

The City School

Unified Mid-Year Examinations
2018 - 2019
Class 9



SCHOOL NAME

INDEX NUMBER

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DATE

BIOLOGY

Paper 1 Multiple Choice

5090/12

1 hour

Additional Materials: Multiple Choice Answer Sheet
Soft Pencil
Soft clean eraser

READ THESE INSTRUCTIONS FIRST

Write in soft pencil.

Do not use paper clips, glue or correction fluid.

Write your School name, Index number and Date in the spaces provided.

There are **thirty** questions on this paper. Answer **all** questions. For each question there are four possible answers **A, B, C** and **D**.

Choose the **one** you consider correct and record your choice in **pencil** on the separate Answer Sheet.

Read the instructions on the Answer Sheet very carefully.

Each correct answer will score one mark. A mark will not be deducted for a wrong answer.

Any rough working should be done in this booklet.

Electronic calculators may be used.

Invigilated By: _____

Checked By: _____

Marks Talled By: _____

This document consists of **12** printed pages.

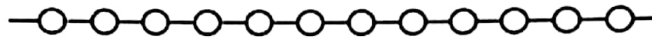
1 Which of the following have both cytoplasm and cell walls?

- A Liver cells
- B Red blood cells
- C Root hair cells
- D Xylem vessels

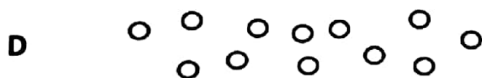
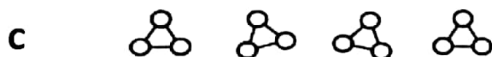
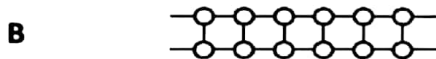
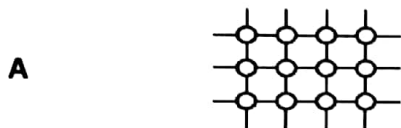
2 The cell wall of a plant cell is removed using an enzyme. What would happen if this cell is then placed in distilled water?

- A It would take longer for the cell to become turgid.
- B Proteins in the cytoplasm would leave through the cell membrane.
- C The cell would become smaller as water passes out.
- D The cell would burst as water moves into it.

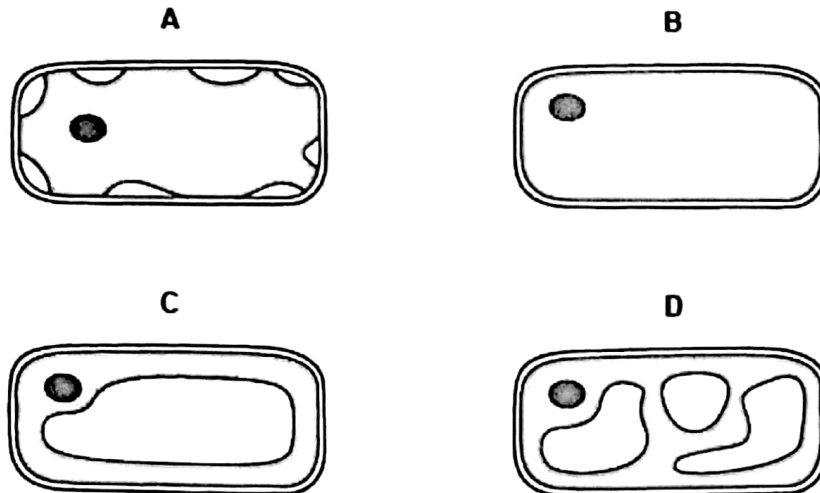
3 The diagram shows part of a starch molecule.



Which diagram shows this molecule after it has been completely digested?



- 4 Which diagram shows the appearance of a plant cell several minutes after it has been placed in a concentrated solution of sugar?

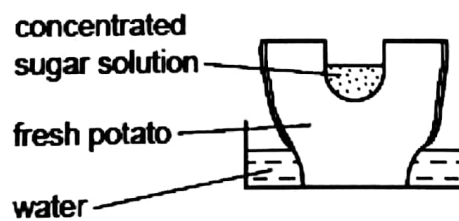


- 5 Which structures are present in a root hair cell?

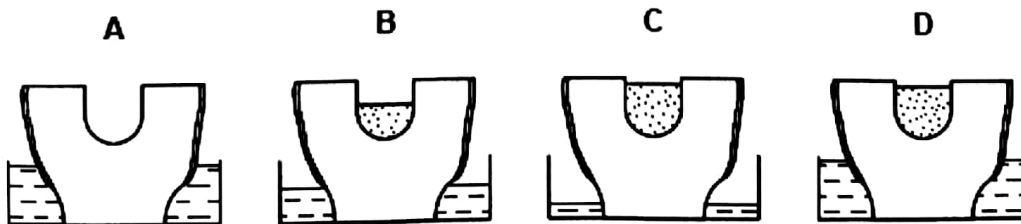
	Nucleus	Chloroplast
A	✓	✓
B	✓	✗
C	✗	✓
D	✗	✗

Key
 ✓ = present
 ✗ = absent

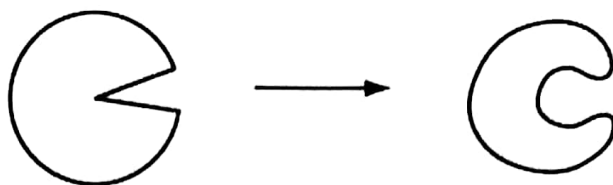
- 6 The diagram shows an experiment using a potato



Which shows the result of the experiment after 24 hours?

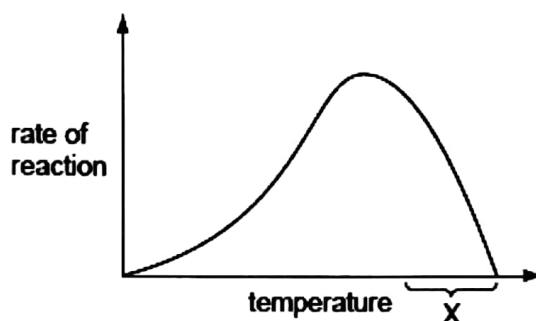


7 The Diagram Represent how an enzyme molecule changes in shape.



What explains this change

- A It has been cooled to 5 °C
 - B It has been heated to 70°C.
 - C It has been placed in a concentrated salt solution.
 - D It has been placed in a dilute salt solution
- 8 The graph shows how the rate of an enzyme-controlled reaction changes with temperature.



What is happening within the temperature range marked X?

- A The enzyme is becoming denatured.
 - B The enzyme is being used up.
 - C The reaction is occurring at body temperature.
 - D The reaction is occurring at the optimum temperature.
- 9 Which process are responsible for the uptake of ions from the soil by a plant and the uptake of glucose into the villi of a human?

	Uptake of ions by a plant	Uptake of Glucose into the villi
A	active Transport	active Transport
B	active Transport	osmosis
C	Diffusion	osmosis
D	osmosis	active Transport

- 10 The table shows where different components of food are digested in the alimentary canal.

Which option states where protein is digested?

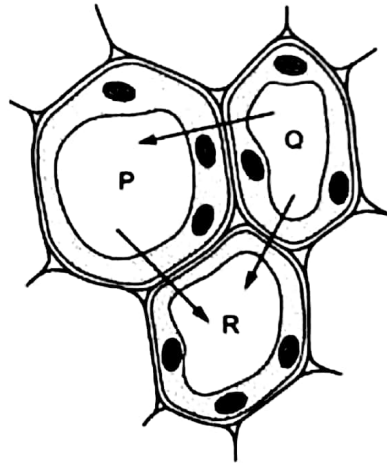
	Mouth (buccal cavity)	stomach	duodenum	ileum
A	✓	✗	✓	✗
B	✗	✓	✓	✓
C	✗	✗	✓	✓
D	✗	✓	✗	✓

Key

✓ = substance is digested

✗ = substance is not digested

- 11 The Diagram shows three plant cells labelled P, Q and R. The arrows show the direction of water movement by osmosis.



What is the correct order of water potential in the cells from the highest to lowest?

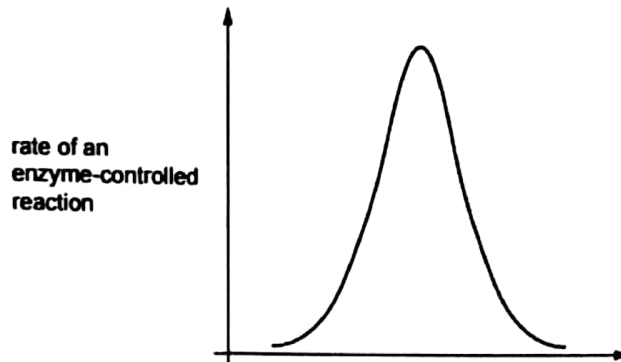
	highest	middle	lowest
A	P	Q	R
B	P	R	Q
C	Q	P	R
D	R	P	Q

12 What statement are correct for all enzymes?

- 1 There are proteins.
- 2 They are secreted into the alimentary canal.
- 3 They speed up biochemical reactions.
- 4 None of them work low PH

A 1 only. B 1, 2, 3 only. C 1 and 3 D All of the above

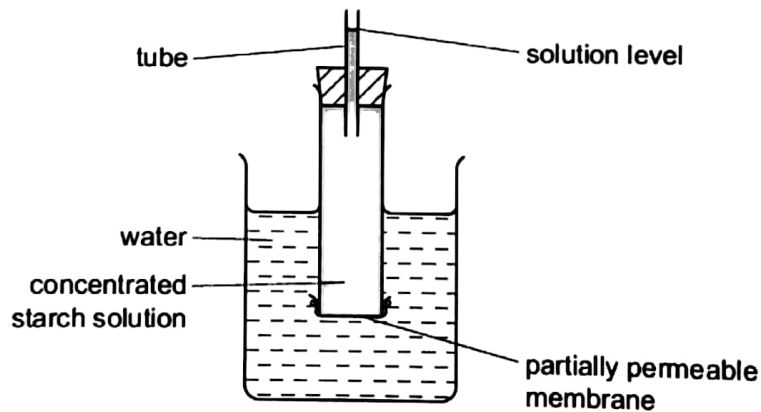
13 The graph shows the result of an investigation into enzyme activity.



How should the horizontal axis of the graph be labelled?

A pH B temperature C time D volume

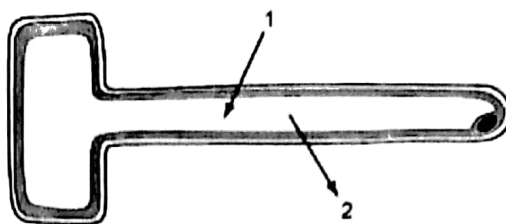
14 The diagram represents apparatus used to investigate osmosis.



Which molecules will move across the partially permeable membrane and which change will occur in the solution level?

	Molecule	Solution level
A	starch	fall
B	starch	rise
C	water	fall
D	water	rise

15 The diagram shows a root hair cell.



Which arrows show the direction in which it is possible for nitrate ions and water molecules to move?

	Nitrate ions	Water molecules
A	1 only	1 and 2
B	1 and 2	1 and 2
C	1 and 2	2 only
D	2 only	1 only

16 Which table states the test for different food group?

A

test	reagent	positive result
starch	iodine	blue-black
reducing sugars	Benedict's	orange
protein	biuret	purple
fats	ethanol	milky white

B

test	reagent	positive result
starch	biuret	blue-black
reducing sugars	Benedict's	orange
protein	iodine	purple
fats	ethanol	milky white

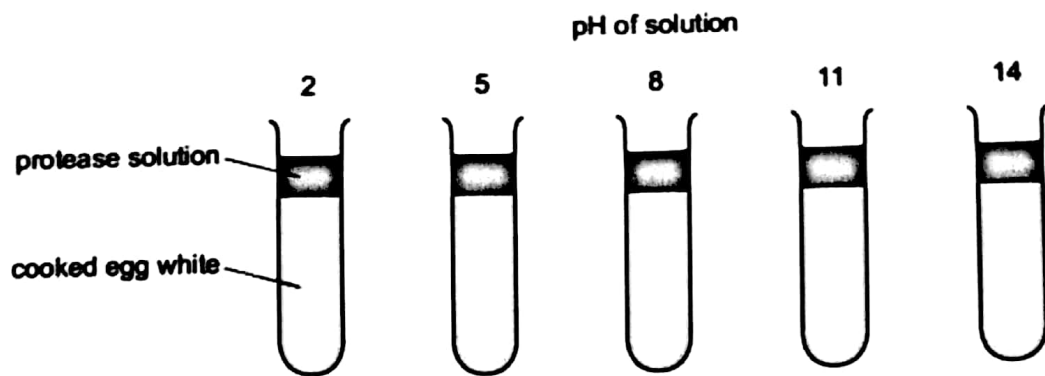
C

test	reagent	positive result
starch	iodine	blue-black
reducing sugars	Benedict's	purple
protein	biuret	milky white
fats	ethanol	orange

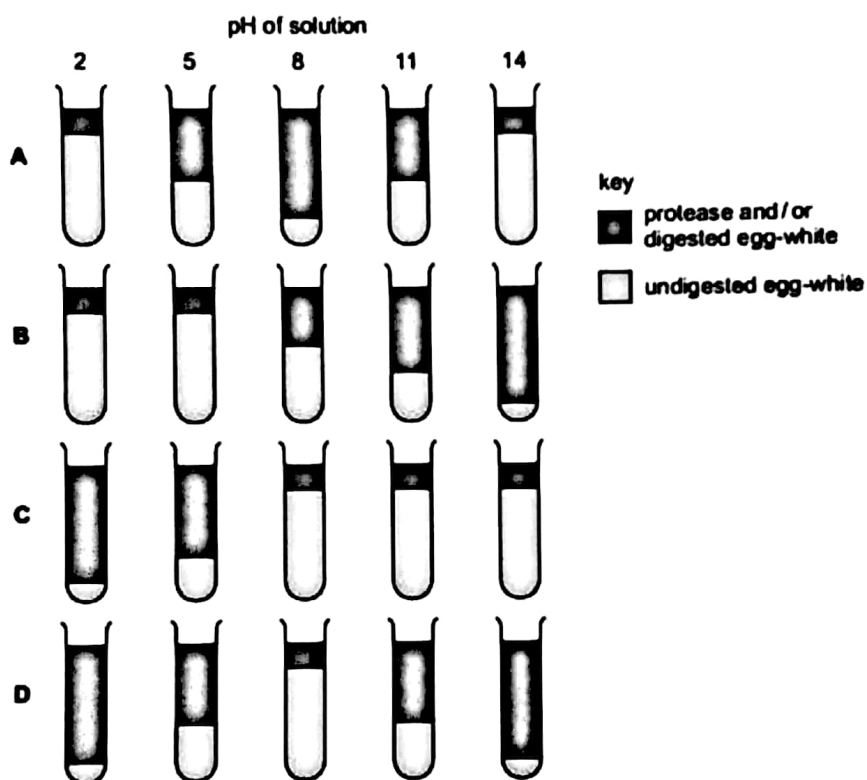
D

test	reagent	positive result
starch	biuret	blue-black
reducing sugars	Benedict's	purple
protein	iodine	milky white
fats	ethanol	orange

17 Five tubes containing cooked egg-white are set up as shown. Protease solution of different pH are added to each tube.



Which diagram shows the results of this experiment for a protease from the stomach?



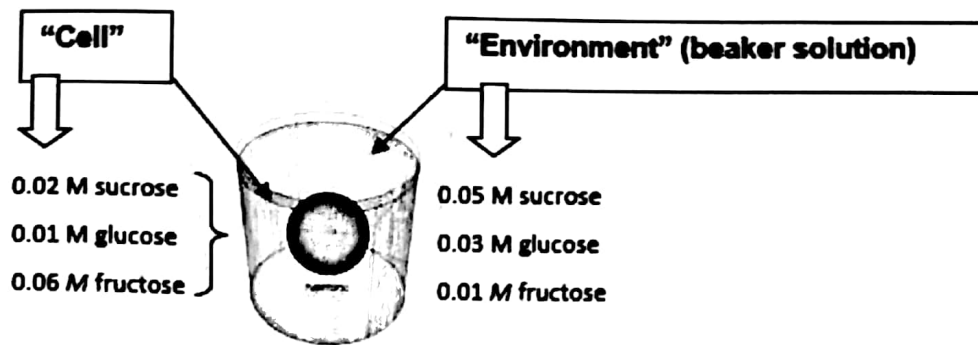
18 What is needed in the diet of a man working hard in a hot climate?

	High energy intake	Protein	Extra water
A	✓	✓	X
B	✓	X	✓
C	✓	✓	✓
D	X	✓	✓

Key: ✓ = needed

X = not needed

- 19 An artificial cell containing an aqueous solution of [0.02 M sucrose, 0.01 M glucose, and 0.06 M fructose] enclosed in a selectively permeable membrane has just been immersed in a beaker containing a different aqueous solution [0.05 M sucrose, 0.03 M glucose, 0.01 M fructose]:



The membrane is permeable to water and to the simple sugars glucose and fructose, but is completely impermeable to the disaccharide sucrose.

Which solute(s) will exhibit a net diffusion into the cell?

- A Glucose and Fructose
 B Glucose
 C Sucrose and Glucose.
 D Fructose
- 20 The table shows the concentration of a substance inside and outside four different cells. Which cell would need the most energy to absorb the substance by active transport?

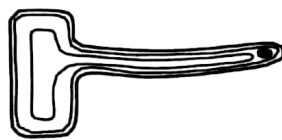
Cell	Concentration (arbitrary units) Inside cell	Concentration (arbitrary units) Outside cell
A	3	6
B	3	9
C	6	2
D	9	2

- 21 Increased surface area allows for the maximum absorption of water and salts.

Which of the following cells does the above statement refer to?



A



B



C

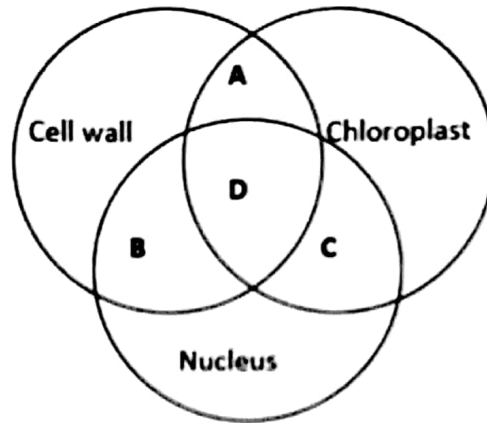


D

22 The diagram shows a specialized plant cell.



Which structures will not be part of this cell?



23 Which one of the following is the best definition of osmosis?

- A The movement of water from a concentrated solution to a dilute solution across a partially permeable membrane
- B The movement of a dissolved substance from a concentrated solution to a dilute solution across a partially permeable membrane
- C The movement of water from a dilute solution to a concentrated solution across a partially permeable membrane
- D The uptake of water by a living cell

24 Which of the following elements are commonly found in carbohydrates, fats and proteins?

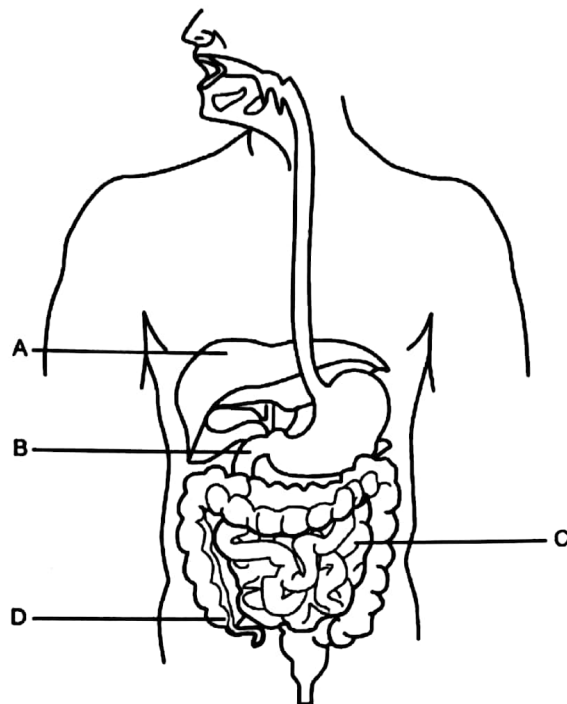
- A Carbon, hydrogen, oxygen
- B Carbon, sulphur, oxygen
- C Carbon, nitrogen, oxygen
- D Carbon, chlorine, oxygen

25 Which of the following is a structure-function mismatch?

	Structure	Function
A	Duodenum	Chemical digestion
B	Oral cavity	Mechanical digestion
C	Stomach	Chemical digestion
D	Ileum	Mechanical digestion

Study the diagram below and use it to answer Questions 26 and 27.

26 In which of the labelled parts final digestion takes place?

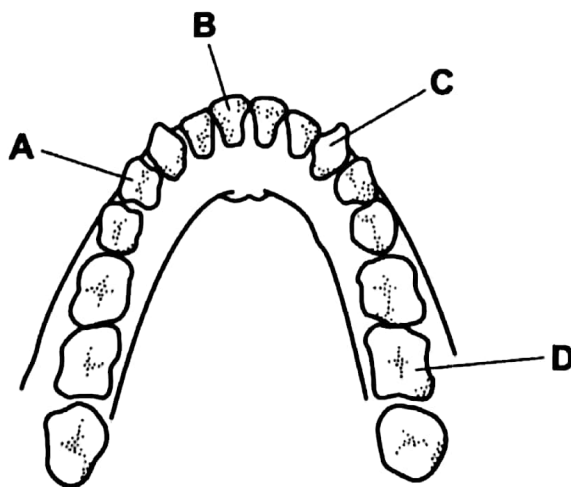


27 Which of the following statements about the part labelled A is correct?

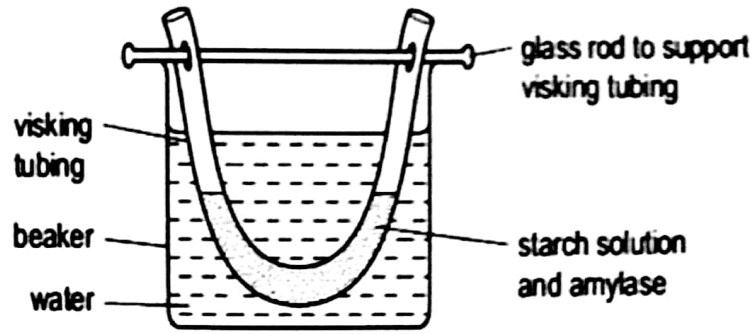
- A Its role is to remove most of the water and mineral salts from its contents
- B Produces enzymes for digestion of food
- C Breaks urea
- D Breaks down alcohol

28 The diagram shows teeth in the lower jaw of a human.

Which of the teeth would be better developed in a carnivorous animal?



- 29 An investigation is carried out on digestion and absorption in the alimentary canal. The diagram shows the apparatus used. The visking tubing is permeable to small molecule such a glucose but not to large molecule such as starch



After one hour sample of water in the beaker are tested with Benedict's solution and with iodine solution.

Which colour are obtained

	colour obtained after heating benedict's solutions	Colour Obtained after adding Iodine Solution
A	blue	blue-black
B	blue	yellow-brown
C	red	blue-black
D	red	yellow-brown

- 30 The diagram represent the passage of water molecules and glucose molecule across a partially permeable membrane.

Which arrow indicates osmosis?

