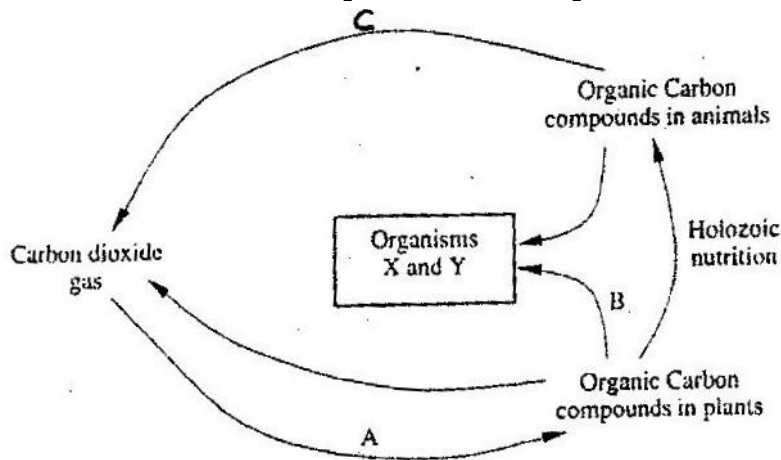


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- Beside the abdomen, name the other body part of members of Arachnida,
 - Name the bacteria found in the root nodules of leguminous plant
 - State the association of the bacteria named in (a) above with the leguminous plants.
 - State the function for co-factors in cell metabolism
 - Give one example of a metallic co - factor
 - During germination and early growth, the dry weight of the endosperm decreases while that of the embryo increases. Explain.
 - State two characters that researchers select in breeding programme.
 - In what form is oxygen transported from the lungs to the tissues?
 - Explain why the carrying of wild animals is higher than that for cattle in a given piece of land.
 - Which type of joint is found at the articulations of
 - Pelvic girdle and femur
 - Humerus and ulna?
 - Name two gaseous exchange structures in higher plants.
 - What happens to excess fatty acids and glycerol in the body?
 - Give an example of a sex - linked trait in humans on:
Y CHROMOSOME.
X CHROMOSOME.
12. The chart below represents a simplified carbon cycle.



(a) Name the process labeled A, B, and C

A

B

C

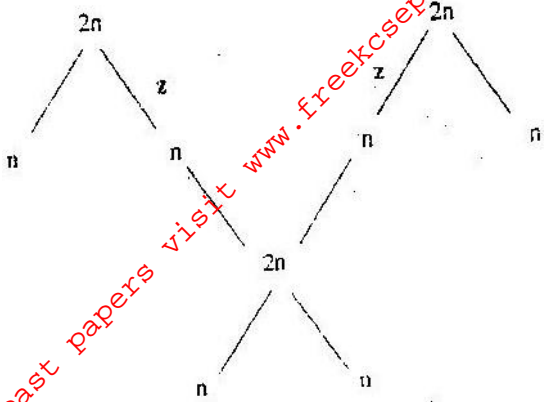
b) Name the organisms X and Y

X

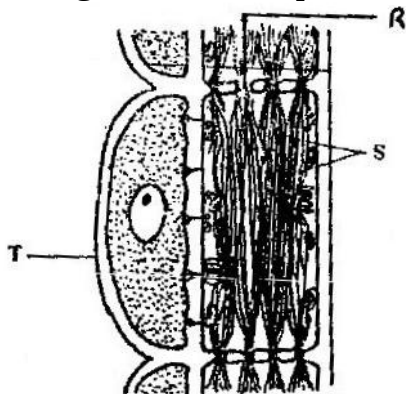
Y

c) State the importance of carbon cycle in nature

13. The chart below shows the number of chromosomes before and after cell division and fertilization in a mammal.



- a) What type of cell division takes place at Z
 b) Where in the body of a female does process Z occur
 c) On the chart, indicate the position of parents and gametes
 d) Name the process that leads to addition or loss of one or more chromosomes.
 e) State three benefits of polyploidy in plants to a farmer
14. a) What is organic evolution
 b) State two ways in which Homo sapiens differs from Homo habilis
 c) Distinguish between divergent and convergent evolution giving example in each case.
15. Ascaris lumbricoides in an example for an endo – parasite
 a) The name Ascaris refers to
 b) State the habitat of the organism
 c) State three ways in which the organism is adapted to living in its habitat.
16. The diagram below represents part of phloem tissue.



- a) Name the structures labeled R and S and the cell labeled T.
 R-
 S-
 Cell labeled T
- b) State the function of the structure labeled S
 c) Explain why xylem is a mechanical tissue

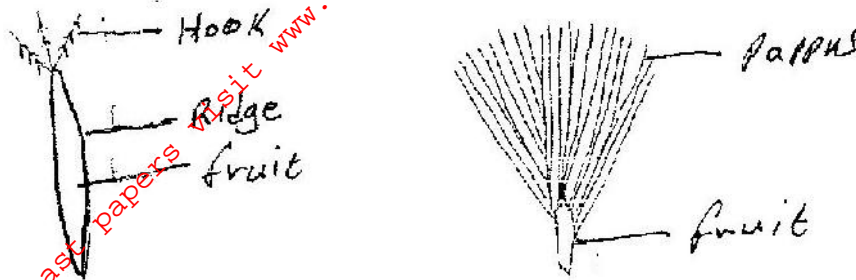
17. a) What structures are produced by sisal for vegetative propagation?
 b) Give a reason for grafting in plants
 c) State four advantages of vegetation propagation.

Time (minutes)	Glucose level in blood (Mg / 100cm ³)	
	X	Y
0	87	84
15	112	123
30	139	170
45	116	188
60	100	208
90	95	202
120	92	144
150	88	123

18. Two person X and Y drunk volumes of concentrated solution of glucose. The amount of glucose in their food was determined at intervals. The results are shown in the table below:
- On the grid provided, plot graphs of glucose level in blood against time on the same axes.
 - What was the concentration of glucose in the blood of X and Y at the 20th minute?
 $X = 120 + -3)$
 $Y = 140 + -3)$
 - Suggest why the glucose level in person X stopped rising after 30 minutes while it continued rising in person Y.
 - Account for the decrease in glucose level in person X after 30 minutes and person Y after 60 minutes (3 minutes)
 - Name the compound that stores energy released during oxidation of glucose.
 - Explain what happens to excess amino acids and development of plants.
19. Describe the role of hormones in the growth and development of plants.
20. a) Name three types of skeletons found in multicellular animals
 b) Describe how the cervical, lumbar and sacral vertebrae are suited to their functions.

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PRACTICAL MARKING SCHEME

1. You are provided with specimens labeled D₁, D₂, D₃ and D₄. Examine them
(a) Draw and label specimens D₁ and D₂



Magnification X3 – X7

- (b) Giving reasons state the agent or method of dispersal of the specimens.

Specimen	Agent or method of dispersal	Reasons
D ₁	Animal/ man	Presence of hooks acc. Hook like structures Rej. Spikes, spines, thorns e.t.c
D ₂	Wind	Presence, of pappus; light/ air like extensions
D ₃	Wind	Presence of wings; light/ wing like structures
D ₄	Explosive	Line of weakness along the ovary wall.

- (c) State the types of gynoeciums and placentation of specimen D₄.

Type of (i) Gynoecium Monocarpus
(ii) Placentation Marginal

2. You are provided with olive oil, liquids labelled L₁ and L₂ and an Irish potato. Label two test tubes A and B. Place 2 cm³ of water into each test tube. To test tube labelled A, add 8 drops of liquid L₁. Shake both test tubes. Allow to stand for five minutes.

- (a) (i) Record your observations
Test tube A
Oil is broken up into small droplets; which are dispersed/ spread/ throughout in liquid oil becomes emulsified/ debules/ tiny droplets; which forms a suspension/ becomes cloudy/ turbid/Forms a white ppt.
- Testy tube B
Oil floats on water / of mixing takes place/ Two separate/ immiscible layers are seen.
- (ii) Name the process that has taken place in test tube A.

Emulsification

- (iii) State the significance of the process named in (a) (ii) above to increase surface area.
- (iv) Name the digestive juice in humans that has the same effect on oil as liquid L₁
- I- Bile

Region of alimentary canal into which the juices is secreted
II- Duodenum

- (b) Label two test tubes C and D. place 2cm³ of liquid L₂ into each. Add a drop of iodine into each test tube.

(i) Record your observation

Blue black/ black/ bluish/ blue/ grayish/ purple blue

(ii) Suggest the identity of L₂

Starch

Cut out a tube whose sides are 1 cm from the Irish potato provided. Crush the cube to obtain a paste. Place the paste into a test tube labelled C. Leave the set up for at least 30 minutes.

(iii) Record your observation.

Contents of D remain unchanged/ blue black; blue black in C

Disappeared / fades light yellow/ brown/ orange

(iv) Account for the results in (b) (iii) above

Enzymes amylase; in potato breaks down starch; into sugars; that do not give blue- black colours with iodine.

- (c) (i) Cut another cube whose sides are 1 cm from the Irish potato.

Crush the cube. Place the crushed paste into test tube.

Carry out food test with the reagent provided.

Record the procedure and results

Procedure

Add equal amount of benedicts solution to the paste and boil; heat/ to boil/ warm.

Results

Grey/ yellow/ orange/ brown/ brick

- (ii) Account for the results in (c) (i) above

Starch in potato is converted to maltose/ reducing sugar/ simple sugar; by enzyme amylase/maltose (owwttt)

3. You are provided with specimens labelled Q and R. examine them.

(a) Giving reasons state the phylum of the specimens

Phylum Arthropoda

Reasons Exoskeleton/ chitinous

(b) (i) Name the class to which the specimen belong

Insecta.

(ii) State the features common to both specimens that are

Characteristics of the class mentioned in (b) (i) above.

- 3 body parts

- 3 pairs of legs

- A pair of antennae