

“重在过程、赢在高一”

浙江省名校联合体 2025 学年第一学期 12 月份学情诊断

高一年级物理参考答案

一、选择题部分

1	2	3	4	5	6	7	8	9	10	11	12
A	B	D	C	A	D	B	C	B	C	D	C

13	14	15
BC	AC	ABD

16. (1) D (1分)
(2) AC (2分)
(3) 6.58~6.62 (1分) 0.38~0.42 (2分)
(4) BC (2分)

17. (1) A (1分)
(2) C (1分)
(3) 1.5 (2分) -11.25 (2分)

18. 解:

$$(1) h = \frac{1}{2}gt^2 \quad t = 1s \quad (1分)$$

$$s = \frac{1}{2}at^2 \quad (1分)$$

$$a = 2m/s^2 \quad (1分)$$

$$(2) F - \mu mg = ma \quad (2分)$$

$$F = 5N \quad (1分)$$

19. 解:

$$(1) h = \frac{v_1^2}{2g} \quad (1分)$$

$$h = 20m \quad (1分)$$

$$(2) (m_1 + m_2)g = kv_2 \quad (1分)$$

$$k = 220kg/s \quad (1分)$$

$$kv_1 - (m_1 + m_2)g = (m_1 + m_2)a \quad (2分)$$

$$a = 30m/s^2 \quad (1分)$$

$$(3) 8F \cos \theta - m_1g = m_1a \quad (1分)$$

$$F = 375N \quad (1分)$$

20. 解:

$$(1) \mu m_2g = m_2a_1, \quad a_1 = 1m/s^2 \quad (1分)$$

$$v_1^2 - v_0^2 = 2(-a_1)L_1, \quad v_1 = 1m/s \quad (1分)$$

$$h = \frac{1}{2}gt_1^2, \quad t_1 = 0.4s$$

$$s = v_1t_1 = 0.4m \quad (1分)$$

$$(2) v_3 = v_0 + (-a_1)t_3 = a_2 t_3 \quad (1 \text{分})$$

$$\text{得: } t_3 = 2s, \quad v_3 = 1m/s \quad (1 \text{分})$$

$$x = L_1 - \Delta x = L_1 - \left(\frac{v_0 + v_3}{2} t_2 - \frac{0 + v_3}{2} t_2 \right) = 1m \quad (2 \text{分})$$

$$(3) a_3 = a_1 = 1m/s^2 \quad (1 \text{分})$$

$$k(L_0 - L_2) = (m_1 + m_2)a_3 \quad (1 \text{分})$$

$$\text{得: } k = 25N/m \quad (1 \text{分})$$

21. 解:

$$(1) a_1 = \mu_1 g = 8m/s^2, \quad (1 \text{分}) \quad t_1 = \frac{v_0}{a_1} = 0.5s$$

$$x_1 = \frac{v_0}{2} t_1 = 1m < L_1 = 4m, \quad (1 \text{分}) \quad \text{所以 } v_B = v_0 = 4m/s \quad (1 \text{分})$$

$$(2) t_2 = \frac{L_1 - x_1}{v_0} = 0.75s$$

$$a_2 = g \sin 37^\circ + \mu_2 g \cos 37^\circ = 10m/s^2$$

$$v_P^2 - v_B^2 = 2(-a_2)L_3, \quad v_P = 3m/s \quad (1 \text{分})$$

$$t_3 = \frac{v_P - v_B}{-a_2} = 0.1s$$

$$\text{得: } t_{P1} = t_1 + t_2 + t_3 = 1.35s \quad (1 \text{分})$$

$$L_{max} = \frac{v_B^2}{2a_2} = 0.8m, \quad t_4 = \frac{v_B}{a_2} = 0.4s$$

$$a_3 = g \sin 37^\circ - \mu_2 g \cos 37^\circ = 2m/s^2$$

$$L_{max} - L_3 = \frac{1}{2} a_3 t_5^2, \quad t_5 = \frac{3\sqrt{5}}{10}s \quad (1 \text{分})$$

$$\text{得: } t_{P2} = t_1 + t_2 + t_4 + t_5 = \left(1.65 + \frac{3\sqrt{5}}{10} \right) s \quad (1 \text{分})$$

$$v_{B2}^2 = 2a_3 L_{max}$$

物块滑上传送带后, 将原速率返回

$$v_{B2}^2 = 2a_2 L_4$$

$$\text{得: } L_4 = 0.16m < L_3 = 0.35m, \text{ 之后物块将不能到达 } P \text{ 点} \quad (1 \text{分})$$

$$(3) v_B^2 = 2 a_1 L_1, \quad v_B = 8m/s < 10m/s$$

$$v_C^2 - v_B^2 = 2(-a_2)L_2, \quad v_C = 5m/s \quad (1 \text{分})$$

$$v_x = v_C \cos 37^\circ = 4m/s, \quad v_y = v_C \sin 37^\circ = 3m/s$$

当竖直分速度变为向下 $v_y = 4m/s$ 时, 方向恰好沿接收管中心轴线。

$$t_1 = \frac{\Delta v_{y1}}{g} = 0.7s, \quad x_{F1} = v_x t_1 = 2.8m, \quad (1 \text{分})$$

$$\text{第一次落地, } v_{y1}^2 - v_y^2 = 2gh, \quad v_{y1} = 8m/s$$

$$\text{第一次反弹, } v_{y2} = 0.7 v_{y1} = 5.6m/s \quad (1 \text{分})$$

$$t_2 = \Delta t_1 + \Delta t_2 = (1.1 + 0.96)s = 2.06s$$

$$x_{F2} = v_x t_2 = 8.24m \quad (1 \text{分})$$

$$\text{第二次反弹, } v_{y3} = 0.7 v_{y2} = 3.92m/s < 4m/s, \text{ 之后将不能再进入接收管。} \quad (1 \text{分})$$