

**GCSE Chemistry A (Gateway Science)**

**J248/01** Chemistry A C1-C3 and C7 (Foundation Tier)

**Question Set 10**

- 1 (a) Nanoparticles are used as catalysts.

Describe a property of nanoparticles that make them useful as catalysts.

Large surface area (to volume ratio) thus more opportunities are available for reaction to occur

[2]

- (b) A student is synthesising a new titanium dioxide ( $\text{TiO}_2$ ) nanoparticle for use as a catalyst.

One  $\text{TiO}_2$  nanoparticle has a mass of  $5.0 \times 10^{-3}$  mg.

Calculate how many  $\text{TiO}_2$  nanoparticles are in 80.0 mg of  $\text{TiO}_2$ .

$$\frac{80}{5.0 \times 10^{-3}} = 16\,000 \text{ TiO}_2 \text{ nanoparticles}$$

[2]

**Total Marks for Question Set 10: 4**

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