# **ETERNAL CAREER CLASSES**

### **SECTION - A**

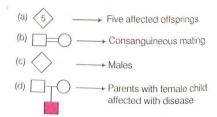
## Single answer type question. Attempt any seven question: Marks: $1 \times 7 = 7$

- 1. Which of the following is a correct match pair?
  - (a) Gene Alternate form of a character
  - (b) Gene locus Position of a gene on chromosome
  - (c) Trait Determinant of a character
  - (d) Allelomorph Dominant allele
- 2. Which of the following is a correct match pair?
  - (a) Heterozygous Gene pair contain two identical genes
  - (b)Homozygous Gene pair contain two different genes
  - (c) Dominant allele Express itself in heterozygous condition only
  - (d) Recessive allele Express itself in homozygous condition only
- 3. Select the option which correctly represents the gametes produced by TT and tt parents
  - (a) 2 different types of gametes containing TT and tt combinations
  - (b) Only one type of allele containing Tt combination
  - (c) 2 different types of gametes, containing T and t alleles
  - (d) 3 different types of gametes, containing TT, tt and Tt combinations
- 4. A test cross between ww (homozygous recessive) and Ww (heterozygous dominant) will result in the production of
  - (a) 75% dominant and 25% recessive
  - (b) 25% dominant and 75% recessive
  - (c) 50% dominant and 50% recessive
  - (d) 80% dominant and 20% recessive
- 5. Which of the following statement correctly represents the significance of a test cross?
  - (a) it is used to generate new genotypic combinations in monohybrid cross.
  - (b) it is used to determine the genotype of a dominant phenotype.
  - (c) it is used to determine the phenotype of all the genotypes.
  - (d) it is used to generate whether an allele is dominant or recessive.
- 6. Identify the correct match pair regarding dihybrid cross
  - (a) Number of genotypic classes in  $F_2$  generation –Three
  - (b) Number of offsprings produced in  $F_2$  –generation F our
  - (c) Number of phenotypic classes in  $F_2$  –generation Four
  - (d) Number of gametes produced in  $F_2$  –genration Two
- 7. Which of the following relations are correct regarding linkage and recombination?

  - II. Recombination  $\propto \frac{1}{Distance\ between\ genes}$
  - III. Linkage ∝ Distance between genes
  - IV. Linkage  $\propto \frac{1}{Distance\ between\ genes}$

Choose the answer from the options given below.

- (a) I and III
- (b) I and IV
- (c) II and III
- (d) II and IV
- 8. Identify the correct match pair regarding symbols used in pendigree analysis?



- 9. Choose the incorrect match pair.
  - (a) Monohybrid cross -Cross in which only one pair of contrasting character is considered
  - (b) Dihybrid cross Cross in which two pairs of contrasting characters are considered
  - (c) Reciprocal Cross Independent of sex of parents
  - (d) Back cross Cross of the hybrid of  $F_1$  –generation with recessive parent only
- 10. A disease caused by an autosomal primary non-disjunction is
  - (a) Down's syndrome
  - (b) Klinefelter's syndrome
  - (c) Turner's syndrome
  - (d) Sickle cell anaemia

#### **SECTION - B**

#### Short answer type question. Attempt any one question :-

**Marks** :  $1 \times 3 = 3$ 

- 11. Explain Down's syndrome.
- 12. What are Sex chromosomes?

#### Long answer type question. Attempt any two question :-

**Marks** :  $2 \times 5 = 10$ 

- 13. What is an euploidy? Differentiate between an euploidy and polyploidy.
- 14. Describe the individuals with the following chromosomal abnormalities: Trisomy at chromosome 21

XXY

XO

15. Explain autosome, hemizygous, homozygous, and heterozygous?

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