



- 12) Mendel selected only \_\_\_\_\_ characters (B)  
 a) 6                                      b) 7                                      c) 8                                      d) 9
- 13) Supplementary genes (A)  
 a) 9:3:4                                      b) 4:1                                      c) 5:1                                      d) 3:3:1
- 14) mRNA carries the message in the form of (C)  
 a) 2 codes                                      b) 1 codes                                      c) Triplet code                                      d) 4 codes
- 15) DNA Replication is \_\_\_\_\_ types (B)  
 a) 2                                      b) 3                                      c) 4                                      d) 1
- 16) Which of the following is not one of Mendel's law of inheritance (D)  
 a) Law of segregation                      b) Law of independent Assortment                      c) Law of Dominance                      d) Law of linkage
- 17) In a monohybrid cross, what is the expected phenotypic ratio in the F<sub>2</sub> generation when complete dominance is observed (D)  
 a) 1:2:1                      b) 3:3:1                      c) 3:1                      d) 1:1
- 18) What is the genotype of a plant that expresses a recessive trait (D)  
 a) RR                      b) Rr                      c) rr                      d) R
- 19) The number of chromosomes found in Humans (D)  
 a) 22 pairs                      b) 28 pairs                      c) 26 pairs                      d) 23 pairs
- 20) The number of chromosomes found in Drosophila (B)  
 a) 2 pairs                      b) 4 pairs                      c) 3 pairs                      d) 6 pairs

## II. Fill in the Blanks.

10x1/2=5

- 1) Molecular biology refers to the study **Structure & function of macromolecules**
- 2) DNA **Deoxyribonucleic acid**
- 3) DNA structure generalizations are called **Base pairing rules or the double helix model**
- 4) Purines & Pyrimidines is brought about by **Nucleotide synthesis**
- 5) m-RNA **Messenger RNA**
- 6) The technique for generating amino acid coding changes in the DNA (gene) is regarded as **site – directed mutagenesis**
- 7) The trade name for insulin produced by rDNA technology **Humulin**

- 8) The first synthetic vaccine developed by rDNA technology **Hepatitis – B**
- 9) The most commonly used animal model in transgenesis to represent human **Mouse**
- 10) Name of the first ever mammal that has been cloned **Dolly the sheep**
- 11) The contribution of Mendel to genetics is called **Mendelian inheritance**
- 12) Complementary genes **Are genes that work together to produce a particular trait**
- 13) PCR **Polymerase chain reaction**
- 14) The width of the DNA helix is **2nm**
- 15) RNA is a nucleic acid containing **Ribose sugar, nucleotides & bases adenine, uracil, cytosine guanine**
- 16) The most commonly used prokaryotic host in rDNA technology is **E. Coli**
- 17) Northern blotting technique is used for the detection of **RNA**
- 18) Name the blotting technique in which nucleic acids (DNA or RNA) are directly blotted onto the filters without electrophoresis **Dotblot**
- 19) The bacterial source of the enzyme Taq DNA polymerase, that is widely used in polymerase chain reaction **Thermus aquaticus**
- 20) The collection of DNA fragments from the genome of a particular species represents **Genomic library**

### **III Answers the following questions**

- (1) Inborn errors of Metabolism
- (2) Chromosome structure
- (3) Crossing over
- (4) Maxam and Gilbert methods
- (5) Southern blot technique.