

Multiple Choice Answers

Q7: A

Multiple Choice Answers

Q6: C

Multiple Choice Answers

Q8: B

2(a)	(–) 3.5 kgm / s
	$(\Delta p =) m(\Delta u)$ OR $m\{v - u\}$ OR $0.14 \times \{25 - 0\}$
2(b)	360 N
	0.0097 (s) OR 9.7×10^{-3} (s) OR 3.6×10^n
	$(F =) (\Delta p) / t$ OR $3.5 / 0.0097$

Multiple Choice Answers

Q6: C

2(a)(i)	0.16 m / s
	conservation of momentum OR $m_P v_P = m_Q v_Q$ OR $2.7 \times v_P = 1.2 \times 0.36$ OR $(m_Q v_Q =) 0.432$ seen
	$(v_P =) m_Q v_Q / m_P$ OR $1.2 \times 0.36 / 2.7$
2(a)(ii)	0.078 J
	$(k.e. =) \frac{1}{2}mv^2$ OR $(k.e. =) \frac{1}{2} \times 1.2 \times 0.36^2$
	$(k.e. =) \frac{1}{2} \times 1.2 \times 0.36^2$
2(b)	(from) elastic (energy store in the compressed spring)
	to kinetic (as final energy store of trolleys)

Multiple Choice Answers

Q7: B

1(a)	20 J
	$(\Delta E_p =) mg(\Delta)h$ OR $0.2(0) \times 9.8 \times 10$
1(b)(i)	14 J
	$(E_k =) \frac{1}{2}mv^2$ OR $\frac{1}{2} \times 0.2(0) \times 12^2$
1(b)(ii)	$p = mv$ OR $(\Delta p =) mv - mu$
	$(\Delta p =) 0.2(0) \times \{14 + 12\}$ OR $0.2(0) \times \{14 - -12\}$ OR $p_{\text{before}} = 0.2(0) \times 14$ AND $p_{\text{after}} = 0.2(0) \times (-)12$
	$(\Delta p =) 2.8 - \{-2.4\}$ (= 5.2 kg m / s) OR $(\Delta p =) 0.2(0) \times \{14 - -12\}$
1(b)(iii)	21 N
	$(F =) \Delta p / (\Delta)t$ OR $F = (\Delta)mv / (\Delta)t$ OR $5.2 / 0.25$