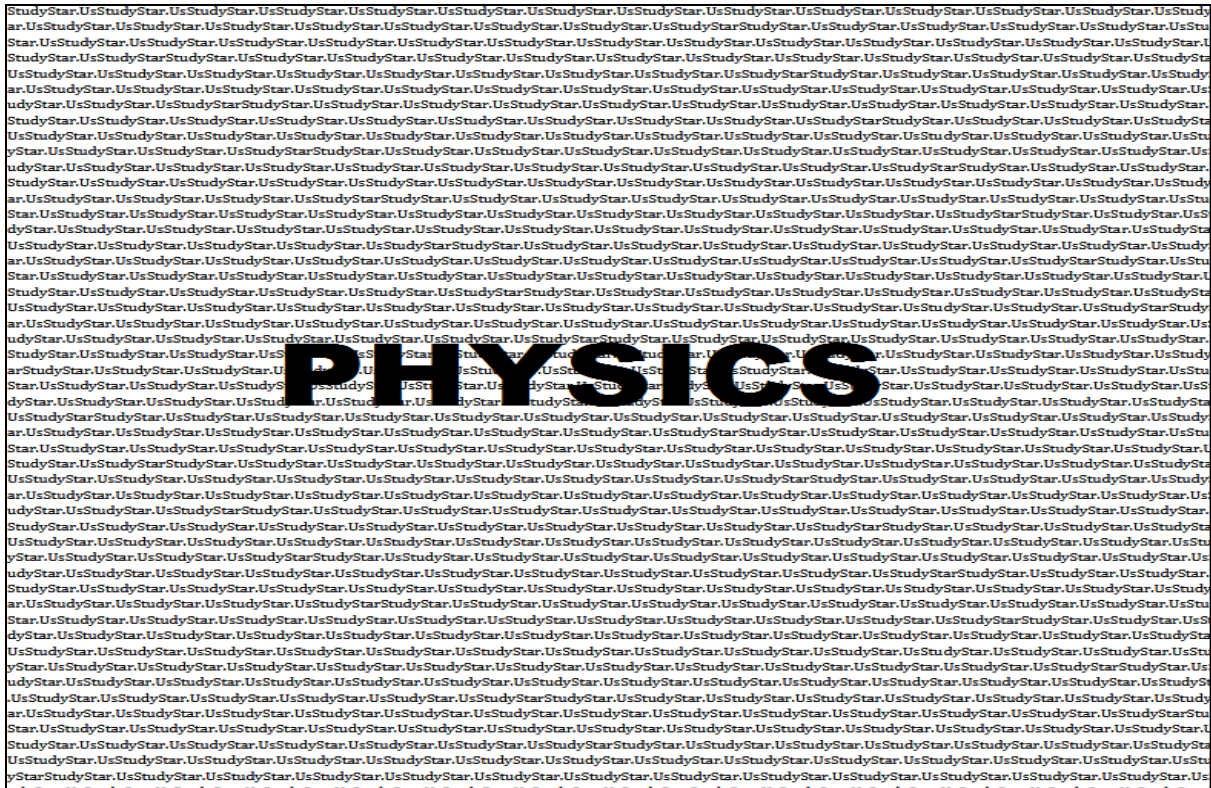




# MASS, WEIGHT, VOLUME AND DENSITY

Total Marks: 25

Duration: 0 hours, 25 minutes

## Instructions to test takers

1. Answer all the questions in this paper
2. All the answers for the questions in this paper will be found on **Study Star** ([www.studystar.me](http://www.studystar.me))
3. Using the answers on the website, mark yourself truthfully and carefully.

Turn this page, time yourself and begin the test

### Section A [10 marks]

1. Which of the following is a correct SI unit for weight?
  - a. Kilograms
  - b. Newton
  - c. Pounds
2. Study the diagram below.



- a. Beam balance
  - b. Spring balance
  - c. Scale
3. Calculate the weight of a body which is 80kg on earth.
    - a. 8.0N
    - b. 133.6N
    - c. 800.0N
  4. State the SI unit for density.
    - a.  $\text{g/cm}^3$
    - b.  $\text{kg/m}^3$
    - c.  $\text{kg/cm}^3$
  5. Which of the following is correct about relative density?
    - a. It can be calculated by making the ratio of mass to density
    - b. It is 22 times heavier than density
    - c. It has no units
  6. A large cube has a length of 2m. Calculate its density if it has a mass of 1800kg.

- a.  $225 \text{ kg/m}^3$
  - b.  $900 \text{ kg/m}^3$
  - c.  $654 \text{ kg/m}^3$
7. Convert  $2000 \text{ kg/m}^3$  to  $\text{g/cm}^3$ .
- a.  $0.2 \text{ g/cm}^3$
  - b.  $2000\ 000 \text{ g/cm}^3$
  - c.  $2 \text{ g/cm}^3$
8. What quantity is measured in newton per kilogram?
- a. Density
  - b. Acceleration
  - c. Weight
9. Calculate the relative density of a substance which has a mass of 16g and volume of  $25 \text{ cm}^3$  if the same volume of water has a mass of 20g.
- a. 1.25
  - b. 0.8
  - c. 0.64
10. Which of the following is the SI unit for volume?
- a.  $\text{cm}^3$
  - b.  $\text{m}^3$
  - c.  $\text{cm}^2$

### Section B [5 marks]

11. State the SI unit of mass.
12. Which instrument is used to measure mass?
13. The amount of space occupied by a body is called \_\_\_\_\_
14. The ratio of the mass of a substance to the mass of water with the same volume is called \_\_\_\_\_
15. State a quantity which has no SI unit.

### Section C [10 marks]

16. A stone of mass 400g is lowered into a measuring cylinder containing water, the water rises from  $300\text{cm}^3$  to  $500\text{cm}^3$ . What is the density of the stone? [2]
17. The dimensions of a room are 4m long, 2.5m wide and 2m high. The density of the air in the room is approximately  $1.3\text{kg/m}^3$ . Find the approximate mass of the air in the room. [2]
18. A stone of mass 12g and density  $3\text{g/cm}^3$  is gently lowered in a measuring cylinder containing  $25\text{cm}^3$ . What will be the new reading of the cylinder? [2]
19. A block has a mass of 28g and is placed in a measuring cylinder containing water. If the water rises from  $30\text{cm}^3$  to  $34\text{cm}^3$ . Find the density of the metal in  $\text{g/cm}^3$ . [2]
20. Convert  $0.5\text{g/cm}^3$  to  $\text{kg/m}^3$ . [2]



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