Class 10 Science · Chapter 8: Heredity

Worksheet · 20 marks · about 40 minutes · based on NCERT

Name _____ Class and section _____ Date _____

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1. A pea plant carries one T factor and one t factor for height. The plant will be [1]

(a) tall (b) short

(c) of medium height (d) tall in some seasons and short in others

2. The pair of sex chromosomes present in the body cells of a man is [1]

(a) XX (b) XY

(c) YY (d) only one X

3. Which of the following is a pair of contrasting visible characters that Mendel studied in garden peas? [1]

(a) smooth or hairy leaves (b) round or wrinkled seeds

(c) long or short roots (d) thick or thin stems

4. A breeder crosses pure-breeding pea plants that bear round seeds with pure-breeding plants that bear wrinkled seeds. The F1 seeds will be [1]

(a) all round (b) all wrinkled

(c) half round and half wrinkled (d) all slightly wrinkled

5. In a few reptiles, whether a hatchling is male or female is decided by [1]

(a) the sex chromosome given by the father (b) the temperature at which the fertilised egg is kept

(c) the food eaten by the mother (d) the number of eggs laid together

6. Rohan says that because his mother has only X chromosomes, both X chromosomes of his sister must have come from their mother. Is he right? Explain. [2]

7. A culture of bacteria grown from one cell is heated to a high temperature for an hour, and only a few cells survive. Give the reason only these few survived, and say what most cells in the culture will be like a few generations later. [2]

8. Give two examples from animals which show that the sex of an individual is not always decided by its genes, and state what decides it in each. [2]

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9. Kavita crossed pure-breeding pea plants with yellow seeds and pure-breeding plants with green seeds. Every F1 seed was yellow. She self-pollinated the F1 and got 452 yellow and 148 green seeds. (a) Which trait is dominant? Give the reason. (b) Work out the approximate ratio of yellow to green seeds. (c) What does the appearance of green seeds in the F2 show? [3]

10. A pure tall pea plant with round seeds (TT RR) is crossed with a pure short plant with wrinkled seeds (tt rr). (a) Give the genotype and appearance of the F1. (b) Name the kinds of germ-cell an F1 plant makes. (c) Name the two new combinations that appear in the F2. [3]

11. A survey of 200 families in a housing society, each with one child, found 98 boys and 102 girls. (a) Explain why the numbers are close to half and half. (b) Which parent's chromosome decided the sex of each child? (c) A neighbour says the mothers of the girls are responsible. Comment. [3]