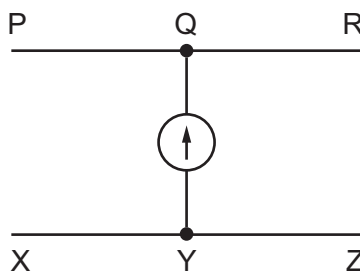


- 5 PQR and XYZ are wires in a circuit. A galvanometer connects Q and Y as a null indicator.



When the galvanometer reads zero, which statement is correct?

- A The potential difference between Q and Y is infinite.
  - B The potential difference between Q and Y is zero.
  - C The resistance between Q and Y is infinite.
  - D The resistance between Q and Y is zero.
- 6 An object has an initial velocity  $u$  and an acceleration  $a$ . The object moves in a straight line through a displacement  $s$  and has final velocity  $v$ .

The above quantities are related by the equation shown.

$$v^2 = u^2 + 2as$$

Which condition **must** be satisfied in order for this equation to apply to the motion of the object?

- A The direction of  $a$  is constant and the direction of  $a$  is the same as the direction of  $s$ .
  - B The direction of  $a$  is constant and the direction of  $a$  is the same as the direction of  $u$ .
  - C The magnitude of  $a$  is constant and the direction of  $a$  is constant.
  - D The magnitude of  $a$  is constant and the direction of  $a$  is the same as the direction of  $v$ .
- 7 A car is travelling at constant velocity. Its brakes are then applied, causing uniform deceleration.

Which graph shows the variation with distance  $s$  of the velocity  $v$  of the car?

