

Answer on Question #47274 – Physics - Mechanics | Kinematics | Dynamics

A ball is travelling with uniform translatory motion. This means that

- (a) it is at rest.
- (b) the path can be a straight line or circular and the ball travels with uniform speed.
- (c) all parts of the ball have the same velocity (magnitude and direction) and the velocity is constant.
- (d) the centre of the ball moves with constant velocity and the ball spins about its centre uniformly.

Solution:

Uniform motion describes an object that is moving in a specific direction at a constant non-zero speed, thus answer (a) is incorrect.

The path traversed by the ball in executing translatory motion may be either linear, circular, curve or any irregular shape, thus answer (b) is incorrect.

The motion of an ball is said to be translatory if the position of the object is changing with respect to a fixed point or object. All the particles of a body executing translatory motion move in the same direction traversing parallel paths. Hence, correct answer is (c): all parts of the ball have the same velocity (magnitude and direction) (**translatory motion**) and the velocity is constant (**uniform motion**).

Answer: (d) the centre of the ball moves with constant velocity and the ball spins about its centre uniformly.