NOVA SCOTIA PHYSICS 12 · UNIT B

# Static Equilibrium, Gravitation and Collisions — Practice Test

**Nova Scotia Physics 12 • 25 questions**

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 **A force of 20 newtons acts at a distance of 0.5 metres from the pivot of a seesaw, perpendicular to the seesaw. The torque, in newton metres, is**



ANSWER

Understand It with Pulse | Flag a mistake

2 **A force of 10 newtons acts at a distance of 2 metres from a pivot, perpendicular to the lever. The torque, in newton metres, is**

ANSWER

Understand It with Pulse | Flag a mistake

3 **A force of 50 newtons acts at a distance of 0.4 metres from a pivot, perpendicular to the lever. The torque, in newton metres, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

4 **Two masses attract with a force of 100 newtons. If the distance between them doubles, the new force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

5 **Two masses attract with a force of 200 newtons. If the distance between them doubles, the new force, in newtons, is**



ANSWER _____

Understand It with Pulse | Flag a mistake

6 **Two masses attract with a force of 80 newtons. If the distance between them doubles, the new force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

7 **An object of mass 5 kilograms moves at 4 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

8 **An object of mass 10 kilograms moves at 3 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

9 **An object of mass 2 kilograms moves at 15 metres per second. Its momentum, in kilogram metres per second, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

10 **A 4 kilogram object moving at 3 metres per second collides with a stationary 2 kilogram object and they stick together. Their common speed, in metres per second, is**



ANSWER

Understand It with Pulse | Flag a mistake

11 **A 6 kilogram object moving at 4 metres per second collides with a stationary 2 kilogram object and they stick together. Their common speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

12 **A 3 kilogram object moving at 6 metres per second collides with a stationary 3 kilogram object and they stick together. Their common speed, in metres per second, is**

ANSWER

Understand It with Pulse | Flag a mistake

13 **A planet surface gravity is 10 metres per second squared. If the planet mass doubles with the same radius, the new surface gravity is**

ANSWER

Understand It with Pulse | Flag a mistake

14 **A planet surface gravity is 5 metres per second squared. If the planet mass doubles with the same radius, the new surface gravity is**

ANSWER

Understand It with Pulse | Flag a mistake

15 **A planet surface gravity is 9.8 metres per second squared. If the planet mass doubles with the same radius, the new surface gravity is**



ANSWER

Understand It with Pulse | Flag a mistake

16 **A beam weighs 100 newtons and is supported equally at two ends. Each support force, in newtons, is**



ANSWER _____

Understand It with Pulse | Flag a mistake

17 **A beam weighs 200 newtons and is supported equally at two ends. Each support force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

18 **A beam weighs 60 newtons and is supported equally at two ends. Each support force, in newtons, is**

ANSWER _____

Understand It with Pulse | Flag a mistake

19 **Torque is the product of force and**

A perpendicular distance from the pivot

B mass

C speed

D time

Understand It with Pulse | Flag a mistake

20 **An object in static equilibrium has net force and net torque equal to**

A maximum

B zero

C its weight

D its mass

Understand It with Pulse | Flag a mistake

21 **The centre of gravity of a uniform object is at its**

A heaviest end

B pivot only

C geometric centre

D top

Understand It with Pulse | Flag a mistake

22 **Gravitational force between two masses decreases when the distance**

A decreases

B stays the same

C doubles mass only

D increases

Understand It with Pulse | Flag a mistake

**23** **In an elastic collision both momentum and**



A kinetic energy are conserved

B kinetic energy is lost

C mass is lost

D speed is unchanged

Understand It with Pulse | Flag a mistake

**24** **In an inelastic collision momentum is conserved but kinetic energy is**

- A fully conserved
- B not fully conserved
- C doubled
- D zero

Understand It with Pulse | Flag a mistake

**25** **Kepler first law states that planetary orbits are**

- A circles only
- B parabolas
- C ellipses with the Sun at one focus
- D straight lines

Understand It with Pulse | Flag a mistake

# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | 10 | **10.** | 2 | **19.** | A |
| **2.** | 20 | **11.** | 3 | **20.** | B |
| **3.** | 20 | **12.** | 3 | **21.** | C |
| **4.** | 25 | **13.** | 20 | **22.** | D |
| **5.** | 50 | **14.** | 10 | **23.** | A |
| **6.** | 20 | **15.** | 19.6 | **24.** | B |
| **7.** | 20 | **16.** | 50 | **25.** | C |
| **8.** | 30 | **17.** | 100 | | |
| **9.** | 30 | **18.** | 30 | | |

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