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ERRATUM

**TO: CHIEF EDUCATION SPECIALISTS
DISTRICT CURRICULUM COORDINATORS
DISTRICT ASSESSMENT OFFICIALS (DAOs)
DISTRICT SUBJECT ADVISORS (DSAs)
PROVINCIAL SUBJECT COORDINATORS
CIRCUIT MANAGERS
DEPUTY CHIEF EDUCATION SPECIALISTS
SENIOR EDUCATION SPECIALISTS
PRINCIPALS OF SCHOOLS IN THE FET BAND**

SUBJECT: ERRATUM – TECHNICAL SCIENCES P1 GRADE 12 JUNE COMMON 2024

DATE: 11 JUNE 2024

ERRATA TECHNICAL SCIENCES P1 GRADE 12 JUNE 2024

QUESTION 2

2.2.1 When a net (resultant) force is exerted on an object, the object will accelerate in the direction of the force. This acceleration is directly proportional to the net (resultant) force, and inversely proportional to the mass of the object. ✓

2.2.6

For 40 kg block/Vir 40 kg blok

$$F_{net} = ma$$

$$ma = F_1 \cos \theta - F_{10\text{ kg}} - f_k \quad \checkmark$$

$$40a = 40 \cos 35^\circ - F_{10\text{ kg}} - 16,60 \quad \checkmark \dots\dots\dots(1)$$

For 10 kg block/Vir 10 kg blok

$$F_{net} = ma$$

$$ma = F_{40\text{ kg}} + F_2 - f_k$$

$$10a = F_{40\text{ kg}} + 20 - 2,5 \quad \checkmark \dots\dots\dots(2)$$

(1) + (2)

$$40a + 10a = 40 \cos 35^\circ - F10 \text{ kg} - 16,60 + F40 \text{ kg} + 20 - 2,5 \checkmark$$

$$a = 0,67 \text{ m} \cdot \text{s}^{-2} \checkmark$$

QUESTION 3

3.1.2

OPTION 1 Away from batsman / OPSIE 1 Weg van die kolwer

$$\Delta p = m v_f - v_i \checkmark$$

$$= (0,175) \checkmark (-30 - 12) \checkmark$$

$$= -7,35 \text{ N} \cdot \text{s}$$

$$= 7,35 \text{ kg} \cdot \text{m} \cdot \text{s}^{-1} \checkmark \text{ away from the batsman/weg van die kolwer} \checkmark$$

OPTION 2 Towards the batsman / OPSIE 1 Na die kolwer

$$\Delta p = m v_f - v_i \checkmark$$

$$= (0,175) \checkmark (30 - (-12)) \checkmark$$

$$= 7,35 \text{ N} \cdot \text{s}$$

$$= 7,35 \text{ kg} \cdot \text{m} \cdot \text{s}^{-1} \checkmark \text{ away from the batsman/weg van die kolwer} \checkmark$$

3.1.3

POSITIVE MARKING FROM 3.1.2 / POSITIEWE MERK VAN 3.1.2

$$F_{\text{net}} \Delta t = \Delta p \checkmark$$

$$F_{\text{net}}(0,05) = 7,35 \checkmark$$

$$F_{\text{net}} = 147 \text{ N} \checkmark$$

OR /OF

$$F_{\text{net}} \Delta t = \Delta p \checkmark$$

$$F_{\text{net}}(0,05) = -7,35 \checkmark$$

$$F_{\text{net}} = -147 \text{ N}$$

$$= 147 \text{ N} \checkmark$$

3.1.4

$F_{\text{net}} \propto \frac{1}{\Delta t} \checkmark$ if Δp is constant \checkmark crumple zones increase the contact time $\Delta t \checkmark$ F_{net} decreases \checkmark .

$F_{\text{net}} \propto \frac{1}{\Delta t}$ ✓ as Δp konstant is ✓ Frommelsones veroorsaak toename in kontak tyd ✓ F_{net} neem af ✓.

3.2.2

OPTION 1 Right + / OPSIE 1 Regs +

$$\sum p_{\text{before}} = \sum p_{\text{after}} \checkmark$$

$$m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1f} + m_2 v_{2f}$$

$$(2)(3) + (3,5)(0) \checkmark = (2)(-1) + 3,5v \checkmark$$

$$v = 2,29 \text{ m} \cdot \text{s}^{-1}$$

$$v = 2,29 \text{ m} \cdot \text{s}^{-1} \checkmark ; \text{right/regs} \checkmark$$

OPTION 2 Left + / OPSIE 2 Links +

$$\sum p_{\text{before}} = \sum p_{\text{after}} \checkmark$$

$$m_1 v_{1i} + m_2 v_{2i} = m_1 v_{1f} + m_2 v_{2f}$$

$$(2)(-3) + (3,5)(0) \checkmark = (2)(1) + 3,5v \checkmark$$

$$v = -2,29 \text{ m} \cdot \text{s}^{-1}$$

$$v = 2,29 \text{ m} \cdot \text{s}^{-1} \checkmark ; \text{right/regs} \checkmark$$

QUESTION 4

Suppose a learner states in

$$4.2.3 W_F = F \Delta x \cos \theta \checkmark = mgh$$

$$W_F = \underline{(1\,500)(9,8) \cos 0^\circ} \checkmark$$

$$W_F = 7350 \text{ J} \checkmark$$

4.2.4 $E_p = 7350 \text{ J} \checkmark \checkmark \checkmark$ full marks be awarded.

QUESTION 6

6.1.1 It is the thrust **or** (force) acting on the unit area around that point. ✓✓/ Dit is die stukrag **of** (krag) op die eenheidsoppervlakte rondom daardie punt ✓✓

NB: (Force be accepted for thrust)

6.1.2

$$P = \frac{F}{A} \checkmark$$

$$P = \frac{(250)(9,8)\sqrt{}}{(3,15 \times 10^4)(10^{-6})\sqrt{}}$$

$$P = 7,78 \times 10^4 \text{Pa} \checkmark$$

6.2.2 Correction of $P = h$ to $P = \rho gh$

NB: **EXAMINER & MODERATOR** to decide about 6.1.2 and 6.2.1 as the Formulae were not included in the Data-Sheet for the calculations.



MRS P.E. JAPHTA
(A) CES: AIDIBM SUBDIRECTORATE

11 June 2024

DATE