

Name.....Signature.....

BIOLOGY.

553/1

(C.B.C)

S.2

Time. 1 ½ hrs.

BIOLOGY DEPARTMENT.

MID TERM 2 EXAMINATIONS 2022.

S.2

Time. 1 ½ hrs.

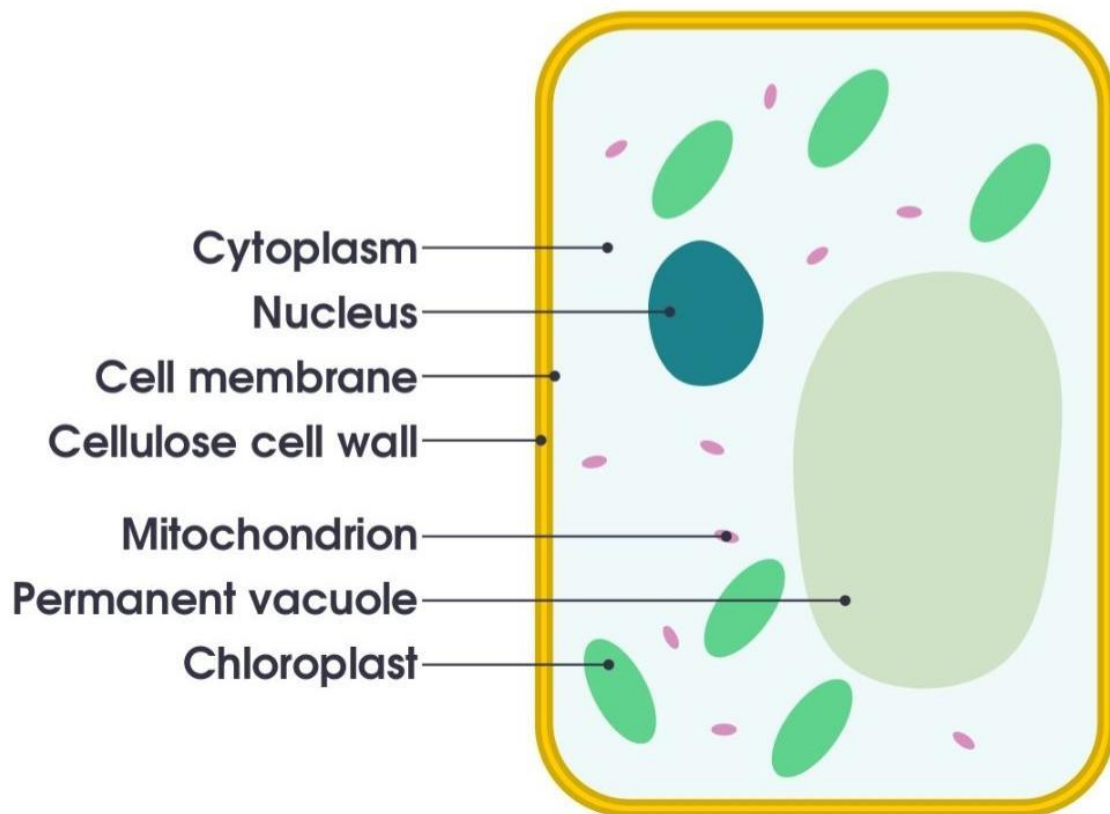
INSTRUCTIONS.

- Attempt all questions.*
- Present your work smartly.*
- Use of diagrams where necessary carries extra marks. Diagrams must be drawn only in pencils.*

For Examiner's use only.

Number	Marks.	Comment	Signature
1			
2			
3			
4			

1. (a) Usually microscopic in size; a cell is a smallest basic structural and functional unit of living matter. Below is a structure of a plant cell. Use it and answer the cell analogy that follows.



(a) Use the parts of a plant cell above and fill in the spaces in the cell analogy below. A **cell analogy** compares a cell and its parts to some thing else that is similar to a plant cell. (07marks)

Title of the cell analogy: IF A SCHOOL SETTING IS LIKE A PLANT CELL.

The hard exterior walls of a school building shield the school from strong weather conditions and external damage like aof a plant cell.

If you are late to school; you may find the doors locked. Doors are like selective openings as..... of a plant cell which only open at certain times to allow in some materials.

In a plant cell;operate as school store where some materials may be kept.

The main administration offices function asof the plant cell which directs and controls all the activities.

Theof the plant cell serve as the main school garden where food is manufactured from and theof the plant cell serve as the school kitchen (power house) where students get food energy from. is like the pathways and compound of the school where every one travels through and most activities take from.

(b)From the cell analogy in (a); state the function of the following parts of plant Cell.

(i) Cell wall. (01 mark)

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(ii) Mitochondrion. (01 mark)

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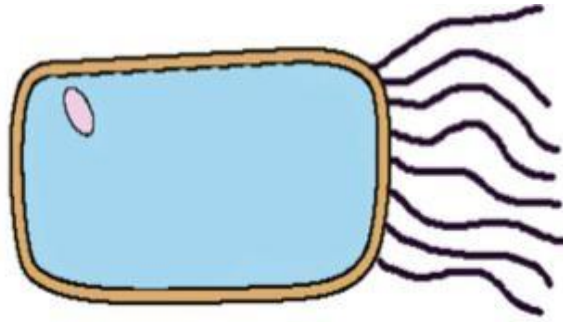
(iii) Chloroplasts. (01 mark)

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(C)From the cell analogy in (a); state the adaptation of the cell membrane to its function. (01 mark)

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(b)“ *The modifications in structure of specialised human cells are related to their functions* “ Below is a structure of one of the specialised human cell.



(i) Name the specialised human cell above.

(01 mark)

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(ii) State how the specialised human cell above is well adapted to its carry out its function. (02 marks)

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2. (a) Plant leaves are of different types with different kind of features. Below are structures of different kind of leaves.



Leaf P



Leaf Q

(i) State the type of leaves shown above. (01 mark)

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(ii) Give reason for your type of leaves shown above. (01 mark)

.....

(iii) Name leaf, (02 marks)

P

Q.....

(b) A group of S.2 students collected different kinds of leaves, which they examined; and recorded their observable features as in table below.

Leaf	Lamina	Venation	Margin	Stalk
R	Undivided.	Network	Serrated	Petiole
S	Divided	Network	Serrated	Petiole
T	Undivided	Pallarel	Entire	Sheath
W	Undivided	Network	Entire	Petiole

(i) Construct a dichotomous key to classify all the leaf specimens
In the table. (03 marks)

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- (ii) State any two primary functions of leaves to plants. (02 marks)

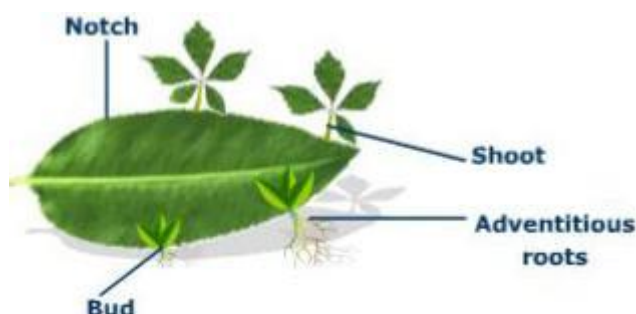
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- (c) Below is a structure of a bryophyllum leaf. Study it and answer the questions that follow.



- (i) State the function of the bryophyllum leaf as shown above.(01 mark)

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- (ii) From the structure above; give a reason to support your answer in (i)
(02 marks)

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3. While studying features of some insects; a group of S.2 students downloaded the diagram of a cockroach and printed it out; which they used to identify the features of external parts of a cockroach. Study the diagram and answer the questions that follow.



(a) From the diagram ;briefly describe the,

(i) Antenna of the cockroach.

(02 marks)

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(ii)Fore limbs of the cockroach.

(02 marks)

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(b) Using observable features; suggest why cockroaches live a successful life.

(03 marks)

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(c) State one way in each case how cockroaches are useful and harmful in life.

(i) How they are useful.

(01 mark)

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(ii)How they are harmful.

(01 mark)

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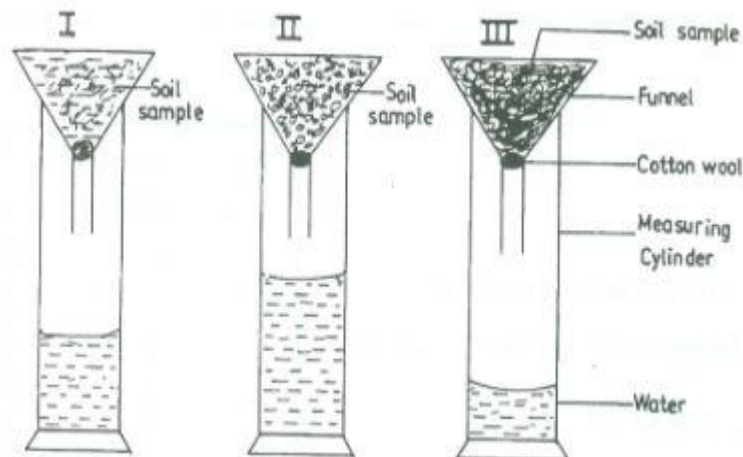
(d) Suggest one way how the dangers of cockroaches can be controlled in our homes.

(01 mark)

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4. In an experiment to determine the properties of different types of soil samples; the sets of apparatus were arranged. 250 cm³ of water was poured into each funnel containing a soil sample; The following observations were made at the end of the experiment and the amount of water that collects in the each measuring cylinder is noted. Study them and answer the questions that follow.



(a) State the aim of the experiment.

(01 mark)

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(b) With reasons; state the type of the soil sample used in,

(i) Experiment 1

(03 marks)

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(ii)Experiment 2.

(03 marks)

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(iii)Experiment 3.

(03 marks)

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End.

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