

[58]

Seat No : _____

No. of Printed Pages : 2

Sardar Patel University
B. Sc. Semester V Examination 2019

Genetics

US05CZOO 05

20th November 2019, Wednesday

10:00 am to 1:00 pm

Total Marks: 70

Q I Multiple Choice Questions.

[10]

1. 1:2:1 ratio is a modification of _____ cross.
a. monohybrid cross b. dihybrid cross
c. lethal gene d. none of these
2. In genetic interaction, P stands for _____.
a. parent b. generation
c. gamete d. allele
3. Which character was not chosen by Mendel in monohybrid cross?
a. seed colour b. flower colour
c. stem colour d. None of these
4. _____ antigens are present in blood group A.
a. A b. B
c. both d. none
5. Which of the following is a genotype of blood group AB?
a. $I^A I^B$ b. $I^O I^O$
c. $I^A I^A$ d. $I^B I^B$
6. The function of mitochondrial DNA is to synthesize _____.
a. protein b. enzymes
c. ATP d. coenzymes
7. Chiasmata takes place during
a. prophase b. metaphase
c. anaphase d. telophase
8. Sex chromosomes in human are
a. 21st pair b. 22nd pair
c. 23rd pair d. none
9. Picture of chromosomes in descending order is known as
a. pedigree b. ideogram
c. karyotype d. none
10. Fraternal twins are produced from
a. two zygotes b. two spermatozoa
c. two ova d. all

①

(PTO)

Q-II Answer the following in short. (Attempt any Ten)

[20]

1. Write about monohybrid ratio.
2. Define law of segregation.
3. Give brief history of Mendel's experiments.
4. What is epistasis?
5. What is monohybrid test cross?
6. Write about mitochondrial DNA.
7. Define differentiation.
8. Write about double crossing over.
9. Write about chromosomes of *Drosophila*.
10. What is mutation?
11. Give harmful evolutionary effects of Euphenics.
12. Define Eugenics.

Q-III a. Explain co-dominance with a suitable example.

[05]

b. Why did Mendel use pea plant as the experimental material? Explain.

[05]

OR

Q-III a. Describe the law of independent assortment.

[06]

b. Explain 3:6:3: 1:2:1 ratio.

[04]

Q-IV a. What is multiple allelism? Explain blood group inheritance.

[10]

OR

Q-IV a. Write a note on lethal genes.

[05]

b. Describe maternal inheritance with a suitable example.

[05]

Q-V a. Write a note on sex determination in human.

[05]

b. Describe the inheritance of X-linked gene for eye colour in *Drosophila*.

[05]

OR

Q-V Write an essay on types of crossing over.

[10]

Q-VI Explain the diseases due to mutant genes.

[10]

OR

Q-VI Describe karyotyping of human chromosomes and banding techniques.

[10]

— x —

2