

FORM 1 TERM 3 2020

PHYSICS

1. (a) Define laboratory. (1 mark)

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(b) State **five** safety rules a student should follow while in the laboratory. (5 marks)

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2. (a) What is Physics? (1 mark)

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(b) Identify the branch of Physics that deals with: (5 marks)

(i) the movement of charge from one point to another through a conductor.

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(ii) motion of bodies under the influence of force.

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(iii) the transformation of heat from one form to another.

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(iv) magnets and magnetic fields and their extensive applications.

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(v) the study of light as it travels from one media to another.

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3. List **five** professionals who require Physics as a foundation in order to pursue their careers. (5 marks)

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4. Identify SI units for the following quantities. (5 marks)

(a) Length

- (b) Mass
- (c) Time
- (d) Amount of substance
- (e) Electric current

5. Define the following terms as used in measurement. (4 marks)

(a) Length
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(b) Area
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(c) Mass
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(d) Density
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6. List **four** apparatus in the laboratory used for measuring volume. (4 marks)

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7. Differentiate between accuracy an error. (2 marks)

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8. (a) You have a rock A with a volume of 15cm³ and a mass of 45 g. What is its density? (2 marks)

(b) You have a different rock B with a volume of 30cm³ and a mass of 60g. What is its density?
(2 marks)

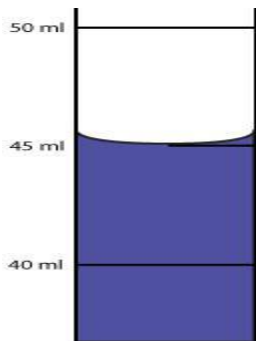
(c) Which rock is heavier? Which is lighter? (2 marks)

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(d) Which rock is more dense? Give a reason. (2 marks)

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9. The volume of a solution was measured as below. If the mass of solution is measured to be 60.75 grams, what is the density of the solution? (2 marks)



10. What is the mass of a cylinder of lead that is 2.50 cm in diameter, and 5.50 cm long. The density of lead is 11.4 g/cm^3 .

(a) Calculate the volume in two decimal places of the cylinder. Take $\pi=3,14$ (3 marks)

(b) Determine the mass of the cylinder. Leave your answer as a whole number. (3 marks)

11. The mass of an empty density bottle is 20 g. Its mass when filled with water is 40.0 g and 50.0 g when filled with liquid A.

(a) Determine the mass of water in kilograms. (3 marks)

(b) Find the mass of liquid A (in kilograms). (3 marks)

(c) Find the volume of water. (2 marks)

(d) Calculate the density of liquid A if the density of water is $1,000 \text{ kgm}^{-3}$. (2 marks)

12. (a) What is force as used in Physics? (1 mark)

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b) Name and explain any four types of force. (4 marks)

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c) Explain how the following factors affect surface tension. (2 marks)

(a) Impurities

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(b) Temperature

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13. Give three differences between mass and weight. (3 marks)

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14. The length of a spring is 16.0 cm. Its length becomes 20.0 cm when supporting a weight of 5.0 N.

Calculate the length of the spring when supporting a weight of 2.5 N. (3 marks)