EINSTEIN'S ACADMEY

10^{TH} SCIENCE

UNIT- 18

MARKS – 50

Choose the correct answer

8 x 1=8

1. The centromere is found at the centre of the_____ chromosome.

a) Telocentric b) Metacentric

c) Sub-metacentric d) Acrocentric

2. The number of chromosomes found in human beings are_____.

a) 22 pairs of autosomes and 1 pair of allosomes. b) 22 autosomes and 1 allosome

c) 46 autosomes d) 46 pairs autosomes and 1 pair of allosomes.

3. According to Mendel alleles have the following character

a) pair of genes b) responsible for character

c) production of gametes d) recessive factors

4. The region of chromosome where the spindle fibres get attached during cell division

a) Chromosome b) Centrosome

d) Centromere c) Chromonema

5. 9:3:3: 1 ratio is due to

a) Segregation b) Crossing over

c) Independent assortment d) Recessiveness

6. The _____units from the backbone of the DNA

a) 5 carbon sugar b) Phosphate

c) Nitrogenous bases d) Sugar phosphate

7. Okasaki fragments are joined together by _____

a) Helicase b) DNA polymers

c) RNA primer d) DNA ligase

8. The number of chromosomes found in human beings are _____.

a) 22 pairs of autosomes and 1 pair of allosomes b) 22 autosomes and 1 allosome

c) 46 autosomes d) 46 pairs autosomes and 1 pair of allosomes

II. Fill in the blanks

3 x 1=3

1. The pairs of contrasting character (traits) of Mendel are called_____

2. The thin thread like structures found in the nucleus of each cell are called_____

3. DNA consists of two_____chains.

III. Identify whether the statement are True or False. Correct the false statement

2x1=2

1. Each gamete has only one allele of a gene.

2. Down's syndrome is the genetic condition with 45 chromosomes.

IV. Match the following

(2)

1. Autosomes - Trisomy 21

2. Diploid condition - 9:3:3:1

3. Allosome - 22 pair of chromosome

4. Down's syndrome - 2n

5. Dihybrid ratio - 23rd pair of chromosome

V. Short answers questions

10 x 2=20

1. What do you understand by the term phenotype and genotype?

2. What is a cross in which inheritance of two pairs of contrasting characters are studied?

3. Name the conditions when both the alleles are identical?

4. Explain the structure of a chromosome.

5. Label the parts of the DNA in the diagram given below. Explain the structure briefly.

6. Under which conditions does the law of independent assortment hold good and why?

7. Why did Mende select pea plant for his experiment?

8. What are Okasaki fragments?

9. What are allosomes.

10. Why is euploidy considered to be advantageous to both plants and animals.

VI. Long answer questions

3x 5=15

1. Explain with an example the inheritance of dihybrid cross. How is it different from monohybrid cross?

2. How is the structure of DNA organised? What is the biological significance of DNA?

3. Explain the structure of a chromosome.