



**Maheshwari Public School, Ajmer**

**Pre mid Test; Session: 2018-19**

**Class XII; Subject: Biology**

Time Allowed: 45min

M.M. 20

**General Instructions:**

- i) All 11 questions in this paper are compulsory to attempt.
- ii) Marks are indicated against each question.

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1. State a difference between gene and allele. [1]
  2. Write the two components of the first artificial recombinant DNA molecule constructed by Cohen and Boyer. [1]
  3. Give an example of a chromosomal disorder caused due to non-disjunction of autosomes. [1]
  4. Mention two objectives of setting up GEAC by our government. [1]
  5. How is the action of endonuclease different from exonuclease. [1]
  6. Two independent monohybrid crosses were carried out involving a tall pea plant with a dwarf pea plant. In the first cross, the offspring population had equal number of tall and dwarf plants, whereas in the second cross it was different. Work out the crosses, and explain giving reasons for the difference in the offspring populations [2]
  7. How does restriction endonuclease help in DNA recombinant technology. [2]
  8. A garden pea plant bearing terminal, violet flowers, when crossed with another pea plant bearing axial, violet flowers, produced axial violet flowers, and axial, white flowers in the ratio of 3:1. Work out the cross showing the genotypes of the parent pea plants and their progeny. [2]
  9. Draw a schematic diagram of pBR322 and label any six parts. [3]
  10. Write the symptoms of haemophilia and sickle cell anaemia in humans. Explain how the inheritance pattern of the two diseases differs from each other. [3]
  11. a) How do organic farmers control pests? Give two examples.  
b) State the difference in their approach from that of conventional pest control methods.

[3]