

AMIT AJMANI'S ACADEMY

D-16/82/SECTOR-7, ROHINI, DELHI
PH: 9810476588, 9953371470

X BIOLOGY CLASS TEST

M.M.-30

Name of Student: _____ Class & Sub: _____
Topic of Test: HEREDITY AND EVOLUTION No. 1 Date : _____

1. What does Mendelian factor means? 1
 2. Why are traits acquired during the life time of an individual not inherited? 1
 3. What is meant by speciation? 1
 4. What is genetic drift? 1
 5. How do Mendel's experiments show that traits may be dominant or recessive? 2
 6. How is the sex of the child determined in human beings? 2
 7. What are vestigial organs? Give two egs of vestigial organs found in humans. 2
 8. Work out a cross between pea plants Tt (Tall) and tt (Dwarf). 2
 9. What are genes? Where are they located? 2
 10. Why Mendel chose pea plants for his experiment? OR What were the various characteristics in pea plant that lead Mendel to do his experiment on them? 2
 11. Explain the terms analogous and homologous organs with examples. 3
 12. Define: Hybrid, Monohybrid cross and dihybrid cross. 3
 13. The genotype of green stemmed tomato plants is denoted as GG and that of purple stemmed tomato plant as gg. When these two are crossed:
 - (a) What colour of stem would you expect in their F₁ progeny and why?
 - (b) Give percentage of purple-stemmed plants if F₁ plants are self-pollinated.
 - (c) In what ratio will you find the genotypes GG and Gg in the F₁ progeny? 3
 14. Depict the cross between a homozygous tall plant with wrinkled seeds and a homozygous dwarf plant with round seeds. 5
 15. Study the data given below and answer the questions that follow:

Parental plant cross	F ₁ offspring	F ₂ (self pollination of F ₁)
Fertilized and seeds collected		
Male parent always bore Red flowers	330 seeds sown and observed	Out of 44 seeds, 33 seeds gave plants with red flowers And 11 seeds gave plants with white flowers
Female parent always had White flowers	All 330 gave red flowers.	

 - (a) What is the term for this type of cross?
 - (b) What does the data of the column marked F₁ indicate?
 - (c) Express the genotype of the Parents, F₁ progeny and F₂ progeny.
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Name of Student: _____ Class & Sub: _____
Topic of Test: **HEREDITY AND EVOLUTION No. 2** Date : _____

1. Which fossils provide evidence that birds have evolved from reptiles? 1
2. How do Mendel's experiments show that traits are inherited independently? 2
3. How does wing of a bird and wing of an insect act as tools to study evolution? 2
4. Explain 'It's a matter of chance whether a couple gives birth to a boy or a girl.' 2
5. What are acquired and inherited traits? 2
6. Give the salient features of Darwin's theory of natural selection. 3
7. A person is given a set of two tall pea plants and when asked to find that whether the plants given to him are homozygous tall or heterozygous tall, he performs a test cross by crossing it with a homozygous dwarf plant. Find the ratio in between the tall and dwarf pea plant, when the plant is (i) homozygous tall (ii) heterozygous tall. Show the crosses also. 3
8. Define the following: Heredity, Variation, Genetics, Evolution. 4
9. What are fossils? How are they formed? Mention two ways by which age of fossil can be determined? How they help us in providing evolutionary relationships? 5
10. In water melons dark green colour (G) is dominant to stripes (g). A student crosses two water melon plants that are Gg (heterozygous) each.
 - (a) What will be the ratio of dark green water melons and striped water melons (genotypic ratio) in the offsprings?
 - (b) What will be the percentage of dark green coloured water melons in offsprings? Show with the help of the crosses. 3
11. Study the data given below and answer the questions that follow:

Parental plant cross fertilized and seeds collected	F ₁ offspring generation	F ₂ offspring of self pollination of F ₁
Male parent always bore Yellow seeds and female Parents always had green Seeds.	360 seeds sown and observed All 360 gave Yellow seeds.	Out of 48 seeds, 36 seeds gave plants with yellow seeds and 12 seeds gave plants with Green seeds.

 - a. What is the term for this type of cross?
 - b. What does the data of the column marked F₁ indicate?
 - c. Express the genotype of the Parents, F₁ progeny and F₂ progeny. 3