UTAH PHYSICS · UNIT 1 · 10 QUESTIONS

Kinematics and Dynamics — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The coefficient of static friction is 0.5 and the normal force is 60 N. The maximum static friction force is**

- A 30 N
- B 110 N
- C 120 N
- D 0.0083 N

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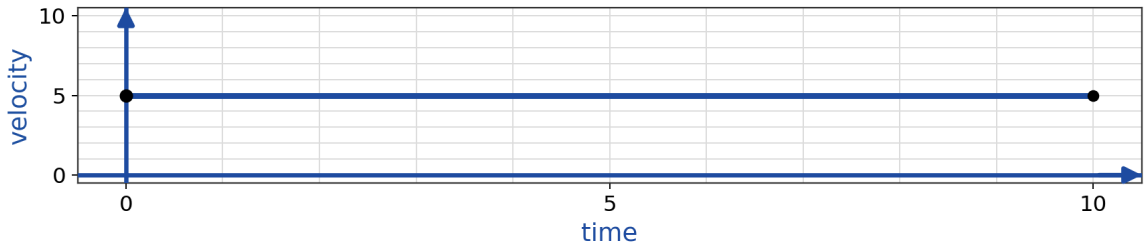
2 **A velocity time graph shows a horizontal line above zero. The motion is**



- **A** at rest
- **B** constant velocity
- **C** constant acceleration
- **D** decreasing velocity

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3 **An object in uniform circular motion has a centripetal acceleration directed**

- **A** along its velocity
- **B** opposite its velocity
- **C** toward the center of the circle
- **D** away from the center

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4 **An object moves in a circle at speed 8 m/s with radius 16 m. Its centripetal acceleration is**

- **A** $2\ \frac{m}{s^2}$
- **B** $128\ \frac{m}{s^2}$
- **C** $0.5\ \frac{m}{s^2}$
- **D** $4\ \frac{m}{s^2}$

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5 **A projectile is launched horizontally. Its horizontal acceleration, ignoring air resistance, is**

- **A** $10\ \frac{m}{s^2}$
- **B** $0\ \frac{m}{s^2}$
- **C** $9.8\ \frac{m}{s^2}$ downward
- **D** equal to its launch speed

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6 **A 3 kg object is pulled with a net force of 18 N. Its acceleration, in meters per second squared, is _____**

ANSWER _____

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7 **An object travels 90 m in 15 s. Its average speed, in meters per second, is _____**

ANSWER _____

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8 **If the net force on an object doubles while its mass stays the same, its acceleration**

A halves

B stays the same

C doubles

D becomes zero

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9 **Two forces of 25 N and 15 N act in opposite directions. The size of the net force, in newtons, is _____**

ANSWER _____

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10 **An astronaut has mass 70 kg on Earth. In deep space, far from gravity, her mass is**

A 0 kg

B 70 kg

C 700 kg

D 7 kg

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ANSWER KEY

1. A
2. B
3. C
4. D
5. B
6. 6
7. 6
8. C
9. 10
10. B

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