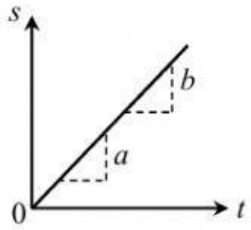
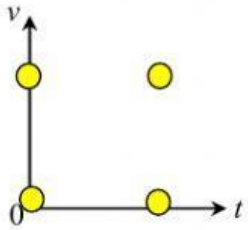
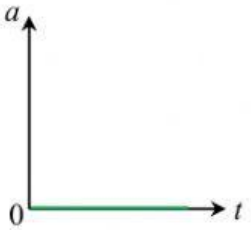
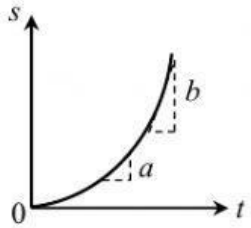
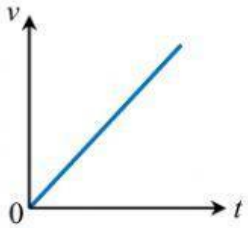
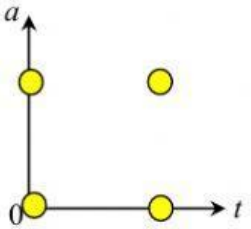
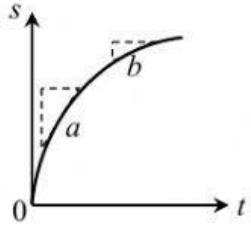
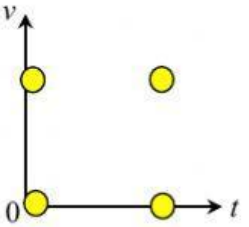
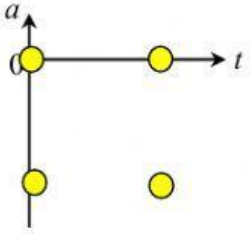
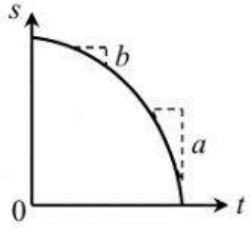
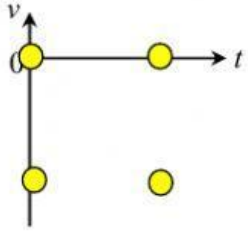
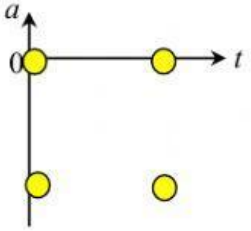
NAME: .....

CLASS: .....

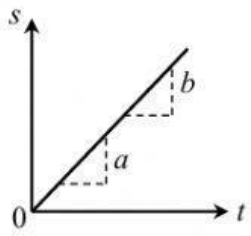
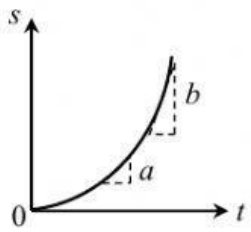
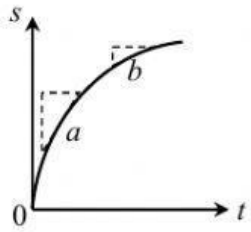
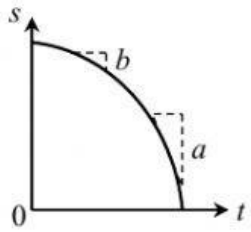
CHAPTER 2: KINEMATICS OF LINEAR MOTION

1. Connect the dots to sketch the graph of *v*-*t* and *a*-*t* for an object in linear motion.

No.	Graph of *s* - *t*	Graph of *v* - *t*	Graph of *a* - *t*
(a)			
(b)			
(c)			
(d)			

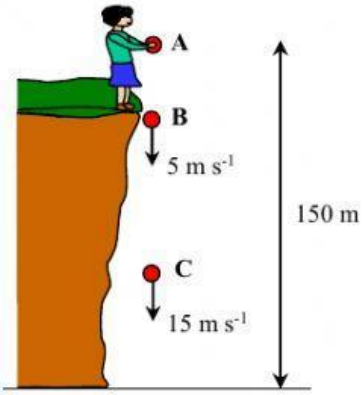
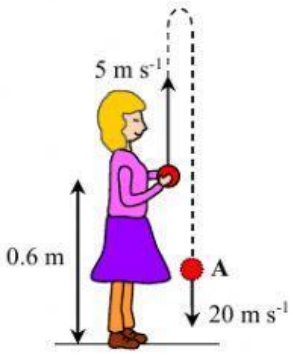
2. **Linear Motion Graph Analysis**

Choose a **suitable word** to complete the sentences in the table below.

No.	Graph of s - t	Graph Analysis
(a)		Gradient of s - t graph represents velocity. Gradient of s - t graph is **constant / increasing / decreasing** from a to b. Hence, the velocity is **constant / increasing / decreasing** from a to b. The value of acceleration is _____.
(b)		Gradient of s - t graph is **positive / negative** and the value is **constant / increasing / decreasing** from a to b. Hence, the velocity is **constant / increasing / decreasing**. The object is **accelerating / decelerating**.
(c)		Gradient of s - t graph is **positive / negative** and the value is **constant / increasing / decreasing** from a to b. Hence, the velocity is **constant / increasing / decreasing**. The object is **accelerating / decelerating**.
(d)		Gradient of s - t graph is **positive / negative** and the value is **constant / increasing / decreasing** from a to b. Hence, the velocity is **constant / increasing / decreasing**. The object is **accelerating / decelerating**.

3. **Free fall motion** is a vertical motion of a body under the influence of _____ force only.

4. Choose the correct answer from the dropdown

Cases	Analysis
Case 1  	An object is **released** from point A. u =
	Displacement of the object from initial position to the ground. s = –150 m
	Velocity of the object when it reaches **point B**. v_B =
	Velocity of the object when it reaches **point C**. v_C = –15 m s^{-1}
Case 2  	Object is **thrown** vertically **upward**. u =
	Displacement of the object from initial position to the ground. s =
	Velocity of the object when it reaches the **maximum height**. v =
	Velocity of the object when at **point A**. v_A =

5. A marble is **thrown** vertically **downward** at 5 m s^{-1} from a height of 15 m. Calculate the

(a) speed of the object just before it hits the ground.

$$v_y^2 = u_y^2 - 2gs_y$$

$$v_y^2 = (\quad) - 2g(\quad)$$

$$v_y^2 = \_\_\_\_\_ m^2\ s^{-2}$$

$$v_y = \pm\_\_\_\_\_ m\ s^{-1}$$

$$v_y = \quad \_\_\_\_\_ m\ s^{-1}$$

(b) time taken by the object to reach the ground.

$$s_y = u_y t - \frac{1}{2} g t^2$$

$$\_\_ = \_\_\_ t - \frac{1}{2}(\_\_\_\_) t^2$$

$$\_\_ = \_\_\_ t - (\_\_\_\_) t^2$$

$$\_\_ t^2 + \_\_\_ t - \_\_\_\_ = 0$$

$$t = \_\_\_$$