SuperNovaSchool
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Entry Test

Academic Session 2019-20

BIOLOGY

Total Marks **40**

45 min

Class: IG-II(IX)

Write in block letters:

Candidate Name

Date

Kindly read the instructions carefully;

1 Answers must be written in ink.

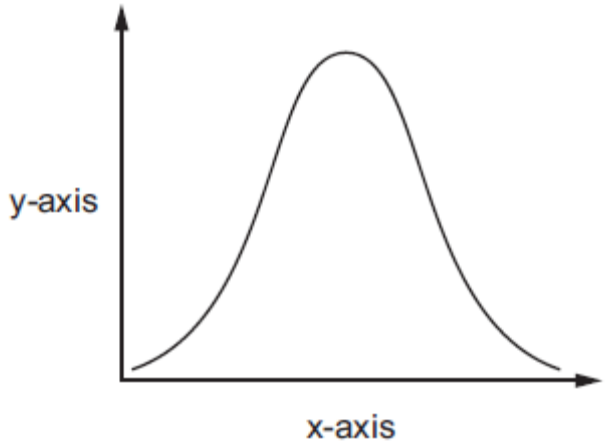
2 Write the number of question distinctly before each answer.

FOR OFFICIAL USE ONLY

Total Marks		**Marks Obtained**		**Percentage**	

Q no.1: Choose the best possible answer.

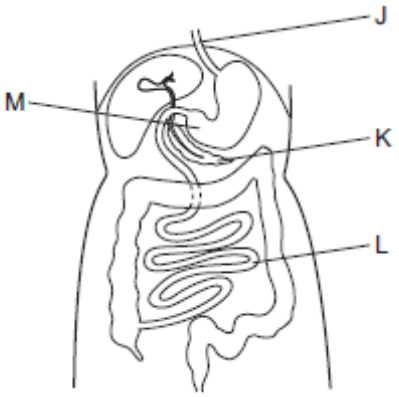
1. An experiment was carried out to investigate the effect of pH on enzyme action. The graph shows the result.



What are the labels for the x-axis and the y-axis?

	x-axis	**y-axis**
A	pH	Rate of reaction
B	pH	Time
C	rate of reaction	pH
D	time	pH

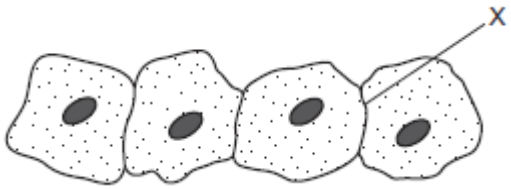
2. The diagram shows part of the alimentary canal.



Which row correctly identifies the structure labelled J to M?

	J	K	L	M
A	oesophagus	pancreas	small intestine	stomach
B	pancreas	small intestine	stomach	oesophagus
C	small intestine	stomach	oesophagus	pancreas
D	stomach	oesophagus	pancreas	small intestine

3. The diagram shows some animal cells, as seen under the microscope.



What will be present at X?

A. one cell membrane

B. one cell wall

C. two cell membrane

D. two cell walls

4. Which characteristics are correct for both **osmosis** and **diffusion?**

	require a partially permeable membrane	require a concentration gradient	are energy consuming processes
A	✓	✓	✗
B	✓	✗	✓
C	✗	✓	✗
D	✗	✗	✓

5. Small molecules are used as the basic units in the synthesis of large molecules.

Which statement is correct?

A. amino acids are basic units of carbohydrates

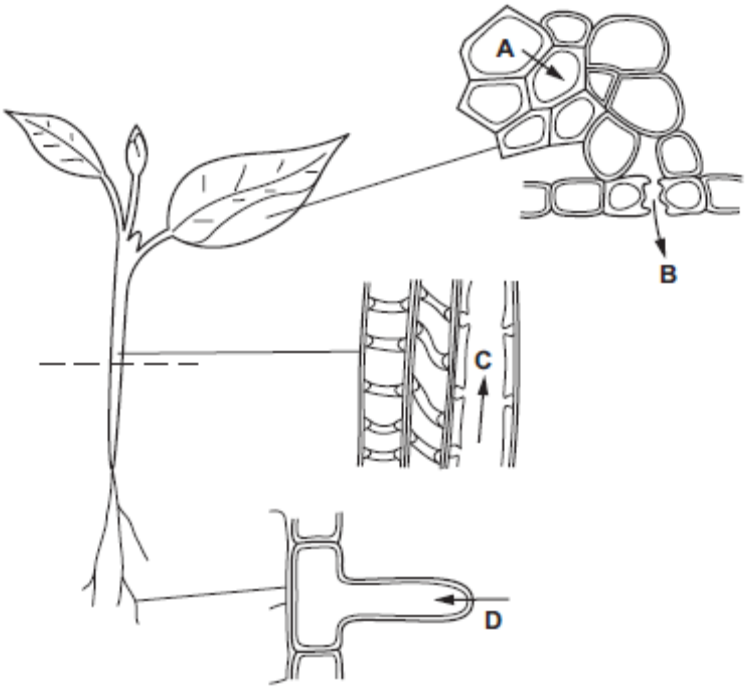
B. fatty acids are basic units of glycogen

C. Glycerol is a basic unit of oils

D. Simple sugar is a basic unit of protein

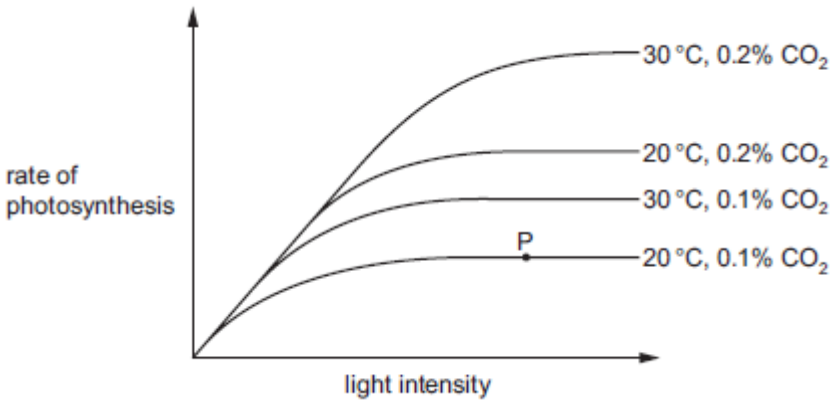
6. The diagram show stages in the passage of water through a plant.

Which arrow shows water moving in the form of water vapour?



7. The diagram shows how the rate of photosynthesis varies with light intensity.

The four curves show different conditions of temperature and carbon dioxide concentration.



What limits the rate of photosynthesis at point P?

	light intensity	carbon dioxide concentration	temperature
A	✓	✓	✗
B	✓	✗	✗
C	✗	✓	✓
D	✗	✗	✓

8. What controls the speed of chemical reactions in all living cells?

A. enzymes

B. hormones

C. ions

D. vitamins

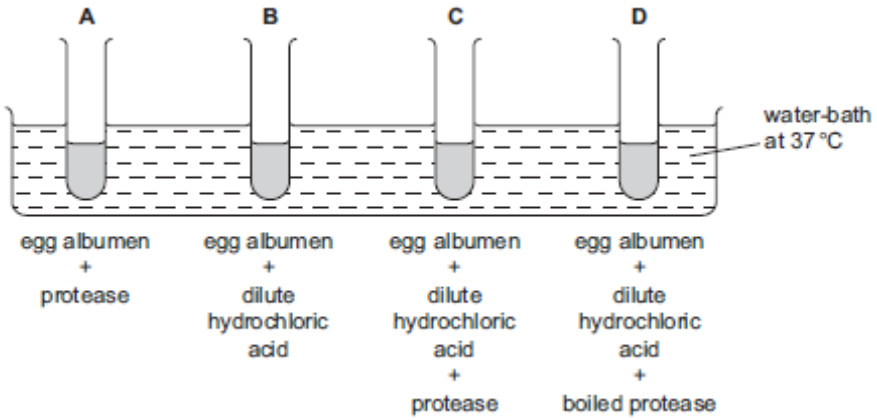
9. The diagram shows a specialized cell cut in half.

What does this diagram indicate about the structure of this cell?

A. the cell has a cell wall.
B. the cell is concave on each side
C. the cell is long and thin
D. the cell is red and carries oxygen

10. The diagram shows an experiment on the digestion of the protein in egg albumen by protease.

The protease was taken from a human stomach.
In which test-tube will the protein be digested most quickly?



11. Why does chewing food speed up digestion?

A. bacteria in the food are killed

B. food is mixed with protease

C. the surface area of the food is increased

D. the taste of food is improved

12. The table shows the results of food tests carried out on a fruit.

Test	Benedict's	Biuret	Ethanol	Iodine
Result	Positive	Positive	Negative	Negative

What did the fruit contain?

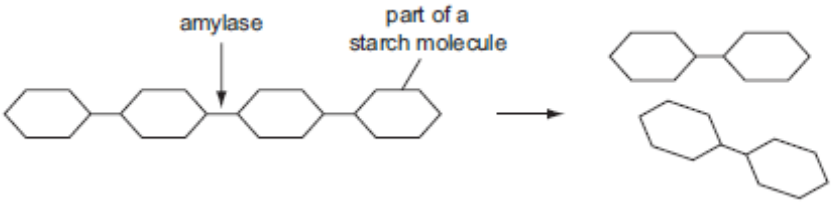
A. fat and reducing sugar

B. fat and starch

C. protein and reducing sugar

D. protein and starch

13. The diagram shows the action of amylase.



What is the function of the enzyme amylase?

A. breaks down the substrate into amino acids

B. changes the product into substrate

C. increases the rate of starch breaking down into glucose

D. increases the rate of starch breaking down into maltose

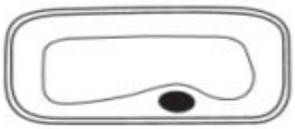
14. Some cells have cell walls.

Which statements are correct?

	In animals	In plants
A	Absent	Present inside cell membrane
B	Absent	Present outside cell membrane
C	Present inside cell membrane	Absent
D	Present outside cell membrane	Absent

15. Which diagram shows the appearance of a plant cell after it is placed in distilled water?

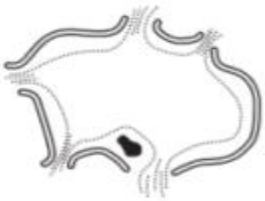
A



B

C

D



Q no. 2: The alimentary canal is adapted for chemical and mechanical digestion.

a. Explain how chemical digestion differs from mechanical digestion.

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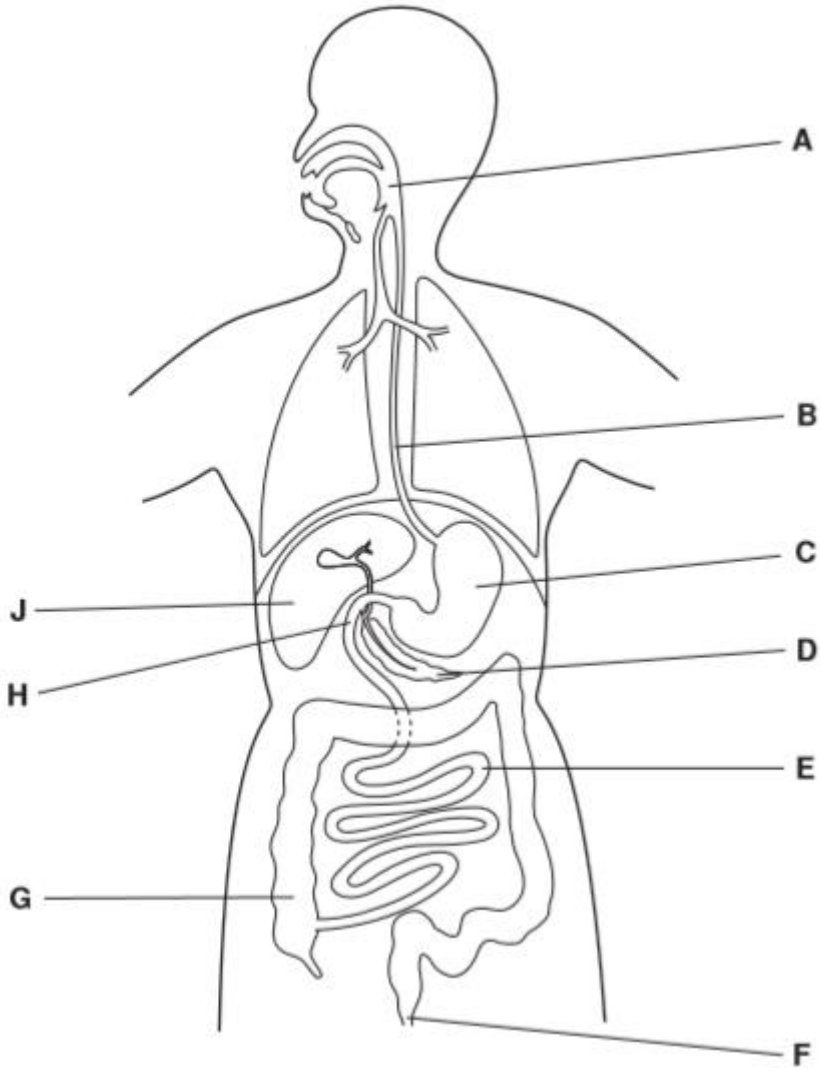
…… [3]

Fig 2.1 is a diagram of the human alimentary canal.



b. **Table 2.1** shows four functions of the alimentary canal.

Complete the table by:

- Naming the part of the system that carries out each of the functions;
- Using the letters from **Fig 2.1** to identify the part of the system named.

One row has been completed for you.

Table 2.1

Function	Name of part	Letter from Fig 2.1
Produces bile	**Liver**	**J**
Most soluble food is absorbed into the blood		
Indigestible food is egested		
Hydrochloric acid is produced		
Protease, Lipase and amylase are produced		

[4]

c. Some people develop gallstones, made of cholesterol, that accumulate in the gall bladder and the bile duct. Gallstones block the flow of bile.
Explain how gallstones can affect the digestion of fats.

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Total: [10]

Q no. 3: Fig 3.1 is a photomicrograph of a leaf of the tea plant, ***Camellia sinensis***.

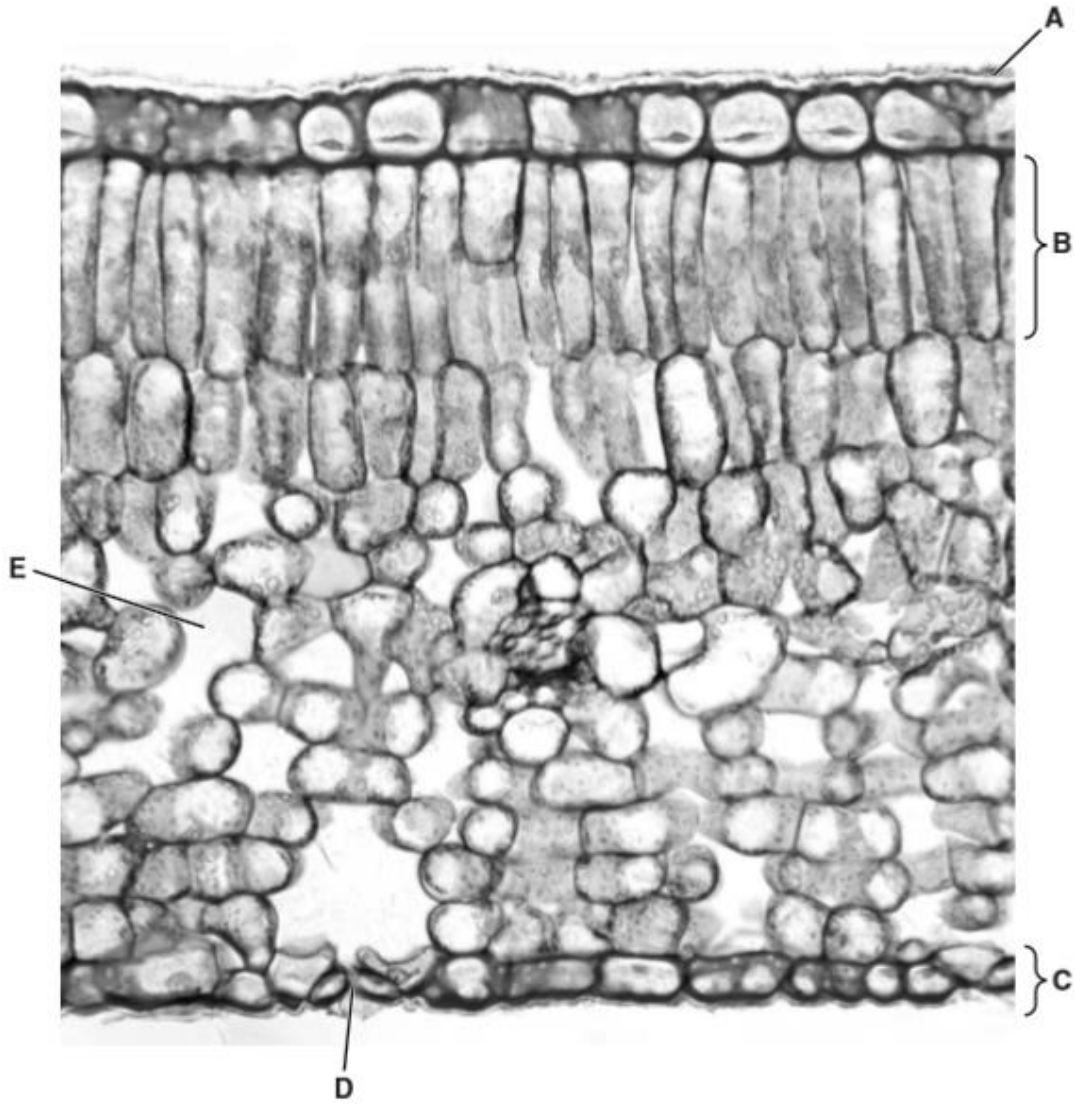

Fig 3.1

a. Name **A** to **E**.

A ……

B ……

C ……

D ……

E ……

Total: [5]

Q no.4: Some students investigated osmosis in raw potato sticks.

a. Define the term *osmosis*.

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…….…… **[3]**

b. The students measured the mass of four of the potato sticks using an electronic balance.

Fig 4.1 shows an electronic balance.

The students left each potato stick in one of four different liquids for 5 hours.

- Distilled water
- 0.1 mol per dm3 sodium chloride solution
- 0.5 mol per dm3 sodium chloride solution
- 1.0 mol per dm3 sodium chloride solution

After 5 hours they measured the mass again and calculated the change in mass.

i. Predict which of the liquids would cause the largest decrease in mass of a potato stick.

…… **[1]**

ii. The students dried the potato sticks with paper towels before putting them on the electronic balance.
Suggest why?

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…… **[1]**

c. After the experiment the student noticed that the potato stick with the lowest mass was soft and floppy.

Explain why the potato stick had become soft and floppy.

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…… **[3]**

d. The students followed the same experimental procedure with the boiled potato sticks and found no overall change in mass of any of the solutions.

Suggest why the mass of the boiled potato sticks remained the same.

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…… **[2]**

Total: [10]