

N

Trial Examination 4

20

Duration: 30 minutes

For each question, choose the most suitable option and write the letter (A, B, C or D) in the brackets provided.

1. Which cell has cytoplasm and a large central vacuole?

A Muscle cell

B Root hair cell

C Xylem vessel

D Red blood cell

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2. Two identical potato strips were placed in two different solutions, X and Y, for one hour. The potato strips were weighed at the start of the experiment. They were weighed again after they had been soaked for one hour. Table 1 shows the change in mass of the two potato strips.

Table 1

Solution	Change in Mass / g
X	+0.30
Y	+0.00

Which of the following statements is **correct**?

A The cells of the potato strip in solution Y had burst.

B Solution X had a higher water potential than solution Y.

C Solution Y had a higher water potential than solution X.

D The cells of the potato strip in solution X were plasmolysed.

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3. Identical potato strips were placed in sugar solutions of different concentrations. Figure 1 shows the percentage change in length of the potato strips after soaking for one hour.

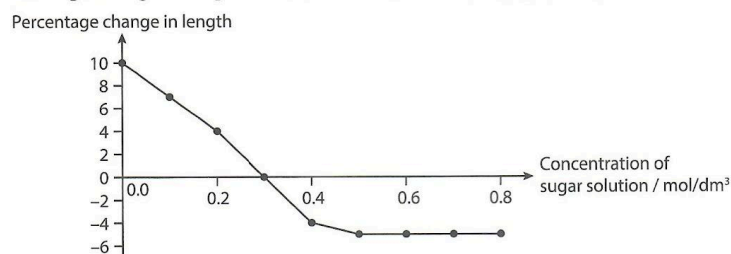


Figure 1

At which concentration of the sugar solution was the water potential the same as the potato strips?

A 0.0 mol/dm³

B 0.2 mol/dm³

C 0.3 mol/dm³

D 0.5 mol/dm³

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4. An experiment was conducted as shown in Figure 2.

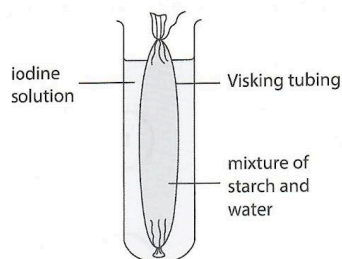


Figure 2

What is the colour of the content inside the Visking tubing after one hour?

- A** Brick-red **B** Colourless
C Blue-black **D** Yellowish-brown ()

5. A student has been tasked to find out if there are carbohydrates present in a cookie.

Which of the following tests should he carry out?

- 1 Biuret test
2 Iodine test
3 Benedict's test
4 Ethanol emulsion test
- A** 2 only
B 1 and 2 only
C 2 and 3 only
D 2, 3 and 4 only

6. Figure 3 shows a set-up where equal volumes of fats and intestinal lipase are mixed at different pH levels.

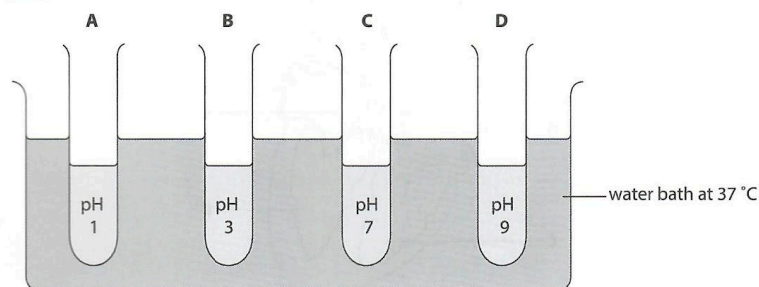


Figure 3

In which test tube, **A**, **B**, **C** or **D**, will most fats be digested? ()

7. An agar jelly containing egg white was set in a Petri dish. Four wells of equal sizes were cut out of the agar jelly. They were filled with different substances as shown in Figure 4.

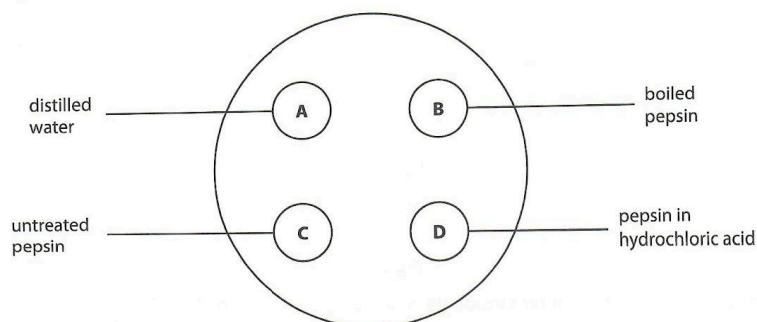


Figure 4

Which well, **A**, **B**, **C** or **D**, would increase in size the most after an hour? ()

8. A man recently found out that his bile duct was blocked. A series of tests was conducted on him. The results were then compared to those obtained before his bile duct was blocked.

Which of the following would be observed in this man?

- A** A decrease in the rate of digestion of fats
- B** An increase in the production of pancreatic juice
- C** An increase in the glucose concentration in the blood
- D** A decrease in the rate of digestion of carbohydrates, fats and proteins ()

9. Figure 5 shows a section of a human heart.

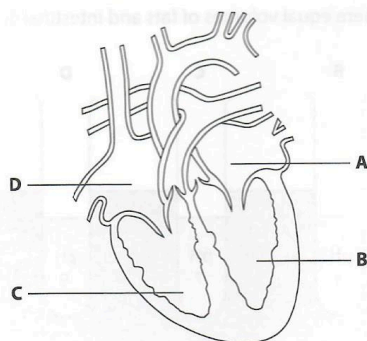


Figure 5

Which chamber, **A**, **B**, **C** or **D**, pumps blood at the highest pressure? ()

10. What is a consequence of having a low platelets count?

- A Greater risk of infections
- B Excessive bleeding from a cut
- C Greater risk of blood agglutination
- D Breathlessness when climbing stairs

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11. Figure 6 shows a human circulatory system.

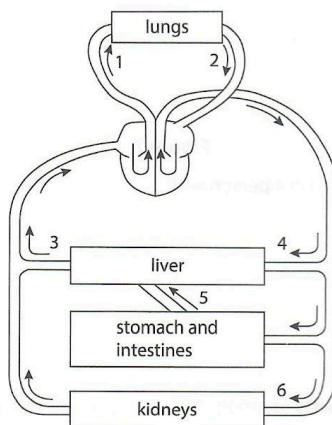


Figure 6

Identify the pulmonary vein, hepatic artery and hepatic portal vein.

	Pulmonary Vein	Hepatic Artery	Hepatic Portal Vein
A	1	4	5
B	1	3	6
C	2	4	5
D	2	3	6

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12. Tobacco smoke contains many harmful substances. A poisonous gas that can be found in tobacco smoke is _____.

- A tar
- B nicotine
- C carbon dioxide
- D carbon monoxide

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13. Figure 7 shows some normal alveoli and some damaged alveoli.

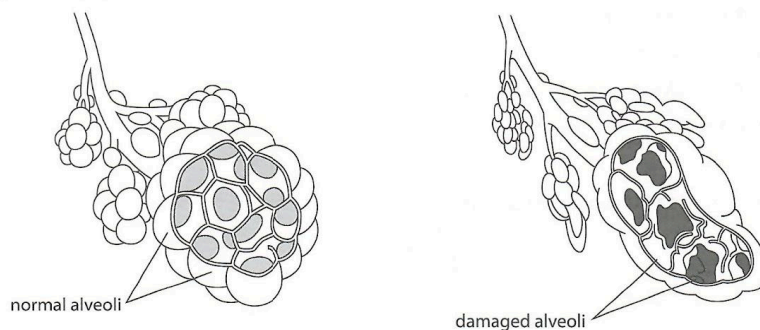


Figure 7

The damaged alveoli are found in a person with _____.

- A asthma
- B bronchitis
- C lung cancer
- D emphysema

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14. Which of the following **correctly** identifies the passage of air as it is inhaled?

- A Bronchiole → bronchus → trachea
- B Bronchus → bronchiole → trachea
- C Trachea → bronchiole → bronchus
- D Trachea → bronchus → bronchiole

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15. A man was diagnosed with Acquired Immune Deficiency Syndrome (AIDS) caused by Human Immunodeficiency Virus (HIV).

Which of the following actions could have led to the transmission of HIV to this man?

- 1 Sharing drinks
- 2 Sharing needles
- 3 Having sexual intercourse
- 4 Using a public toilet seat with urine on it

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

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16. Figure 8 shows substances that can be found in plants.

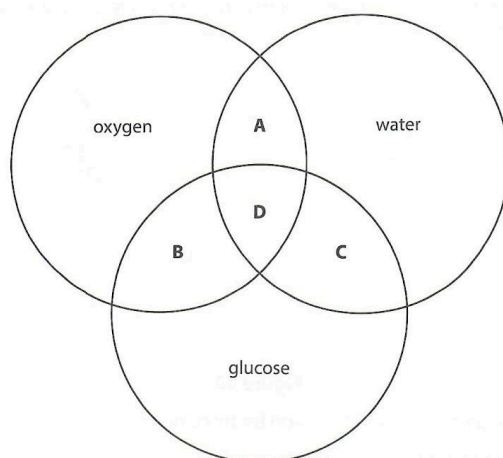


Figure 8

Which section, **A**, **B**, **C** or **D**, represents the products of photosynthesis in the leaves? ()

17. Figure 9 shows a cross-section through two different parts of a plant.

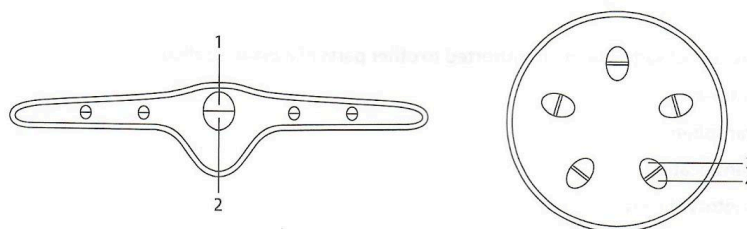


Figure 9

In which parts does translocation occur?

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

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18. Figure 10 shows two similar plants of the same weight placed on a balance. The upper surface of the leaves of plant **M** is covered with petroleum jelly. For plant **N**, the petroleum jelly is applied on the lower surface of the leaves.

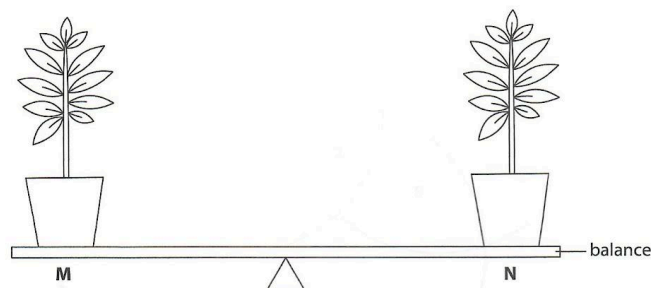


Figure 10

The plants are left in a hot and windy location for three hours.

What will be observed after three hours?

- A Both plants would have withered.
 - B The balance will remain horizontal.
 - C The side plant **N** is on will be lower.
 - D The side plant **M** is on will be lower. ()
19. The process of sugars being transported to other parts of a plant is called _____.
 A diffusion
 B transpiration
 C translocation
 D photosynthesis ()
20. Which of the following statements about transport in plants is **true**?
 A Increasing light intensity reduces the size of the stomata.
 B Water vapour diffuses out of the stomata into the atmosphere.
 C The translocation of glucose and amino acids occurs in the phloem.
 D Transpiration does not affect the movement of water in the xylem vessels. ()