

I Choose the correct answer

9 x 1 = 9

1. The miracle rice which saved millions of lives and celebrated its 50th birthday is _____ wheat that helped India to achieve high productivity.

- a. IR
- b. IR 24
- c. Atomita 2
- d. Ponni

2. Which method of crop improvement can be practised by a farmer if he is inexperienced.

- a) clonal selection
- b) mass selection
- c) pure line selection
- d) hybridisation

3. Himgiri developed by hybridisation and selection for disease resistance against rust pathogens is a variety of _____

- a. Chilli
- b. maize
- c. sugarcane
- d. wheat

4. Pusa komal is a disease resistant variety of

- a) sugarcane
- b) rice
- c) cow pea
- d) maize

5. Which of the following is used to produce products useful to human by biotechnology techniques.

- a) enzyme from organism
- b) live organism
- c) vitamins
- d) both (a) and (b)

6. We can cut the DNA with the help of

- a) scissors
- b) restriction endonucleases
- c) knife
- d) RNAase

7. DNA is a

- a) vector DNA
- b) circular DNA
- a) Recombinant of vector DNA and desired DNA
- d) satellite DNA

a) single stranded b) mutated
c) polymorphic d) repetitive

a) $n = 7$ and $x = 21$ b) $n = 21$ and $x = 21$
c) $n = 7$ and $x = 7$ d) $n = 21$ and $x = 7$

$$3 \times 1 = 3$$

3. In gene cloning the DNA of interest is integrated in a _____

$$2 \times 1 = 2$$

2. Bt gene from bacteria can kill insects.

(2)

- $$7 \times 2 = 14$$

3. Name the types of stem cells.

4. Discuss the method of breeding for disease resistance.
5. Distinguish between somatic gene therapy and germ line germ line gene therapy.
6. State the applications of DNA fingerprinting technique.
7. Differentiate between outbreeding and inbreeding.

III Answer in detail.

4 × 5 =20

1. What are the effects of hybrid vigour in animals.
2. Discuss the importance of biotechnology in the field of medicine.
3. Describe mutation breeding with an example.
4. Biofortification may help in removing hidden hunger. How?