of the combined carts after the collision?

- ☒ **A** 1.0 m/s
- ☐ **B** 1.5 m/s
- ☐ **C** 2.0 m/s
- ☐ **D** 4.0 m/s

ANSWER A

WHY Take rightward as positive. Initial momentum: $p_i = (2.0)(3.0) + (2.0)(-1.0) = 6.0 - 2.0 = 4.0 \text{ kg}\cdot\text{m/s}$. After the perfectly inelastic collision, total mass is 4.0 kg, so $v_f = 4.0/4.0 = 1.0 \text{ m/s}$ to the right.