Physics – Quiz 4 (10 marks)

مدارس البكالوريا
BACCALAUREATE SCHOOLS

Student's Name: _____

Grade 11th

27th November, 2025

Q1) Define the following:

Rigid Body _____

Momentum _____

Q2) Complete the following:

_____ is what determining if the collision is _____ collision or _____ collision.

In collisions _____ is always conserved, velocity is _____.

Linear momentum is conserved when there is no _____acting on the system.

Q3) A 1.2 kg cart moving at 5.0 m/s to the right collides elastically with a 3.0 kg cart initially at rest on a frictionless track.

(a) Find the final velocities of both carts.

(b) State whether the lighter cart reverses direction or continues forward after the collision.

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Q4) A 2.0 kg glider moves at 8.0 m/s to the right and collides head-on with a 4.0 kg glider moving 3.0 m/s to the left. After the collision, the 2.0 kg glider is observed moving to the left at 2.0 m/s.

(a) Determine the final velocity of the 4.0 kg glider.

(b) Using physics reasoning — not equations — explain whether the result makes physical sense in terms of mass and momentum distribution.

(c) State whether kinetic energy increased, decreased, or stayed constant, and state what is the collision's type?