

## Chapter- 4

### Worksheet-2

1. The process by which new species develop from existing ones is called \_\_\_\_\_.
2. DNA segment in a chromosome performing specific function is the \_\_\_\_\_.
3. In the following pairs identify the homologous organs.
  - (a) Tendrils of Pisum spines of Opuntia
  - (b) Wings of insects and wings of birds
  - (c) Spines of cactus and thorns of euphorbia
  - (d) All the above
4. Broccoli, Cauliflower, Cabbage etc. are produced by:
  - (a) Reproductive isolation
  - (b) Artificial selection
  - (c) Survival of the fittest
  - (d) Natural selection
5. According to the evolutionary theory, formation of a new species is generally due to
  - (a) sudden creation by nature
  - (b) accumulation of variations over several generations
  - (c) clones formed during asexual reproduction
  - (d) movement of individuals from one habitat to another
6. Analogous organs show similarity in:
  - (a) size
  - (b) origin

- (c) appearance
- (d) function

7. Miller synthesized simple amino-acid from:

- (a) methane, ammonia, oxygen, nitrogen
- (b) hydrogen, methane, ammonia, water
- (c) ammonia, methane, water, carbon-di-oxide
- (d) hydrogen, oxygen, water, nitrogen

8. The two versions of a trait (character) which are brought in by the male and female gametes are situated on

- (a) copies of the same chromosome
- (b) two different chromosomes
- (c) sex chromosomes
- (d) any chromosome

9. The pair having opposite characteristics is called:

- (a) allelomorph
- (b) dominant
- (c) homozygous
- (d) similar

10. All dissimilarities of characteristics between members of the same species are called:

- (a) mutation
- (b) variations
- (c) heredity
- (d) crossing over

11. How do variations affect the evolution of those organisms that reproduce sexually?

12. “Variation is beneficial to the species, but not necessarily for the individual”. Give reason. Evolutionary relationship can be traced by study of homologous organ. Explain.
13. How is the sex of the child determined in human beings?
14. What is speciation? List four factors that could lead to speciation, which of these cannot be a major factor in the speciation of a self – pollinating plant species explain?
15. Explain the terms analogous and homologous organs with examples?
16. How gene is responsible for controlling a trait? Explain by giving an example.
17. “Natural selection and speciation leads to evolution.” Justify this statement.
18. Fossils are related to evolution”, justify this statement. Give the two ways by which age of the fossils can be estimated?
19. What is meant by characteristics?  
Give an example of the characteristics being used to determine how close two species are in evolutionary terms.
20. How do Mendel’s experiments show that traits are inherited independently?