



BIOLOGY

BOOKS - HT Olympiad Previous Year Paper

FOOD AND ITS COMPONENTS

Multiple Choice Questions

1. Reena took some moong seeds and soaked them overnight in water. Next day, after

draining out the water, she wrapped the seeds in a wet cloth. After one day, she observed a small white structures growing out of the seeds. These small white structures will develop into

A. Stems

B. Leaves

C. Roots

D. Flowers

Answer: C



2. Select the option with the correct sequence of words to fill the blanks in the given sentences.

(a) Deficiency of vitamin C in body causes a disease known as ___(i)___.

(b) Carrots and pumpkins are rich sources of vitamin ___(ii)___

(c) Pellagra is caused by the deficiency of vitamin ___(iii)___ in the diet.

(d) Deficiency of ___(iv)___ leads to rickets in

children

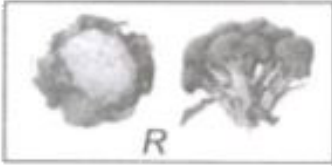
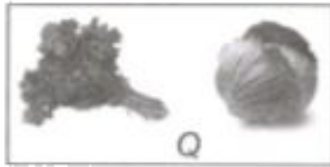
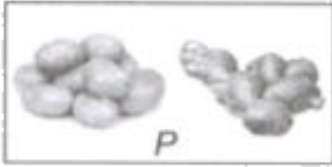
	(i)	(ii)	(iii)	(iv)
(A)	Rickets	D	B ₁₂	Magnesium
(B)	Scurvy	A	B ₃	Vitamin D
(C)	Rickets	C	B ₁	Calcium
(D)	Scurvy	B	K	Protein



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3. Green plants are known as producers. They prepare more food than they need. The extra food get stored in different parts of the plant. Identify the part of the plant from which the following food items (P, Q, R and S) are

obtained and select the correct option



- | | <i>P</i> | <i>Q</i> | <i>R</i> | <i>S</i> |
|-----|----------|----------|----------|----------|
| (A) | Stem | Leaf | Flower | Seed |
| (B) | Root | Flower | Leaf | Fruit |
| (C) | Fruit | Leaf | Seed | Flower |
| (D) | Leaf | Fruit | Stem | Root |



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4. Read the following passage carefully. L helps to maintain strong eyesight and healthy skin. M is required for normal growth of bones in

children. N is essential for proper functioning of muscles and nerves. O is needed for natural clotting of blood. Identify L, M, N and O and select the incorrect statement regarding them.

A. M is produced when the skin is exposed to sunlight.

B. N is a mineral, deficiency of which causes spasms, poor digestion, anxiety and sleeplessness.

C. Cod liver oil is a good source of both L and O.

D. O is synthesised in our body by bacteria present in the gut.

Answer: C



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5. Following are the properties of four minerals P, Q, R and S. Identify them and select the correct option.

P: It is required for proper functioning of thyroid gland.

Q: It helps in maintaining body's water balance.

R: It is important for haemoglobin formation

S: It strengthens bones and teeth and helps in blood clotting.

A. Deficiency of P causes dryness of eyes and inflammation of tongue.

B. Q is also required for the proper functioning of nervous system.

C. Deficiency of R causes goitre.

D. S also helps to fight infections and keeps skin and mouth healthy.

Answer: B



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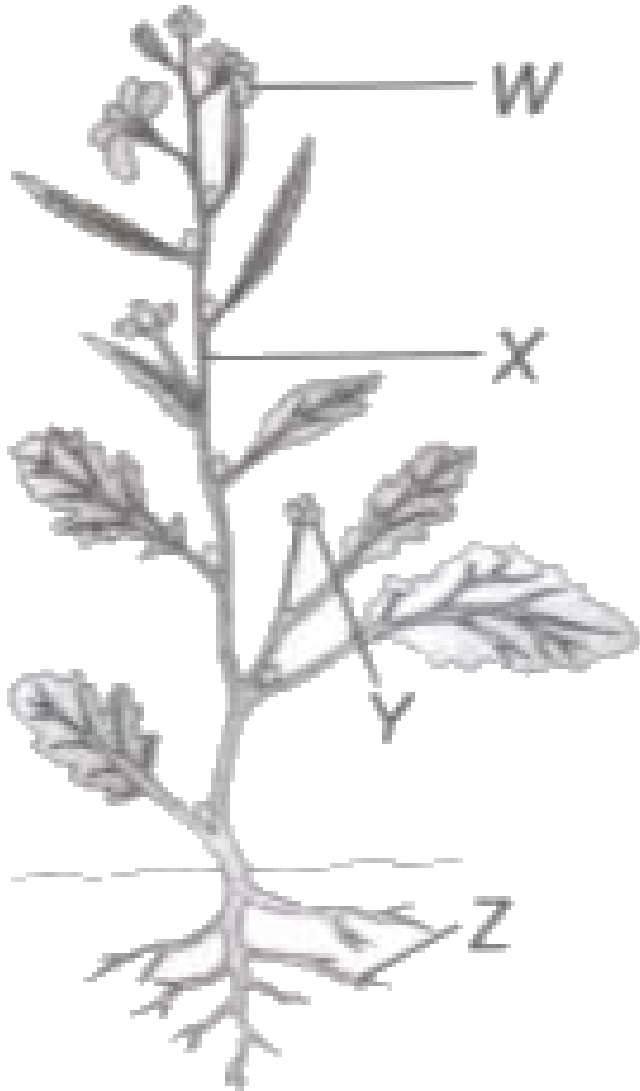
6. We eat different parts of plants as food.

Refer to the given figure of a typical plant and

select the option that correctly matches the

labelled parts (W, X, Y and Z) with examples of

plants in which they are edible.



A. W-Tapioca, X-Sweet potato, Y-Pepper, Z-

Turnip

B. W-Broccoli, X-Turmeric, Y-Clove, Z- Radish

C. W - Cabbage, X-Onion, Y - Pepper, Z-

Carrot

D. W-Broccoli, X-Radish, Y-Asparagus, Z-

Brinjal

Answer: B



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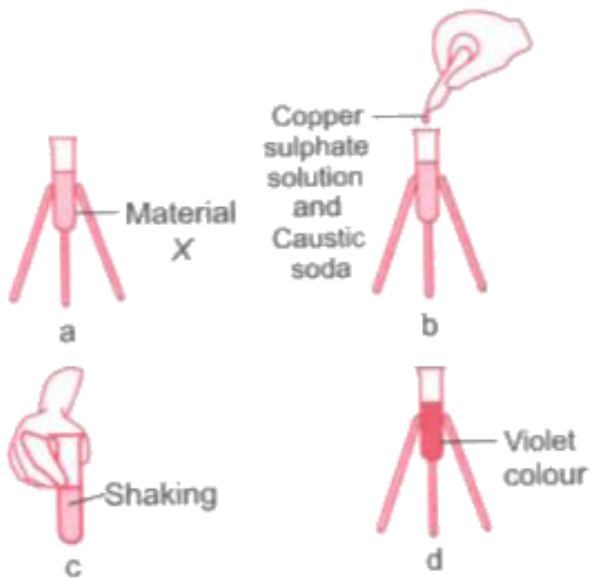
7. Select the incorrect match.

	Mineral	Deficiency disease
(A)	Iron	Anaemia
(B)	Calcium	Rickets
(C)	Iodine	Goitre
(D)	Sodium	Beriberi



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8. Observe the given experimental figures carefully. What does this experiment prove?



- A. Material X contains protein.
- B. Material X contains carbohydrate
- C. Material X contains fat
- D. Material X contains iodine.

Answer: A



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9. Consider the following statements (i)-(v) and select the option that correctly identifies true (T) and false (F) ones.

(i) Sucrose is the sugar found in milk.

(ii) Saturated fats are solid at room temperature while unsaturated fats are liquid at room temperature.

(iii) Fat soluble vitamins are not stored in our body and need to be regularly supplied through food.

(iv) Vitamin C is very sensitive to heat and is easily destroyed during cooking.

(v) Our body can make two vitamins, i.e., vitamin K and vitamin D.

	(i)	(ii)	(iii)	(iv)	(v)
(A)	T	F	F	T	T
(B)	F	T	F	T	T
(C)	T	T	F	T	T
(D)	F	F	F	T	T



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10. Which of the following options contains foods obtained from stems of the plant?

A. Spinach, Cabbage, Beetroot

B. Potato, Mango, Broccoli

C. Colocasia, Onion, Garlic

D. Radish, Turnip, Sugarcane

Answer: C



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11. A child is suffering from a deficiency disease. He shows the following symptoms:

(i) Oedema of legs and pot belly

(ii) Diarrhoea

(iii) Patches on skin

(iv) Irritability

Identify the deficiency disease and the deficient nutrient in the child's body.

	Deficiency disease	Deficient nutrient
(A)	Kwashiorkor	Protein
(B)	Goitre	Iodine
(C)	Anaemia	Iron
(D)	Rickets	Vitamin D



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12. Refer to the given groups (i) - (iii). Each group contains an odd member. Identify the odd ones in each group and select the correct option.

(i) Calcium, Potassium, Iodine, Sodium

(ii) Vitamin A, Vitamin B, Vitamin D, Vitamin E

(iii) Oil, Cheese, Butter, Ghee

	(i)	(ii)	(iii)
(A)	Calcium	Vitamin D	Butter
(B)	Iodine	Vitamin B	Cheese
(C)	Sodium	Vitamin E	Oil
(D)	Potassium	Vitamin A	Ghee



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13. Aarushi took two food samples X and Y in separate test tubes. She added 2-3 drops of Benedict's solution in food sample X and heated it while she added two drops of copper sulphate solution and few drops of caustic soda solution in food sample Y and kept the setup for few minutes. She observed that sample X turned brick-red while sample Y turned purple.

Which of the following is correct regarding X and Y?

A. X consists of protein while y consists of starch.

B. X consists of sugar while Y consists of protein.

C. X consists of starch while Y consists of protein

D. X consists of sugar while Y consists of starch.

Answer: B



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14. Study the given table.

Vitamin	Source	Deficiency
B ₃	(i)	Pellagra
(ii)	Carrot	Night blindness
D	Sunlight	(iii)
C	Amla	(iv)

Select the correct option for (i), (ii), (iii) and (iv).

- | | (i) | (ii) | (iii) | (iv) |
|-----|--------------|------|---------|---------|
| (A) | Milk | A | Scurvy | Rickets |
| (B) | Milk | E | Rickets | Scurvy |
| (C) | Whole grains | A | Rickets | Scurvy |
| (D) | Whole grains | A | Scurvy | Rickets |



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15. Which of the following statements is/are incorrect?

(i) Fats deposited in our body act as shock absorbers and protect us from injury.

(ii) Kwashiorkor is caused by deficiency of protein, carbohydrate and fat. Roughage neither releases energy nor helps in tissue or body building.

(iv) Starch containing food items turn bluish black in colour on undergoing iodine test.

A. (i) and (ii) only

B. (ii) only

C. (iii) only

D. (ii) and (iv) only

Answer: B

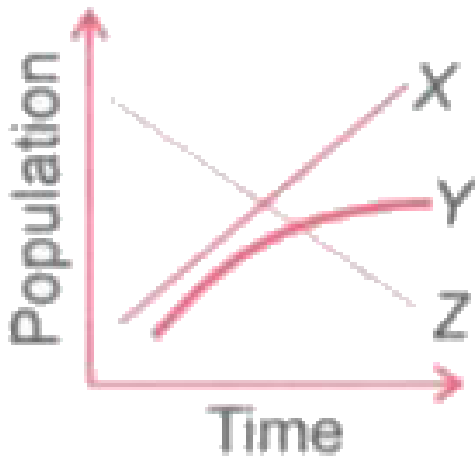


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Achievers Section Hots

1. Small populations of three types of animals X, Y and Z were kept in captivity. Plenty of

plants were present in that area. The change in the population of these organisms with time was plotted in the graph as shown here.



Which of the following conclusion is incorrect regarding their eating habits?

- A. X could be a carnivore that feeds on Z but not on Y.

B. Both X and Y could be herbivores and Z could be a carnivore whose population declines as it does not prey on both X and Y.

C. If X and Y are herbivores, then X has higher reproductive potential than Y.

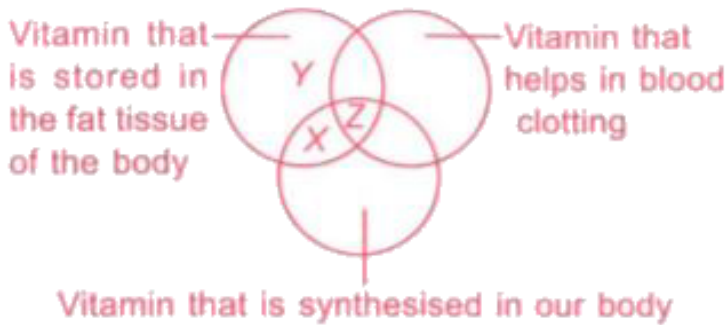
D. None of these

Answer: D



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2. Refer to the given Venn diagram and select the correct statement regarding X, Y and Z.



A. Deficiency of X and Y causes night blindness and scurvy, respectively.

B. X helps in the normal growth of bones in children while Y keeps reproductive system healthy.

C. Deficiency of Z causes pellagra.

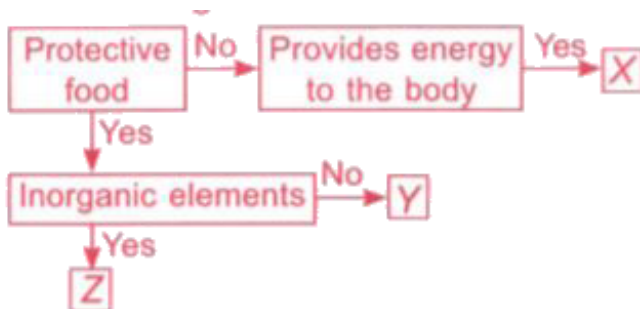
D. Y is a group of several vitamins (i.e., vitamin complex).

Answer: B



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3. Refer to the given flow chart.



Identify X, Y and Z and select the incorrect statement regarding them.

A. X is formed in leaves of plants during photosynthesis.

B. Z is essential for the normal functioning of thyroid gland.

C. Consumption of excess of Y can cause marasmus.

D. Z helps in formation of haemoglobin in the body.

Answer: C



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4. Identify the figures (W- Z) and select the incorrect statement regarding these.



W



X



Y



Z

A. W is a modified tap root which serves as a storage organ.

B. Edible part of X is the same as edible part of onion.

C. Y is a fruit which is eaten as a vegetable.

D. Edible part of Z is the same as the edible part of carrot.

Answer: D



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5. Refer to the given dichotomous key and select the correct option.

I. (a) It is categorised as energy giving food . -

Go to II

(b) It is categorised as protective food. - Go to

III

II. (a) It is soluble in water . - P

(b) It is insoluble in water. - Q

III. (a) It is needed for clotting of blood . - R

(b) It helps in formation of haemoglobin. - S

A. Q could be glucose which is instant source of energy.

B. Deficiency of S causes anaemia characterised by pale body colour, body fatigue, etc.

C. Deficiency of R causes osteoporosis in adults while deficiency of S causes goitre in adults.

D. P could be butter which gives an oily patch on the filter paper.

Answer: B



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