WORKSHEET 1

CHAPTER 2 – HUMAN CHROMOSOMES

A. Name the following.

1. A nitrogenous base in DNA.
2. Functional segment of DNA.
3. The type of bond that joins the complementary nitrogenous bases.
4. Chromosome in which centromere is at the end.
5. Protein present in a nucleosome.

B. Fill in the blanks.

1. Formation of a new DNA molecule is called _____
2. DNA double helix model was given by_____
3. Nucleotides are made of _____ , _____ and _____
4. Two purine bases are _____ and _____
5. _____ is complementary to cytosine.

C. State whether the following statements are True or False.

1. Spindle fibre is attached to centromeres at the time of cell division.
2. Adenine base pairs with guanine.
3. Thymine is a purine base.
4. The sex chromosome of human female is heteromorphic.
5. The number of pairs of autosomes in man is 22.

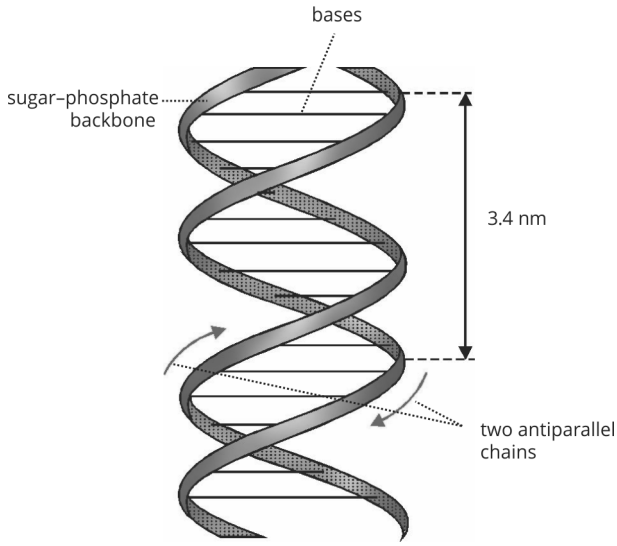
D. Match the items in Column A with those in Column B and write down the matching pairs.

Column A	Column B
1. Guanine	a. 600 nm diameter
2. Thymine	b. DNA-histone complex
3. Nucleosome	c. 30 nm diameter
4. Chromatin fibre	d. purine
5. Chromatid	e. pyrimidine

Name: ..... Teacher's signature: .....

Class: ..... X ..... Date: .....

E. The given figure is a diagram of double helical structure of DNA. Based on this diagram, answer the following questions.



1. Name the four nitrogenous bases that form a DNA molecule.
2. Give the full form of DNA.
3. Name the unit of heredity.
4. Explain briefly the structure of DNA.
5. How are new DNA strands formed?

ANSWERS

WORKSHEET 1

A. Name the following.

1. Adenine
2. Gene
3. Hydrogen bond
4. Telocentric
5. Histone

B. Fill in the blanks.

1. replication
2. Watson and Crick
3. pentose sugar, nitrogenous base and phosphate
4. guanine, adenine
5. Guanine

C. State whether the following statements are True or False.

1. True 2. False 3. False 4. False 5. True

D. Match the items in Column A with those in Column B and write down the matching pairs.

1. d. 2. e. 3. b. 4. c. 5. a.

E. The given figure is a diagram of double helical structure of DNA. Based on this diagram, answer the following questions.

1. Adenine, Guanine, Thymine, Cytosine
2. Deoxyribonucleic acid
3. Gene
4. DNA is a large molecule consisting of two polynucleotide strands, complementary in nature, wound around each other in a double helix. Each strand is composed of repeating nucleotides made up of sugar, phosphate and nitrogenous bases, running antiparallel to each other. The sugar-phosphate form backbone and nitrogenous bases are arranged at right angles giving a ladder-like arrangement.
5. Formation of a new DNA molecule is called DNA replication. During replication, DNA double helix opens at one end, freeing the strands. To each of these free strands, new complementary strands begin to form in the opposite direction.