

(c) Given below are sets of 14 biological terms that can be matched into pairs. One has been done for you as an example. Write out five other matching pairs.

Catabolic process, Mutation, Pancreas, Imbibition, Carbon dioxide, Hypermetropia, Guard cells, thyroid, gene, dry seeds, KOH, stomata, goitre, convex lens

Eg. Thyroid – goitre

[5]

(d) State whether the following statements are true or false. Correct the false statements.

1. Cells which have lost their water content are said to be deplasmolysed.
2. Plants like xerophytes have a number of adaptations to minimize the rate of respiration.
3. A variegated leaf will photosynthesise only in the green regions.
4. Cones are receptor cells in the retina of the eye sensitive to dim light.
5. The endocrine portion of the pancreas consists of groups of cells called islets of Calleja.

[5]

(e) Given below are five sets, with five terms each. In each set, one term is odd and cannot be grouped into the category to which the remaining four belong. Identify the odd one in each set and name the category to which the remaining four belong.

[5]

No.	Set	Odd	Category
1.	Mercurochrome, phenol, iodine, boric acid,		
2.	Seminal vesicles, prostate gland, testes, cowper's gland		
3.	Tuberculosis, BCG, rabies, cholera		
4.	Cretinism, Diabetes, Goitre, Myxoedema		
5.	Root pressure, flaccidity, capillarity, transpirational pull		

(f) Give the full form of the following abbreviations:

1. BCG
2. MTP
3. ACTH
4. NADP
5. DNA

[5]

(g) State the location of the following:

1. Fovea centralis
2. Seminal vesicles
3. Ribosomes
4. Lenticels
5. Corpus callosum

[5]

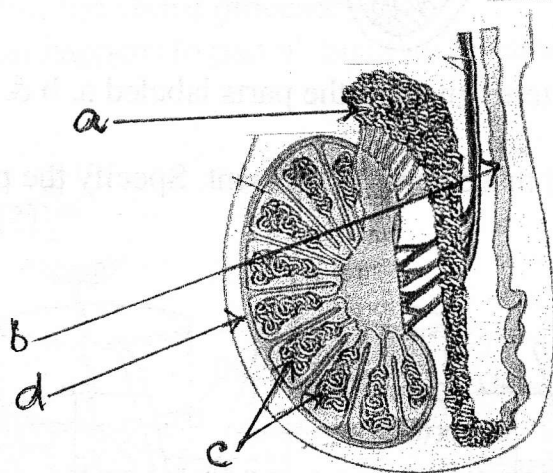
(h) Differentiate between the following pairs on the basis of what is given in brackets:

1. Monohybrid and dihybrid ratio (definition)
2. Plant cell and animal cell (cytokinesis)
3. Insulin and Glucagon (function)
4. Innate immunity and acquired immunity (definition)
5. Cerebrum and cerebellum (function)

[5]

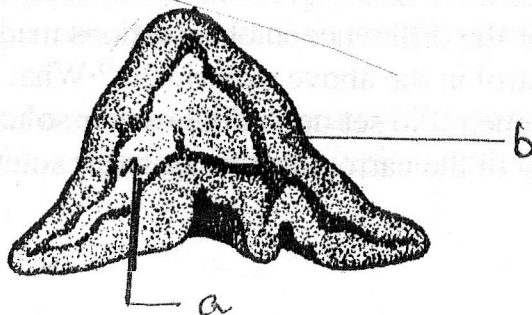
SECTION II

Q. 2. (a)



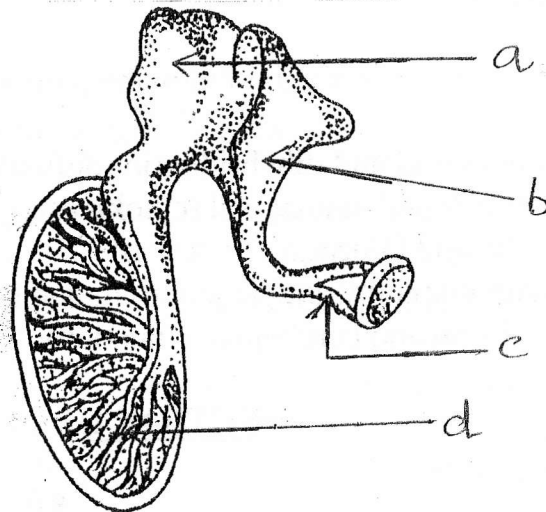
1. Label parts a, b, c, d.
2. Where are the interstitial cells located? State their function.
3. Where is part 'd' located – (i) in the embryonic stage?
(ii) After birth?
4. Draw a neat-labelled diagram of the male gamete. [6]

(b)



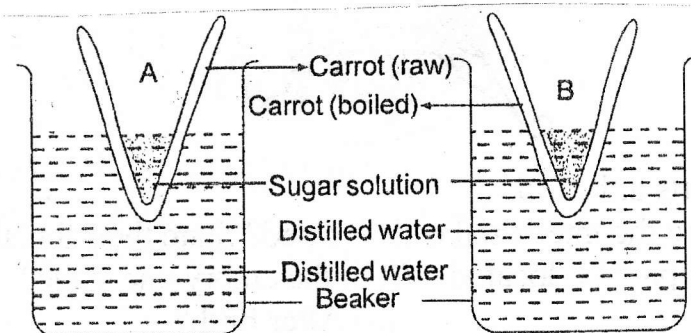
1. Identify the above gland. State its location.
2. Label parts a & b.
3. What is the function of part a?
4. What diseases are caused by the hyosecretion and hypersecretion of part b? [4]

Q. 3. (a)



1. Label parts a, b, c, d.
2. What is the collective term given to the parts labeled a, b & c? State its function.
3. Name the organ where these parts are present. Specify the part of the organ. [5]

(b)



1. What will you observe in set up A and set up B after an hour or so?
2. Give reasons for the difference in observations made in A and B.
3. What is the control in the above experiment? What is its use?
4. What would happen if in set up A dilute sugar solution was placed inside the cavity of the carrot and strong sugar solution was kept in the beaker? [5]

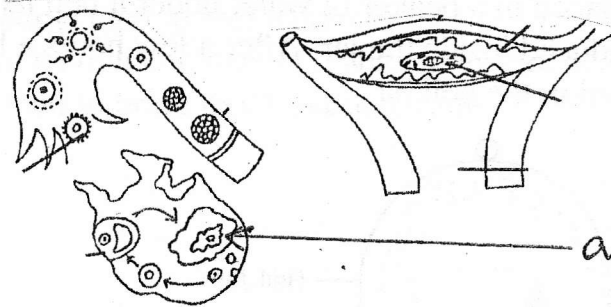
Q. 4. (a) 1. Show what you will get in F_1 and F_2 generations in the following crosses:

(i) Pure tall \times Pure dwarf

(ii) Heterozygous tall \times Pure tall

2. State Mendel's Law of Segregation. [5]

(b)

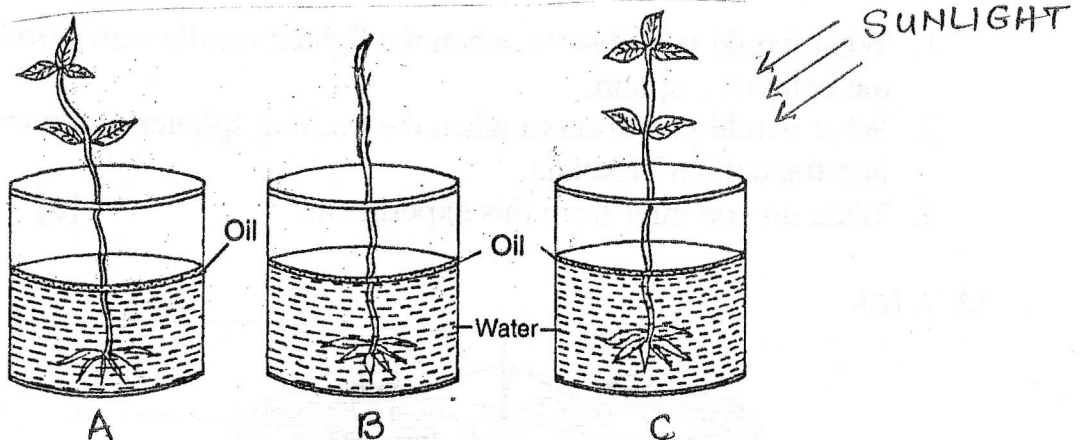


1. Mention the four processes taking place in the diagram.

2. Define the above processes.

3. What happens to part a? State its function. [5]

Q. 5. (a)



1. In which plant, A, B or C would the water move up fastest?

2. In which plant, A, B or C would the water move up slowly?

3. Why was the water covered with a layer of oil?

4. What is being proved by this experiment?

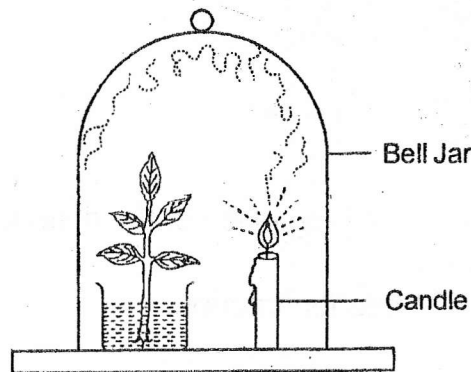
5. Define the process taking place in the above experiment. [5]

(b) If a colour blind man marries a woman with normal vision, what will be the visual expression of their children? Explain with the help of a Punnett square. [5]

Q. 6. (a)

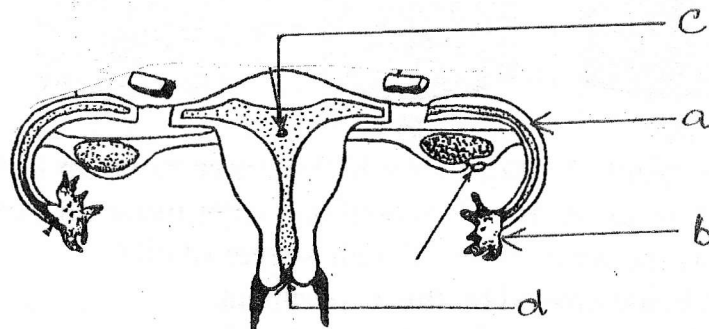
1. Draw a neat labeled diagram of metaphase (showing a cell with 3 chromosomes) in an animal cell.
2. Name the next phase. State the changes taking place in it.
3. What is the resting phase called? [5]

(b) The following experiment was performed in the presence of sunlight. A cut leafy shoot was placed in a beaker of water under a bell jar. A lighted candle was then introduced inside the jar. After a few hours a burning splinter was introduced in the bell jar.



1. What would you observe when the lighted candle was introduced into the bell jar? Explain.
2. What would you observe when the burning splinter was introduced into the bell jar? Explain.
3. What do you infer from this experiment? [5]

Q. 7. (a)



1. Label the parts a, b, c, d.
2. What does the above diagram depict?
3. Name the corresponding surgical method carried out in males.
4. Name two barrier methods of contraception. [5]

(b) Give reasons: (Any five)

1. Traits like baldness or hypertrichosis are found only in men.
2. Plants in a cultivated field may wilt or die, if chemical fertilizers are added without irrigating the field.
3. You don't enjoy watching a movie from very close to the screen in a cinema hall.
4. Older people tend to feel more cold.
5. Injury to medulla oblongata results in instant death.
6. Forests tend to bring more frequent rains. [5]

Q. 1. (a) Choose the correct alternative:

1. Karyokinesis leads to division of

- (i) pollen mother cell (ii) cytoplasm (iii) centromere (iv) nucleus

2. The root system of higher plants absorbs water from the soil when the cell sap is found with _____ solution.

- (i) isotonic (ii) hypertonic (iii) hypotonic (iv) pure water

3. During photosynthesis

- (i) light energy is converted into chemical energy.
 (ii) ATP is broken up into ADP and inorganic phosphate.
 (iii) Chlorophyll molecules are raised to a higher energy level.
 (iv) Carbohydrates are synthesised from carbon dioxide.

4. During guttation, the elimination of excess water from plants takes place through

- (i) stomata (ii) lenticels (iii) hydathodes (iv) cuticle

5. The tough, non-elastic, white fibrous coat that surrounds the eyeball is

- (i) sclera (ii) cornea (iii) conjunctiva (iv) choroid [5]

(b) Name the following:

1. The main substance forming the walls of the leaf cells.
2. Unicellular cilia of the epidermis in root.
3. The statistical study of human population.
4. The organization that arranges ambulance services in emergencies.
5. The chromosomes that do not determine the sex of an organism. [5]