

Model Question Paper
Heredity and Evolution (B) - Part I

10th Standard

Science

Reg.No. :

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- I. Answer all the questions.
- II. Use Blue pen only.
- III. Question No 12 is compulsory.

Time : 01:00:00 Hrs

Total Marks : 30

5 x 1 = 5

Section-A

- 1) Mendel observed 7 pairs of contrasting characters in *Pisum sativum*. Which one of the following is not a part of that?
(a) Tall and dwarf (b) Yellow and green seed colour (c) Terminal and axial flower (d) Smooth and rough stem
- 2) Primitive man evolved in _____
(a) Africa (b) America (c) Australia (d) India
- 3) Which of the following is inheritable?
(a) An altered gene in sperm (b) An altered gene in liver cells (c) An altered gene in skin cells (d) An altered gene in udder cells
- 4) The theory of Natural Selection was proposed by _____
(a) Charles Darwin (b) Hugo de vries (c) Gregor Johann Mendel (d) Jean Baptise Lamarck
- 5) Somatic gene therapy causes _____
(a) Changes in sperm (b) Changes in progeny (c) Changes in body cell (d) Changes in ovum

Section-B

5 x 2 = 10

- 6) Mendel has observed Tallness as a dominant character in the garden pea plant. Similarly, tongue rolling is a dominant character in man. In a group of 60 students, 45 can roll their tongue and 15 are non-rollers. i) In the above context, calculate the percentage of dominant and recessive characters.
- 7) The inheritable characters vary in different species and within the same species. Name the variation in the following cases. The eye colour among the human beings are varied as blue, black, brown, green, etc. i) This is called as _____ variation. The dentition in the rabbit and the elephant are not the same. ii) This is called as _____ variation.
- 8) Sexually reproducing organisms produce offspring with marked, significant and visible variation. Asexually reproducing offspring show minor variations. i) Do you agree with the above statements? ii) Among the following organisms point out the asexually reproducing organism. (Cockroach, Euglena, Earthworm and Bird)
- 9) Here are certain important hereditary jargons. Fill in the blanks by choosing a suitable one from the list given. (allele, variation, speciation, gene, allelomorphs) i) _____ are the factors which form the physical basis of inheritance. ii) _____ is the alternate forms of the same gene. iii) _____ are the expressions of contrasting pair of alleles.
- 10) A change that affects the body cell is not inherited. However, a change in the gamete is inherited. The effects of radiation at Hiroshima have been affecting generations. Analyze the above statements and give your interpretation.

Section-C

3 x 5 = 15

- 11) Human evolution has undergone a record of changes during the past 15 million years. i) Name the different species of mankind in chronological order from primitive to modern man. ii) When were the primitive caves developed? iii) Narrate the life led by early man like hominids.
- 12) a) Describe in brief Mendel's monohybrid cross.

(OR)

b) Find out who I am? i) I am an acid used as a preservative and I have a sour taste. ii) I am organic and present in citrus fruits and I give immunity. iii) I am a cholesterol containing steroid obtained from bread mould. I am the steroid. iv) I am an enzyme and I cut DNA at specific sites. v) I am the paste enzyme that joins segments of DNA
