



BIOLOGY

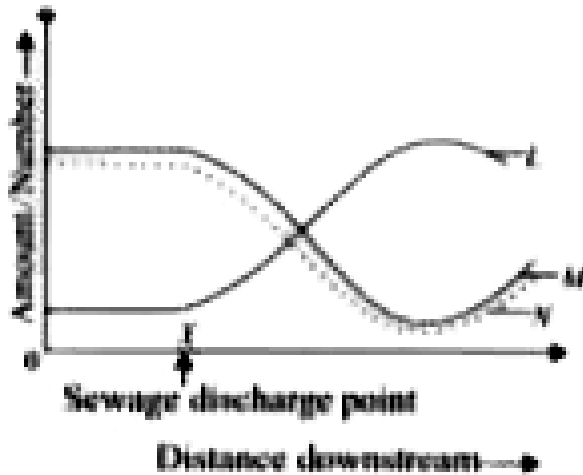
BOOKS - HT Olympiad Previous Year Paper

NSO QUESTION PAPER 2019-20 SET A

Science

1. The given graph shows changes in various factors (L, Mand N) present in a water body

after the sewage is discharged at a point X.



Refer to the given graph and select the incorrect statement regarding L, M and N.

A. L could be bacteria which increase tremendously in number due to addition of sewage waste.

B. M corresponds to biological oxygen demand which decreases due to the accumulation of sewage in water.

C. N could be aquatic animals like fish, which die on account of non-availability of dissolved oxygen.

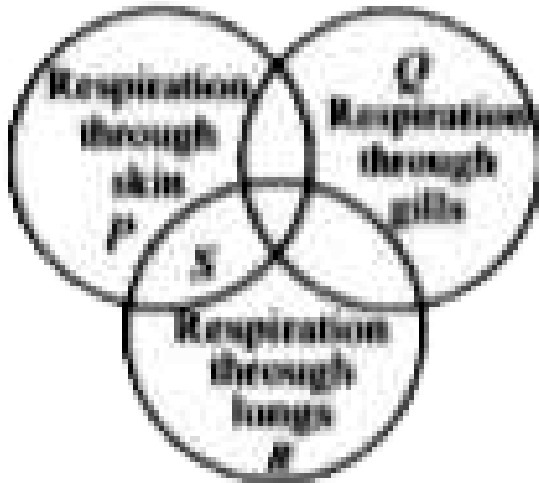
D. Both A and C

Answer: B



Watch Video Solution

2. Identify P, Q, R and S in the given Venn diagram and select the correct option.



A. P - Frog, Q - Grasshopper, R - Spiny

anteater, S - Salamander

B. P - Monkey, Q - Salmon, R - Crocodile, S -

Platypus

C. P - Earthworm, Q - Salmon, R - Dolphin, S -

Frog

D. P - Hydra, Q - Rohu, R - Trout, S - Lizard

Answer: C



Watch Video Solution

3. Match column T with column II and column III and select the correct option from the given

codes.

	Column I (Disease)	Column II (Causative agent)	Column III (Mode of transmission)	
	<i>P</i> . Typhoid	<i>a</i> . Bacteria	1. Contaminated water	
	<i>Q</i> . Measles	<i>b</i> . Virus	2. Wound	
	<i>R</i> . Polio	<i>c</i> . Protozoa	3. Air	
	<i>S</i> . Dysentery		4. Direct contact	
			5. Contaminated food	
	<i>P</i>	<i>Q</i>	<i>R</i>	<i>S</i>
A.	<i>b</i> , 1	<i>b</i> , 3, 4	<i>a</i> , 2	<i>a</i> , 1
B.	<i>a</i> , 1	<i>b</i> , 5	<i>b</i> , 2, 4	<i>c</i> , 1, 5
C.	<i>a</i> , 1, 5	<i>b</i> , 3, 4	<i>b</i> , 1, 5	<i>c</i> , 1, 5
D.	<i>b</i> , 1	<i>b</i> , 2, 4	<i>a</i> , 1, 3	<i>c</i> , 1, 5



[Watch Video Solution](#)

4. Pihu wanted to study two different plants X and Y among many plants that were planted in her garden. She watered them regularly and took proper care of them. Both plants

flowered but after some days Pihu noticed that only plant X yielded fruits whereas fruit setting was absent in plant Y. What could be the probable reason for this?

- A. Plant X is insect pollinated but plant Y is wind pollinated.
- B. Plant X is dioecious whereas plant Y is monoecious.
- C. Plant Y present in Pihu's garden could be dioecious male plant.

D. Plant X bears only unisexual male flowers
whereas plant Y bears bisexual flowers.

Answer: C



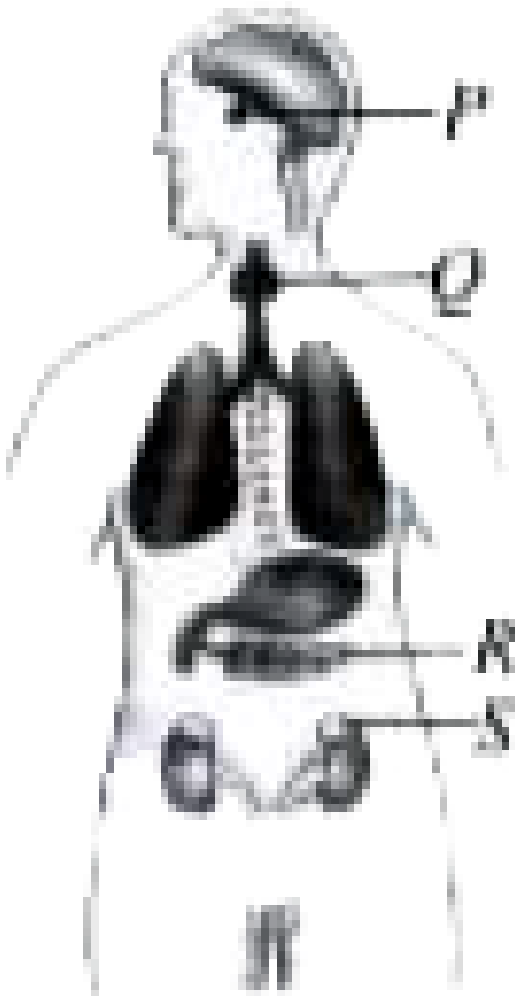
Watch Video Solution

5. The given figure shows positions of few endocrine glands in human body.

Two patients, Karan and Ali recently visited an endocrinologist regarding their health issues.

Doctor examined them and prepared a chart

shown here to keep a record of their illness
and monitor their health.



Patient's name	Disease symptoms
Karan	Swollen neck
Ali	Large quantities of sugar in blood and urine

Refer to the given figure and chart and select the correct statement regarding health condition of Karan and Ali.

A. Karan is suffering from goitre which is caused due to hyposecretion of a hormone by gland Q.

B. Ali is suffering from diabetes which is caused due to hyposecretion of a hormone by gland R.

C. Karan is suffering from albinism which is caused by hyposecretion of a hormone by gland P and Ali is suffering from diabetes which is caused by hypersecretion of a hormone by gland S.

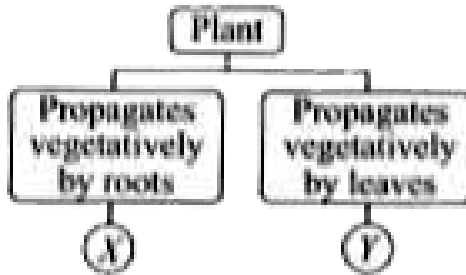
D. Both A and B

Answer: D



Watch Video Solution

6. Study the given flow chart and select the option that correctly identifies X and Y.



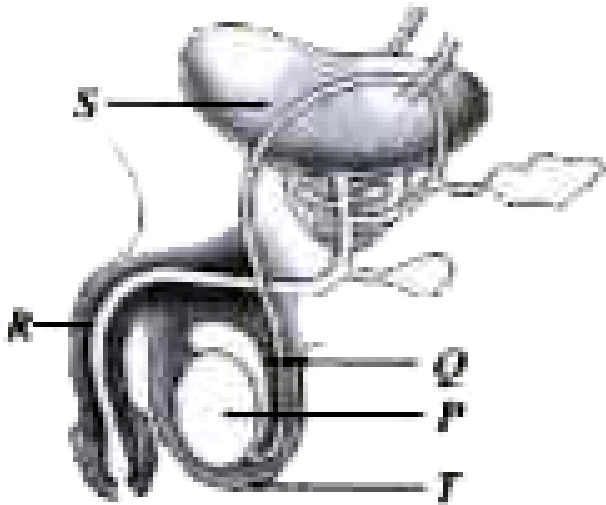
- | | X | Y |
|----|------------------|----------------------|
| A. | <i>Dahlia</i> | <i>Bougainvillea</i> |
| B. | <i>Asparagus</i> | <i>Begonia</i> |
| C. | <i>Begonia</i> | Onion |
| D. | Sweet potato | Strawberry |



Watch Video Solution

7. Identify the parts labelled as P-T in the given figure and select the correct statement

regarding them.



A. The part labelled as P produces male gametes and the part labelled as S produces androgen.

B. The sperms collect and mature in the part R.

C. The parts P and R have no role in reproduction.

D. The part T is located outside the abdominal cavity and protects parts P and Q inside it.

Answer: D



Watch Video Solution

8. Refer to the given table and select the correct statement regarding plants P, Q and R.



A. Plant P could possess special root-like structures called haustoria for absorption of nitrogen from atmospheric air.

B. Plant Q could catch and digest insects and show completely heterotrophic mode of nutrition.

C. R could be *Nepenthes* or *Rafflesia*.

D. P could be *Nepenthes* whereas Q could be *Cuscuta*.

Answer: D



Watch Video Solution

9. Refer to the given food web.



If a non-biodegradable insecticide known as DDT was sprayed onto the pine tree, in which

of the following organisms will most of the DDT eventually accumulate?

A. Golden-crowned kinglet

B. Snake

C. Red-tailed hawk

D. Oak acorns

Answer: B



Watch Video Solution

10. Refer to the given paragraph where few words have been italicised.

Hormones are produced by organs called endocrine glands. These are ductless glands.

Very small quantity of different hormones is required by our body. Thyroxine is secreted when we are stressed or excited. Liver regulates the sugar metabolism in the body by its hormone insulin. Pituitary gland secretes melatonin while parathyroid glands secrete calcitonin.

Select the incorrect option regarding these.

- A. Thyroxine should be replaced by adrenaline.
- B. Liver should be replaced with pancreas.
- C. Positions of pituitary and parathyroid should be interchanged.
- D. pituitary should be replaced by pineal.

Answer: C



Watch Video Solution

11. Supriya wants to carry out a fair test to find out how fast water can pass through equal quantity of four different types of soil. She sets up the experiment as shown in the given figure. She uses a stopwatch to measure the time taken by water to pass through each kind of the soil.



Which type of soil is suitable to grow paddy?

A. S

B. P

C. Q

D. R

Answer: D



Watch Video Solution

Achievers Section

1. Refer to the given dichotomous key. Identify P -T and select the correct statement regarding them.

I. (a) It is a unicellular organism. - Go to II

(b) It is a multicellular organism. - Go to IV

II. (a) It possesses well organised nucleus. - Go to III

(b) It lacks well organised nucleus. - P

III. (a) Nutrition is parasitic. - Q

(b) Nutrition is mixotrophic. - R

IV. (a) It possesses chlorophyll. - S

(b) It lacks chlorophyll. - T

A. P could be slipper animalcule.

B. R could be Euglena which possesses cilia that help in movement.

C. Q could be Plasmodium which causes malaria or it could be Entamoeba which causes amoebic dysentery in humans.

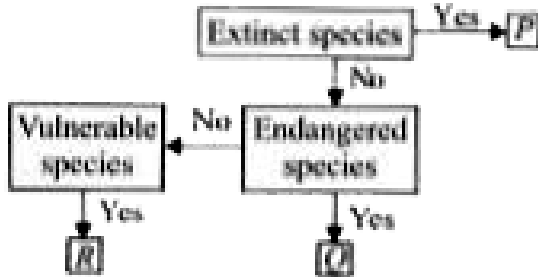
D. S could be an algae like Chlamydomonas whereas T could be a scavenger like vulture or a decomposer like Giardia.

Answer: C



Watch Video Solution

2. Identify P, Q and R in the given flow chart and select the correct option regarding them.



A. P - Passenger pigeon, Q - Red panda, R -

Humpback whale

B. P - Snow leopard, Q - Ivory-billed

woodpecker R - Bengal tiger

C. P - Asian elephant, Q - Indian rhinoceros

R - Gee's golden langur

D. P - Sea mink, Q - Lion-tailed macaque, R -

Nilgiri langur

Answer: D



Watch Video Solution