

# CLASS X – SCIENCE – CHAPTER 08

## HEREDITY AND EVOLUTION

Name:

Date:

### CHOOSE THE CORRECT OPTION FROM QUES 1 TO 08

- Q01.** Two pea plants one with round green seeds (RRyy) and another with wrinkled yellow (rrYY) seeds produce F<sub>1</sub> progeny having round, yellow (RrYy) seeds. When F<sub>1</sub> plants are selfed, the F<sub>2</sub> progeny will have the following combination of characters  
(a) 15 : 1                      (b) 9 : 3 : 3 : 1                      (c) 9 : 3 : 4                      (d) 12 : 3 : 1
- Q02.** Which of the following scientist gave the principles of inheritance?  
(a) Mendel                      (b) Watson and crick                      (c) Johanssen                      (d) Griffin
- Q03.** The concept of origin of species by natural selection was given by.  
(a) Lamarck                      (b) Weismann                      (c) Darwin                      (d) Linnaeus
- Q04.** If a round, green seeded pea plant (RRYY) is crossed with wrinkled, yellow seeded pea plant (rryy) the seeds to be produced in F<sub>1</sub> generation will be.  
(a) Wrinkled and yellow (b) round and green                      (c) wrinkled & green                      (d) round and yellow
- Q05.** The genetic constitution of an organism is called.  
(a) Genotype                      (b) phenotype                      (c) variation                      (d) gene.
- Q06.** Two pink-colored flowers on crossing results in 1red, 2pink and 1white flower progeny. The nature of the cross is-  
(a) cross fertilization                      (b) self-pollination                      (c) double fertilization                      (d) no fertilization
- Q07.** Mendel proposed that every character is controlled by-  
(a) one factor                      (b) two factors                      (c) 1 chromosome                      (d) 2 chromosomes
- Q08.** Genetics is the study of-  
(a) resemblances amongst individuals                      (b) heredity and environment  
(c) differences amongst individuals                      (d) Heredity and variations.

**Q01.** What is monohybrid and dihybrid cross?

**Q02.** What are autosomes and sex chromosomes?

**Q03.** Why acquired traits are not inherited?

## DCA CLASSES

- Q04.** How do the two factors for a character, present in diploid cells, behave at the time gamete formation?
- Q05.** Only variations that confer an advantage to an individual organism will survive in a population. Do you agree with this statement? Why or why not?
- Q06.** Who coined the term 'gene'?
- Q07.** What are dominant genes?
- Q08.** Give the pair of contrasting traits of the following characters in plant and mention which one is recessive and which is dominant?  
(a) yellow seed (b) round seed
- Q09.** Write the scientific name of the plant on which Mendel carried out his experiments.
- Q10.** How many autosomes are present in human sperm?
- Q11.** What is gene? Where are genes located?
- Q12.** How many contrasting characters did Mendel see in garden pea? Give any two of them.
- Q13.** State three laws of Mendel?
- Q14.** Describe how the sex of the offspring is determined in the zygote in human beings?
- Q15.** Who is called father of genetics?
- Q16.** What is the scientific name of human being?
- Q17.** Why acquired characters are not inherited?
- Q18.** How is the chromosome number restored in zygote?
- Q19.** What are variations? Give their types.
- Q20.** Give difference between diploid and haploid.
- Q21.** Give the basic features of the mechanism of inheritance.
- Q22.** What is heredity?
- Q23.** What are Mendelian factors?
- Q24.** What will be the sex of the embryo if an egg is fertilized by the sperm having  
(a)  $22 + x$  (b)  $22 + y$
- Q25.** Mention two sources of variation.
- Q26.** Why did Mendel choose pea plant for his experimentation?
- Q27.** What is the difference between reproductive and non-reproductive variations?
- Q28.** Write similarities between Mendelian's factors and gene.