Test Assignment
Subject Biology
Class : 12th **MM: 40**

1. A child with a mother of blood group A and a father of blood group AB will not have which of the following blood groups ?
(a) A (b) B (c) AB (d) O
2. In a red-white flowered cross of Mirabilis jalapa, the F_2 generation has red, pink and white-flowered plants in the ratio of
(a) 1:2:1 (b) 1:0:1 (c) 2:1:1 (d) 1:1:2
3. Fruit flies are one of the best materials for genetic studies because of all except :
(a) Ability to grow on a simple synthetic medium in the laboratory
(b) Short life span
(c) Production of a large number of progeny in each mating.
(d) Presence of few externally visible and identifiable contrasting traits
4. In a cross between AABB × aabb, the ratio of F_2 genotypes between AABB, AaBB, Aabb and aabb would be
(a) 9:3:3:1 (b) 2:1:1:2 (c) 1:2:2:1 (d) 7:5:3:1
5. The cross between a recessive and its hybrid or its F_1 plant is called
(a) Black cross (b) Test cross
(c) Monohybrid cross (d) Dihybrid cross
6. In the XO type of sex determination
(a) Females produce two different types of gametes
(b) Males produce two different types of gametes
(c) Females produce gametes with Y-chromosome
(d) Males produce gametes with Y-chromosome
7. Which amino acid is substituted in sickle cell anaemia?
(a) Glutamic acid by valine in α-chain
(b) Glutamic acid by valine in β-chain
(c) Valine by glutamic acid in β-chain
(d) Valine by glutamic acid in α-chain
8. A colour blind girl is rare because she will be born only when
(a) Her mother and maternal grandfather were colour blind
(b) Her father and maternal grandfather were colour blind
(c) Her mother is colour blind and father has normal vision
(d) Parents have normal vision but grandparents were colour blind
9. Turner's syndrome is represented by
(a) XYY (b) XO (c) XXY (d) XXX
10. Assertion : In co-dominance, the F_1 generation resembles both the parents.

Reason : An example is different type of red blood cells that determine ABO blood grouping in humans.

(a) Both Assertion and Reason are correct but Reason is not the correct explanation of Assertion.

(b) Assertion is correct but Reason is not correct.

(c) Assertion is not correct but Reason is correct.

(d) Both Assertion and Reason are correct and Reason is the correct explanation of Assertion.

11. The blood group of mother is A and blood group of father is B. What could be the possibility of their first child with blood group O.

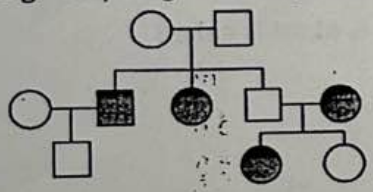
12. What did Mendel choose pea plant for his experiment?

13. Which Law of inheritance is called Law of Purity of Gametes and why.

14 Why are females homozygous and males are hemizygous to the sex linked traits?

15. State two dissimilarities between genetic theory of inheritance and chromosomal theory of inheritance.

16. Study the given pedigree and give the answer of the following questions:



i. Is it dominant or recessive

ii. Is it represent autosomal or sex linked traits.

iii. Write the genotype of individuals of 1^{st} and 2^{nd} generations.

17. A cross between two plants having pink colour flowers shows both phenotypic and genotypic ratio 1:2:1 unlike to the Mendelian mono hybrid cross ratio. How is it possible? Explain with the help of a cross.

18. Distinguish between the multiple allelism and polygenetic inheritance.

19. A person is suffering with a disorder and showing short stature, congenital heart disease and mentally regarded. With which disorder the person is suffering from? What is the cause of the disorder and what is the reason behind it.

20. Name the organism over which T. H. Morgan performed his experiments. Write its biological name. Why did he choose this organism for his experiments?

21. A heterozygous pea plant with Inflated and green pd is crossed with another homozygous pea plant with constricted and yellow pods.

(a)What type of cross it is.

(b) Define it.

(c) Find out F1 ratio.