Physical Quantities – 2022 November IGCSE 0625

1. Nov/2022/Paper_11/No.1

The times for 10 swings of a pendulum are measured.

measurement	time for 10 swings / s
1	10.12
2	10.48
3	10.24

What is the average time for **one** swing?

A 1.028 s **B** 1.036 s **C** 1.042 s **D** 10.28 s

2. Nov/2022/Paper_12/No.1

Which measuring instrument can be used to find the volume of a small stone?

A measuring cylinder partly filled with water

B measuring tape

C metre rule

D protractor

3. Nov/2022/Paper_13/No.1

A student uses a ruler to measure the length of a spring.

His results are shown.

14.9 cm 14.8 cm 14.8 cm 14.7 cm

What is the average length of the spring to three significant figures?

A 14.8 cm **B** 14.9 cm **C** 15.0 cm **D** 15 cm

4. Nov/2022/Paper_21/No.1

Which measuring instrument is used to measure the diameter of a thin metal wire?

A 30 cm rule

B measuring tape

C metre rule

D micrometre screw gauge

5. Nov/2022/Paper_22/No.1

Which measuring devices are most suitable to determine the volume of about 200 ml of liquid and the diameter of a thin wire?

	volume of about 200 ml of liquid	diameter of a thin wire
A	measuring cylinder	micrometer screw gauge
B	measuring cylinder	ruler
C	ruler	measuring cylinder
D	ruler	micrometer screw gauge

6. Nov/2022/Paper_23/No.1

A wire is approximately 48 cm long and has an approximate diameter of 0.3 mm.

Which measuring instruments can be used to obtain more precise values of the dimensions of the wire?

	length of the wire	diameter of the wire
A	30 cm ruler	micrometer
B	half-metre rule	30 cm rule
C	half-metre rule	micrometer
D	micrometer	half-metre rule

7. Nov/2022/Paper_31/No.1

Fig. 1.1 shows a measuring cylinder containing some water.

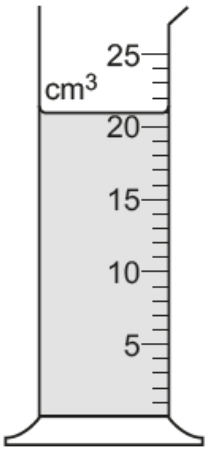

Fig. 1.1

(a) State the volume of the water in the measuring cylinder.

volume = ... cm^3 [1]

(b) A student adds 20 drops of water to the water that is in the measuring cylinder in Fig. 1.1. The new volume of water in the measuring cylinder is 25 cm^3.

Calculate the average volume of one drop of water.

average volume of one drop = ... cm^3 [4]

(c) A student has a measuring cylinder and a small, irregularly shaped piece of metal. The piece of metal can easily fit into the measuring cylinder.

Describe how the student can use the measuring cylinder and some water to find the volume of the metal.

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..... [4]

[Total: 9]

8. Nov/2022/Paper_42/No.1(a)

Fig. 1.1 shows sea water flowing down a channel into a tank without splashing. The water is flowing at a rate of 800 kg/min. The length and width of the tank are 3.10 m and 1.20 m. The density of the sea water is 1020 kg/m^3.

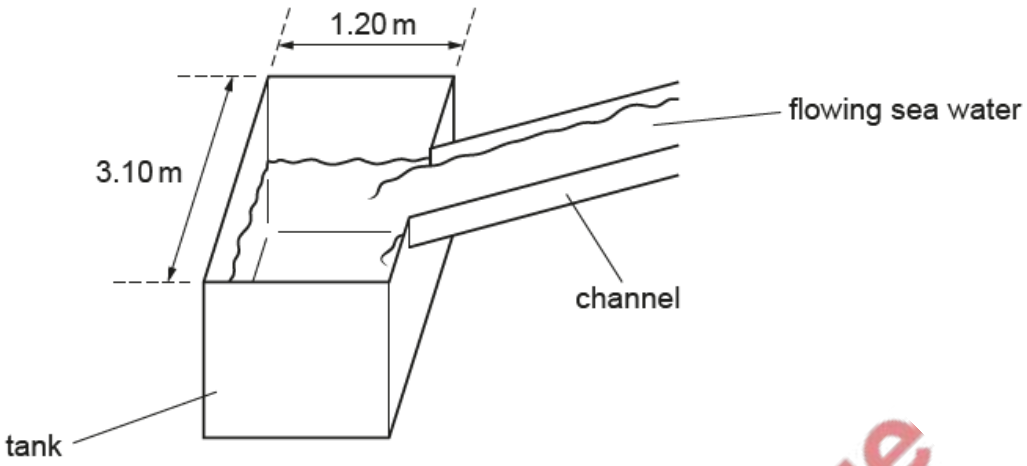

Fig. 1.1 (not to scale)

(a) Initially, the tank is empty.

Calculate the depth of water in the tank after 1.00 minute. Give your answer to three significant figures.

depth = ... [3]

9. Nov/2022/Paper_42/No.2

(a) A pendulum swings with a time period of approximately one second.

Describe how to use a stop-watch to determine the time period of the pendulum.

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..... [3]

(b) Complete Table 2.1 by writing in each space of the right-hand column which **one** of the following devices is used to measure the quantity in the left-hand column.

digital balance	measuring cylinder	metre rule
micrometer screw gauge	stop-watch	thermocouple

Table 2.1

quantity	device
volume of water in a glass	
width of a small swimming pool	
thickness of a piece of aluminium foil	

[3]

[Total: 6]