

2024 TERM ONE ASSESSMENT TEST I

SENIOR ONE

Physics paper one

Time: 1 hour and 15 minutes

Instructions;

- ✓ This paper has one scenario test item
- ✓ Read it carefully and attempt all the parts
- ✓ Use of relevant diagrams/illustrations is an added advantage
- ✓ Listing of the apparatus/materials is an added advantage
- ✓ Clearly show working where possible
- ✓ All answers must be written to the required number of decimal places or significant figures.

Scenario

Edgar is a pit latrine digger in a certain society, one day as he was digging a very long pit he reached at a step where he started breaking very hard and glittering stones. He took a small sample at home and his wife was so happy and she thought Edgar had bought a gold surprise for her. It was Edgar's first time to see such a glittering solid. When he heard his wife talking about gold, he was also surprised and in his mind he felt as a billionaire. What he knows, gold is one of the most expensive goods but he is not sure whether his solid is pure gold or not and in addition the solid lacks a shape and it has confused the family.

Tasks

1. As a physics student, what do you think Edgar can do to prove whether the solid is the real one him and his wife are guessing. (All steps must be general that's not individualized)

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2. List the possible sources of errors you think Edgar can make during the process.

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3. Tell him how the errors above can be minimized for accurate and reliable results.

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4. Suppose he measured and obtained the following results;

$$mass = 40.0g \quad volume = 2.07cm^3$$

Do you think his solid was pure? (Hint: density of gold = $19.3gcm^{-3}$)

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5. If yes help Edgar know what can change the value obtained above and how he can keep his solid safe.

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6. Where can the knowledge in the test item be applied else in real life

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