What is Matter?

Anything that has mass and takes up space is matter, even the air you cannot see.

Name: Date: Score: ____ / 18

A. Fill in the blanks

1. Matter is anything that has ____ and occupies space.

2. The SI unit of mass is ____.

3. 1 litre = ____ mL.

4. The SI unit of volume is ____.

B. True or False

5. Air is matter. True / False

6. Light is matter. True / False

7. 1 L = 1 dm^3. True / False

8. Feelings like joy are matter. True / False

C. Assertion and reason

9. Assertion (A): Air is matter.
Reason (R): Air has mass and occupies space.

(a) Both A and R are true, and R explains A
(b) Both A and R are true, but R does not explain A
(c) A is true, R is false
(d) A is false, R is true

Answer: _____

10. Assertion (A): Light is matter.
Reason (R): Light helps us see objects.

(a) Both A and R are true, and R explains A
(b) Both A and R are true, but R does not explain A
(c) A is true, R is false
(d) A is false, R is true

Answer: _____

D. Choose the correct option

11. Which is matter?

(a) heat
(b) sound
(c) air
(d) light

Answer: _____

12. Which is not matter?

(a) water
(b) stone
(c) shadow
(d) oxygen

Answer: _____

13. 250 mL equals:

(a) 2.5 L
(b) 0.25 L
(c) 25 L
(d) 0.025 L

Answer: _____

14. Matter must have:

(a) colour
(b) smell
(c) mass and volume
(d) life

Answer: _____

E. Numerical problems

15. Convert: (a) 2.5 L to mL, (b) 750 mL to L, (c) 3 dm³ to L.

F. Short answer questions

16. How can you show that air is matter?

17. Classify: water, light, sand, sound, air, heat.

G. Match the columns

18. Match each item in Column A with the correct item in Column B.

Column A	Column B	Your answer
1. Has mass and volume	(a) kg	1 → ____
2. SI unit of mass	(b) Matter	2 → ____
3. 1 dm³	(c) 1 litre	3 → ____
4. Light, sound, heat	(d) Not matter	4 → ____

Detailed solutions

1. mass

2. kg

3. 1000

4. m^3

5. True. It has mass and fills space (a balloon).

6. False. It has no mass and does not occupy space.

7. True. Both equal 1000 cm^3.

8. False. They have no mass or volume.

9. (a) R is the definition of matter applied to air.

10. (d) A is false (no mass, no volume); R is true but irrelevant.

11. (c) air. Air has mass and volume.

12. (c) shadow. A shadow has no mass.

13. (b) 0.25 L. 250 ÷ 1000.

14. (c) mass and volume. By definition.

15. 1 L = 1000 mL, so 2.5 L = 2500 mL; 750 mL = 750 ÷ 1000 = 0.75 L; 1 dm^3 = 1 L, so 3 dm^3 = 3 L. **Answer: 2500 mL; 0.75 L; 3 L**

16. An inflated balloon fills space (volume), and a full balloon weighs slightly more than an empty one (mass). So air is matter.

17. Matter: water, sand, air. Not matter: light, sound, heat.

18. 1 → (b), 2 → (a), 3 → (c), 4 → (d). Only things with mass and volume are matter.