

1 Below is a list of changes that take place at puberty in human beings.

- 1 Enlargement of mammary glands
- 2 Growth of hair around the pubis
- 3 Deepening of voice
- 4 Widening of hips

Which one affects both boys and girls?

- A 1
- B 2
- C 3
- D 4

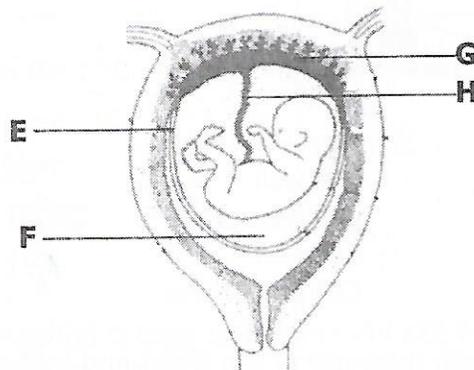
2 Which one of the following is **not** a reason for maintaining good body hygiene?

- A Stay healthy
- B look beautiful
- C avoid smelling
- D avoid infections

3 Which of the following best describes fertilisation?

- A fusion of ovum and sperm
- B release of an unfertilised ovum
- C depositing of sperms in the vagina
- D implantation of the fertilised ovum in the uterus.

4 The following diagram shows a pregnant woman.



The labelled organ that secretes progesterone hormone for the embryo is ...

- A E
- B F
- C G
- D H

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5 Which one of the following is **not** a role of the children's clinic?

- A Immunisation
- B Monitoring growth
- C Orphanage facilities
- D supplementing nutrition

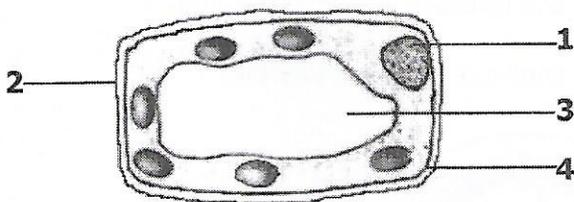
6 Which one of the following sets has foods that can make a balanced diet?

- |          |         |         |         |         |
|----------|---------|---------|---------|---------|
| <b>A</b> | Cassava | Fish    | Banana  | Potato  |
| <b>B</b> | Fish    | Cabbage | Kapenta | Sausage |
| <b>C</b> | Nshima  | Rape    | Cabbage | Mango   |
| <b>D</b> | Kapenta | Mango   | Beans   | Rape    |

7 Which of the following shows the correct type of pollution and its effects on the environment?

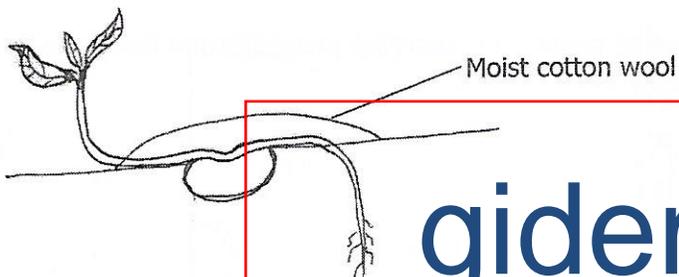
	<b>Type of pollution</b>	<b>Effect</b>
<b>A</b>	Water pollution	Global warming
<b>B</b>	Land pollution	Formation of acid rain
<b>C</b>	Air pollution	Causes cholera and typhoid
<b>D</b>	Water pollution	Causes eutrophication

8 Which numbered part of the plant cell below controls the movement of substances that enter and leave the cell?



	<b>Numbered part</b>	<b>Name</b>
<b>A</b>	1	Cell wall
<b>B</b>	2	Cell membrane
<b>C</b>	3	Cell wall
<b>D</b>	4	Cell membrane

9 The diagram below shows growth response of the shoot and root systems.



What is the growth response shown by the shoot and roots?

	Shoot	Root
A	Positive geotropism	Negative geotropism
B	Positive phototropism	Negative phototropism
C	Negative phototropism	Positive geotropism
D	Negative geotropism	Positive geotropism

10 What advantage do organic fertilisers have over inorganic fertilisers?

- A quick acting
- B improves soil texture
- C easy to transport
- D easy to use on large areas of land.

11 All matter is made up of basic building blocks called ...

- A atoms.
- B nucleus.
- C protons.
- D electrons.

12 The table below shows the melting points and boiling points of two substances **I** and **J**.

Substance	Melting point (°C)	Boiling Point (°C)
I	5.4	80
J	18	290

At which temperature will both **I** and **J** be liquids?

- A 10°C
- B 50°C
- C 100°C
- D 150°C

13 Which method is used to obtain solid salt from a salt solution where the solvent is not required?

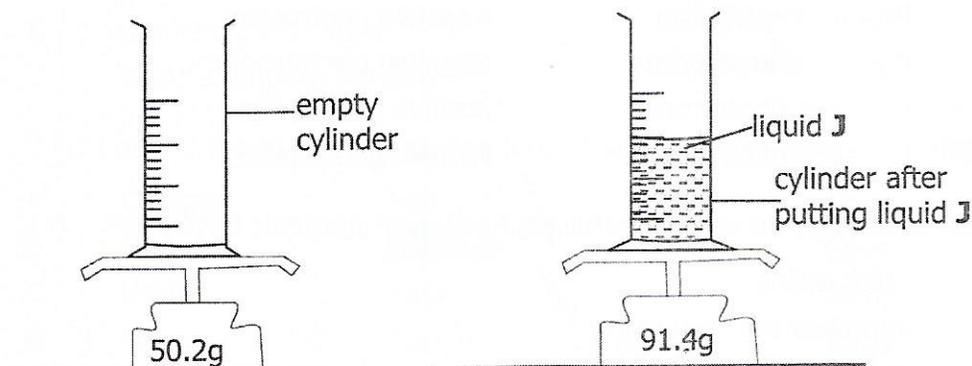
- A Filtration
- B Distillation
- C Evaporation
- D Fractional distillation

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- 14 The diagram below shows a cylinder placed on a mass balance with and without a liquid inside.



What is the mass of liquid J

- A 10.0 g  
 B 41.2 g  
 C 91.4 g  
 D 141.6 g
- 15 Which of the following is **not** correct for mass and weight?
- | <b>Mass</b>                       | <b>Weight</b>               |
|-----------------------------------|-----------------------------|
| A Constant                        | Varies from place to place  |
| B Measured using spring balance   | Measured using beam balance |
| C Measured in kilograms           | Measured in Newtons         |
| D Amount of matter in a substance | Pull of gravity on a mass   |
- 16 A piece of wood has a density of  $0.5\text{g/cm}^3$  and a volume of  $5\text{ cm}^3$ . What is its mass?
- A 0.1 g  
 B 2.5 g  
 C 10.0 g  
 D 25.0 g
- 17 Which row in the table is correct about conduction and convection?
- | <b>Conduction</b>         | <b>Convection</b>            |
|---------------------------|------------------------------|
| A Can happen in a solid   | Can happen in a Liquid       |
| B Can happen in a solid   | Can happen in a solid        |
| C Only happens in liquids | Only happens in liquids      |
| D Only happens in liquids | Happens in liquids and gases |

- 18 The diagram below shows a clinical thermometer.

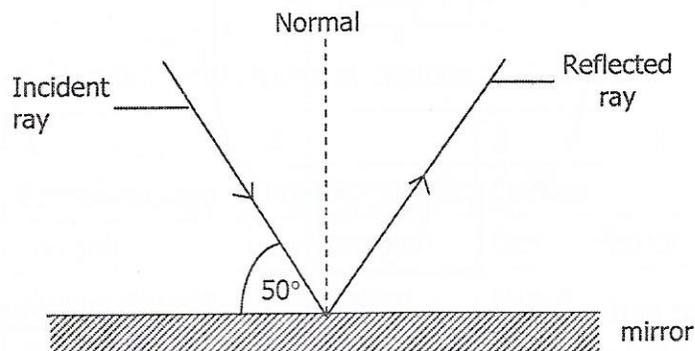


Thermometer

What physical property does it use in order to measure temperature?

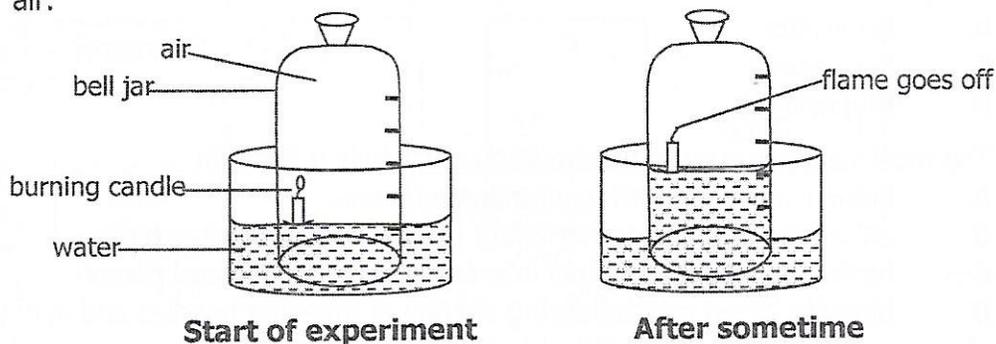
It uses the expansion of a ...

- A liquid.
  - B solid.
  - C gas and liquid.
  - D liquid and solid.
- 19 The diagram below shows a ray of light striking a mirror.



What is the angle of reflection?

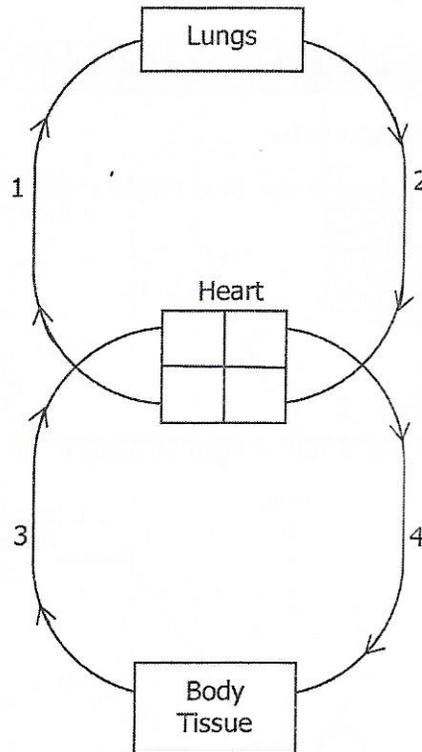
- A 40°
  - B 50°
  - C 80°
  - D 130°
- 20 Study the diagram below on an experiment to show the composition of gases in air.



In the experiment, what is the percentage of part of air in the jar that does not support burning?

- A 20 %
- B 50 %
- C 70 %
- D 80 %

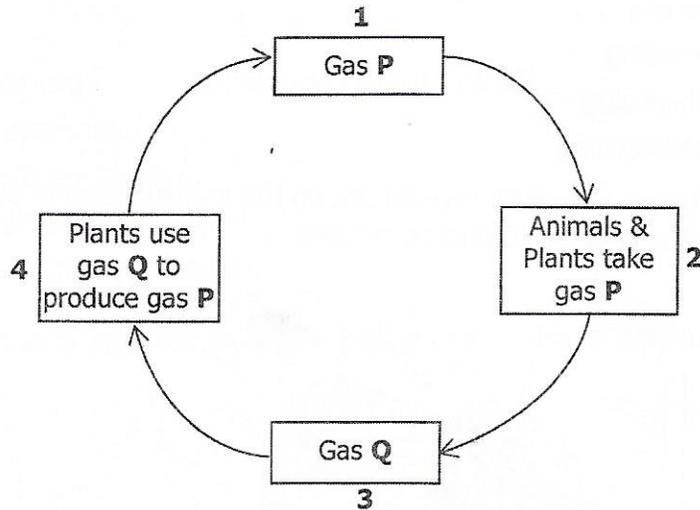
- 21 The diagram below shows a double blood circulatory system in a human being.



- Which numbered part shows an artery that carries deoxygenated blood?
- A 1
  - B 2
  - C 3
  - D 4
- 22 What is the name of a disease that is caused by tar in cigarette smoke, damaging the alveoli in the lungs and making breathing difficult?
- A Asthma
  - B Bronchitis
  - C Pneumonia
  - D Emphysema
- 23 The most common way of transmission of syphilis is through ...
- A blood transfusion with contaminated blood.
  - B an infected mother to her infant before, during or after birth.
  - C having unprotected sexual intercourse with an infected person.
  - D blood to blood contact during sharing of injecting needles and syringes.
- 24 Which one of the following is the **most effective** method in adolescents, of prevention from contracting Human Immuno-deficiency Virus (HIV) that causes AIDS?
- A Practicing abstinence
  - B Avoiding casual sex
  - C being faithful to one partner
  - D Consistence use of condoms



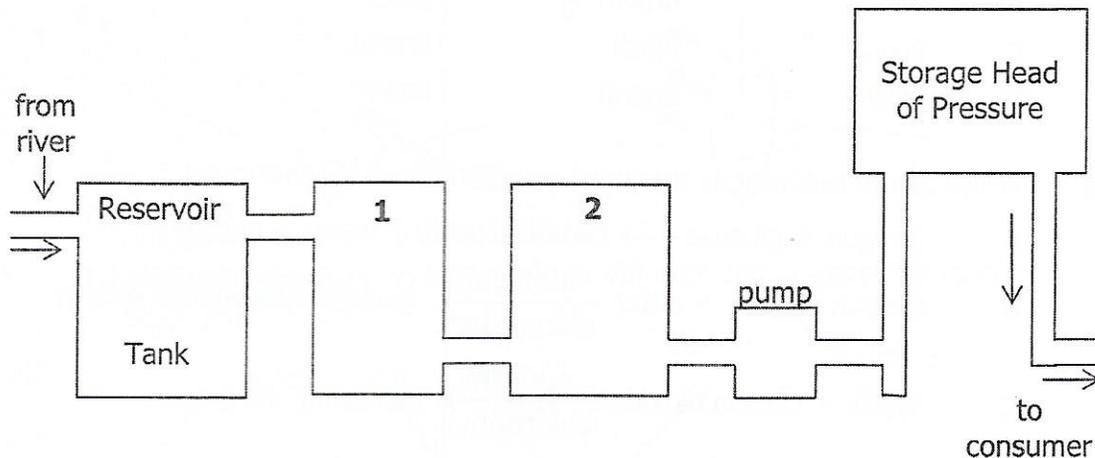
25 Study the diagram below which shows a gas cycle in the biosphere.



What gas and process is found at position 1, 2, 3 and 4?

	1	2	3	4
A	Carbon dioxide	Photosynthesis	Oxygen	Respiration
B	Oxygen	Respiration	Carbon dioxide	Photosynthesis
C	Carbon dioxide	Respiration	Oxygen	Photosynthesis
D	Oxygen	Photosynthesis	Carbon dioxide	Respiration

26 The diagram below shows the stages of a water purification plant.



Which of the following pairs correctly identifies processes that occur at 1 and 2.

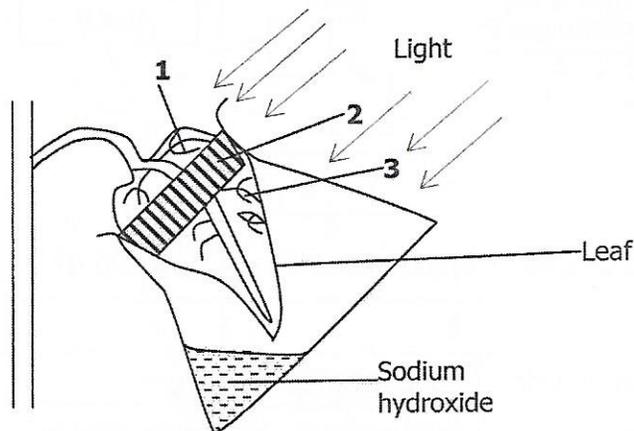
	1	2
A	Chlorination	Filtration
B	Filtration	Sedimentation
C	Filtration	Chlorination
D	Sedimentation	Filtration



27 Which process is used to improve the breed of domestic animals?

- A In-breeding
- B Self-breeding
- C Cross-breeding
- D Natural-breeding

28 The diagram below shows an experiment on the investigation of substances necessary for the process of photosynthesis.



After several hours the leaf was tested for starch. What will be the colours observed on parts of the leaf numbered 1, 2 and 3.

- |   | 1     | 2     | 3     |
|---|-------|-------|-------|
| A | Black | Black | Brown |
| B | Brown | Brown | Black |
| C | Brown | Black | Brown |
| D | Black | Brown | Brown |

29 Which of the following is the word equation for photosynthesis?

- A Oxygen + glucose  $\longrightarrow$  carbon dioxide + water + energy
- B Carbon dioxide + water  $\xrightarrow[\text{chlorophyll}]{\text{sunlight}}$  glucose + oxygen + energy
- C Water + carbon dioxide  $\xrightarrow[\text{chlorophyll}]{\text{sunlight}}$  glucose + oxygen
- D Glucose + carbon dioxide  $\longrightarrow$  starch + water + energy

30 Which one of the following is a biological factor that affects the rate of transpiration?

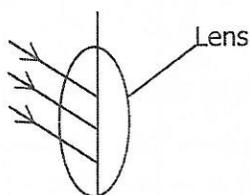
- A Wind
- B Light
- C Size of the leaf
- D Amount of water in air

- 31 The equation below is of a chemical reaction written in general form.

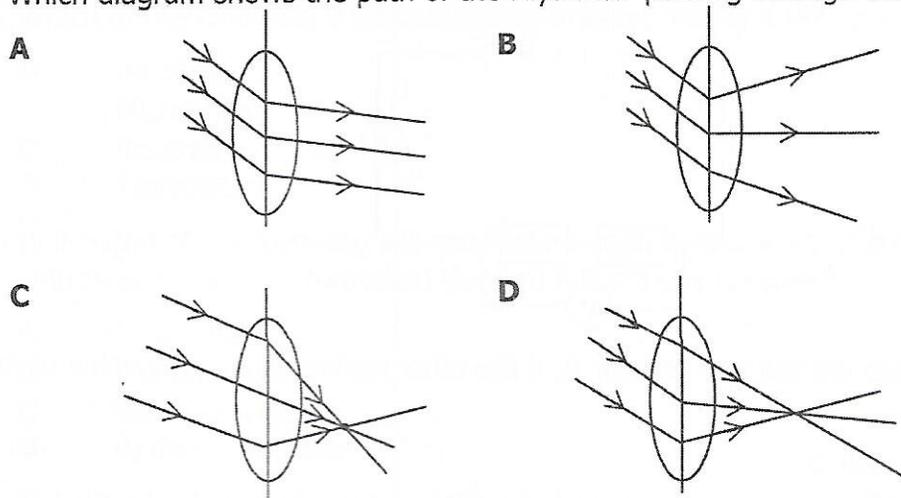


This is an example of a chemical reaction called ...

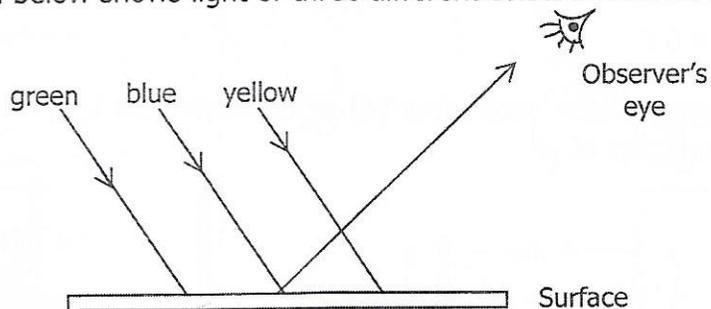
- A synthesis.  
 B decomposition.  
 C single replacement.  
 D double replacement.
- 32 Three rays of light fall on a converging lens as shown below.



Which diagram shows the path of the rays after passing through the lens?



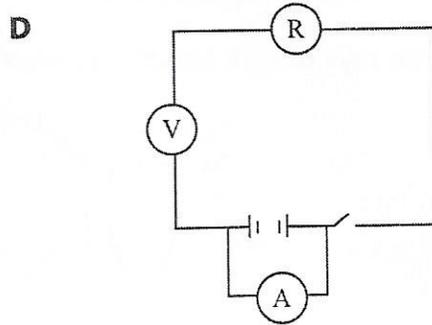
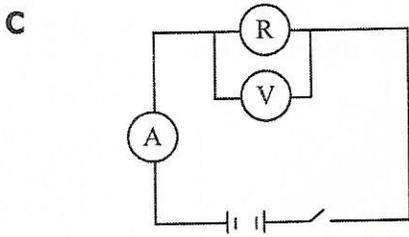
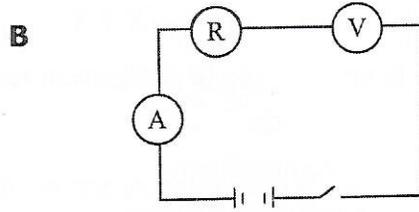
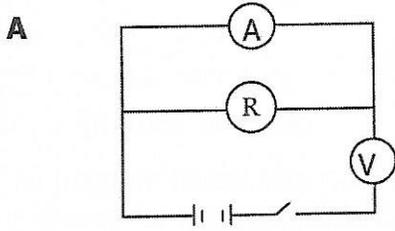
- 33 The diagram below shows light of three different colours directed onto a surface.



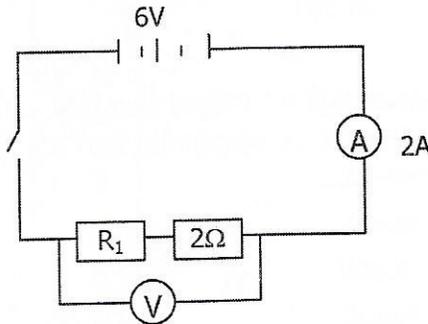
What colour is the surface?

- A Blue  
 B Green  
 C White  
 D Yellow

34 Which of the following circuits can be used to measure electric current and voltage across resistor R?



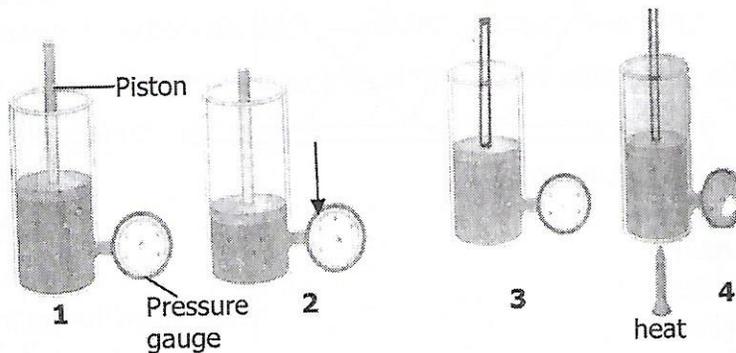
35 The diagram below shows an electric circuit.



Calculate the value of resistor  $R_1$  if the other resistor is  $2\Omega$ . The value of resistor  $R_1$  is ...

- A** 1.0  $\Omega$
- B** 2.0  $\Omega$
- C** 3.0  $\Omega$
- D** 4.0  $\Omega$

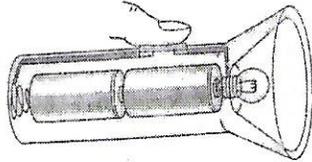
36 The diagram below shows four (4) air tight cylinders 1, 2, 3 and 4 containing the same mass of air.



Which pair of cylinders has a higher pressure?

- A 1 and 2
- B 2 and 3
- C 1 and 4
- D 2 and 4

37 The diagram below shows a torch that uses dry cells to produce light.



What energy conversions occur in the torch?

- A Potential → kinetic → electrical → light
- B Kinetic → potential → heat → light
- C Light → heat → potential → chemical
- D Chemical → electrical → heat → light

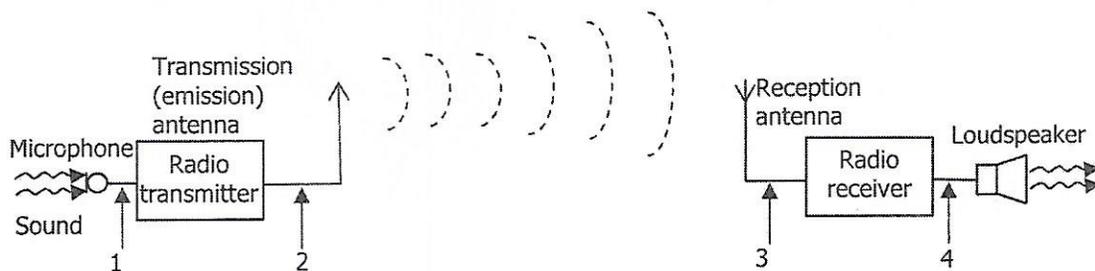
38 Which of the following is **not** necessary in broadcasting a live radio lesson?

- A Amplifier
- B Microphone
- C Recorder
- D Transmitter

39 Which one of the following will send information by transmitting a copy of written and graphic information through a telephone network?

- A Newspaper
- B Fax message
- C SMS message
- D Radio conference

40 The diagram below shows a process of sending and receiving radio message.



Which wave frequencies found at parts **1**, **2**, **3** and **4** are similar.

- A 1 and 2
- B 1 and 3
- C 3 and 4
- D 1 and 4