

6. Trees of the genus *Pinus* are placed in higher groups compared to those of *Marsilea* genus because of the presence of one of the following features.

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| 1. Differentiated plant body | 2. Presence of seed |
| 3. Presence of conducting tissue | 4. Presence of flowers |

7. Earth has vast diversity of animals. Each animals is unique in it-self and possesses certain distinguishing features. Match the animals listed in column A with their characteristic featur's given in column B and column C and identify the correct match.

Column ' A '	Column ' B '	Column ' C '
A. Pheretima	(a) Book gills	(i) Coxal gland
B. Palaemon	(b) Colleterial gland	(ii) Chloragogen cells
C. Palacmnaeus	(c) Book lungs	(iii) Green gland
D. Periplaneta	(d) Calciferous glands	(iv) Unicose glands

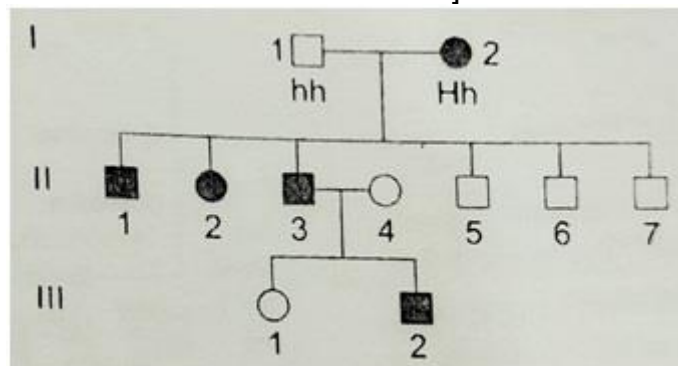
- A - (a) - (i); B - (b) - (ii); C - (c) - (iii); D - (d) - (iv)
- B - (b) - (iii); B - (d) - (iv); C - (a) - (i); D - (c) - (ii)
- A - (c) - (iv); B - (a) - (i); C - (b) - (ii); D - (d) - (iii)
- A - (d) - (ii); B - (c) - (iii); C - (a) - (iv); D - (b) - (i)

8. What will happen to cells of cyanobacteria if they are placed in purified water?

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|---------------------------------------|----------------------------------|
| 1. They will swell and burst | 2. They will shrink |
| 3. They will swell but will not burst | 4. They will not show any change |

9. Hutington' s disease is an autosomal disorder characterized by movement, cognitive and psychiatric disorders. Study the given pedigree and identify the genotype of II - 3 and II - 4.

[Note : Solid squares/circles represent affected individuals and empty squares / circles denote unaffected normal individuals.]



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|-------------------------|-------------------------|
| 1. II-3 : Hh; II-4 : hh | 2. II-3 : HH; II-4 : Hh |
| 3. II-3 : HH; II-4 : hh | 4. II-3 : Hh; II-4 : HH |

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10. When a tall plant with round seeds was hybridized with a dwarf plant with wrinkled seeds; all offspring in F1 generation were tall plants that produced round seeds. As per Mendel's law of independent assortment, what percent of offspring will produce wrinkled seeds if F1 is crossed with tall plant producing wrinkled seeds?
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|-------|--------|
| 1. 10 | 2. 20 |
| 3. 50 | 4. 100 |
11. What would happen to earth if carbon dioxide was absent from its atmosphere?
1. The earth would be a pleasant place.
 2. Absence of carbon dioxide would not make any difference to earth.
 3. Earth would be devoid of life
 4. Earth would have only animal life.
12. The following figure represents the flow of energy in a pyramid of food. If this ecosystem receives 100000 kcal of sunlight energy of the energy finally available to Tertiary Consumer (TC) is:
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|--------------|-------------|
| 1. 1000 kcal | 2. 100 kcal |
| 3. 10 kcal | 4. 1 kcal |
13. Pollen grains of a fruiting plants species are deposited on the female flower by a pollinator. However, the female flower does not get fertilized. Which of the following observation is true?
- | | |
|--|-----------------------------------|
| 1. Fruit will not be formed | 2. Only seed set will not occur |
| 3. Normal fruit and seeds will be formed | 4. Only fruit wall will be formed |
14. The values of stoichiometric coefficients m , x , y and z in the following reaction after balancing are, respectively:
- $$m(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \xrightarrow{\Delta} x\text{Cr}_2\text{O}_3 + y\text{N}_2 + z\text{H}_2\text{O}$$
- | | |
|---------------|---------------|
| 1. 2, 1, 1, 2 | 2. 2, 2, 2, 4 |
| 3. 1, 1, 1, 4 | 4. 2, 2, 1, 2 |
15. Identify the incorrect statement for the reaction $2\text{H}_2\text{S} + \text{SO}_2 \rightarrow 3\text{S} + 2\text{H}_2\text{O}$ is :
- (Atomic mass of S = 32)
1. 1 mol H_2O is produced per mole of H_2S consumed.
 2. 3 g of S is produced for every gram of SO_2 consumed
 3. two-thirds of the S produced comes from H_2S .
 4. the number of moles of various atoms present before and after the reaction is the same.

