

QUESTION 1: Multiple choice

- 1.1 B ✓✓
- 1.2 C ✓✓
- 1.3 A ✓✓
- 1.4 C ✓✓
- 1.5 B ✓✓
- 1.6 D ✓✓
- 1.7 D ✓✓
- 1.8 C ✓✓
- 1.9 A ✓✓
- 1.10 D ✓✓

[20]

QUESTION 2:

2.1 $R^2 = T_P^2 + T_Q^2$
 $R^2 = 588^2 + 539^2$ ✓
 $R = 797,66 \text{ N}$ ✓ up ✓ (3)

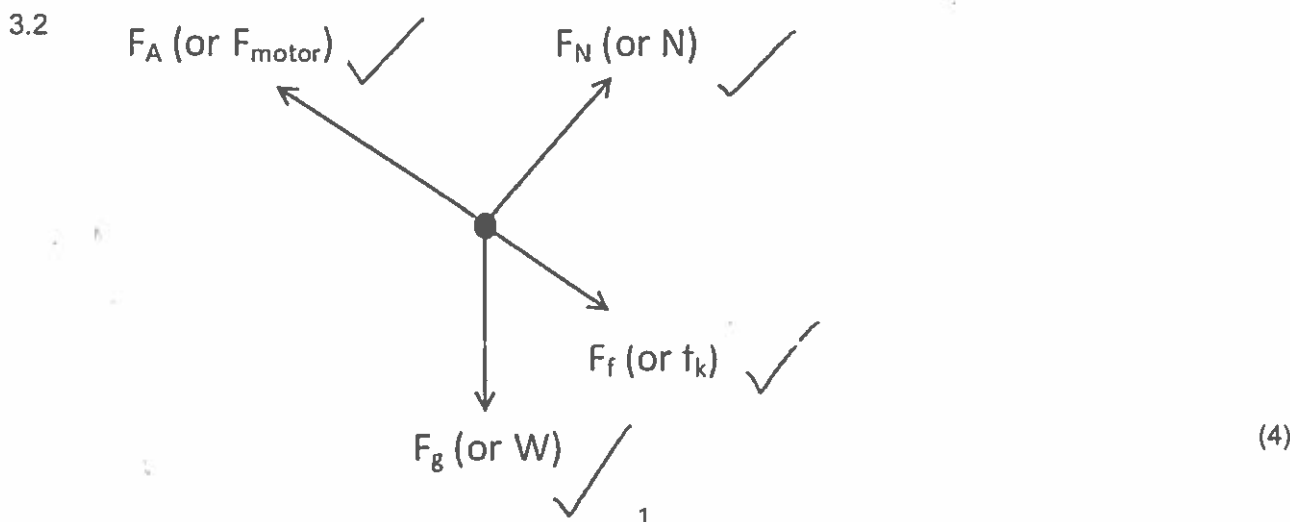
2.2 $797,66 \text{ N}$ ✓ ↻ ⊕ (1)

2.3 Equilibrant ✓ (1)

[5]

QUESTION 3:

3.1 When a resultant force acts on an object, the object will accelerate in the direction of the force at an acceleration directly proportional to the force and inversely proportional to the mass of the object.
 ✓✓ (all or nothing) (2)



3.3 $F_{net} = ma$ ✓

$$F_{net} = (1\,400)(2) \checkmark$$

$$F_{net} = 2\,800\text{ N } \underline{\text{up the incline}} \checkmark \text{ (no unit, no mark AND no direction, no mark)} \quad (3)$$

3.4 $F_{net} = F_{motor} - f_k - W_{\parallel}$

$$2\,800 = 18\,550 - f_k - (1\,400)(9,8)(\sin 25^\circ) \checkmark$$

$$f_k = 9\,951,68\text{ N} \checkmark$$

$$N = W_{\perp} = (1\,400)(9,8)(\cos 25^\circ) \checkmark$$

$$N = 12\,434,54\text{ N}$$

$$f_k = \mu_k N \checkmark$$

$$9\,951,68 = \mu_k (12\,434,54) \checkmark$$

$$\mu_k = 0,8 \checkmark$$

(6)

[15]