



Student's Name: .....

Academi

**The Fourth Question (2 Marks)**

(A) Discuss the process of mitosis.

(B) In a table, compare between DNA and RNA.



No	QUESTION (%)		ANSWER (%)
1	<i>Chromosome</i>		The process of copying the sequence of one strand of DNA (the template strand).
2	<i>Meiosis</i>		The narrow region where the chromatids connect.
3	<i>Gene</i>		The package that is formed from a condensed, coiled and folded chromosome.
4	<i>Nucleotide</i>		Links ribonucleotides (that are complementary to the DNA template) into the primer.
5	<i>Cytokinesis</i>		The unit that specifies an organism's inherited character.
6	<i>Mitosis</i>		The structural unit of DNA and RNA.
7	<i>Translation</i>		The division process which forms two daughter cells, identical to each other and to the mother cell.
8	<i>Transcription</i>		The division of the cytoplasm of a cell following the division of the nucleus.
9	<i>Primase</i>		
10	<i>Binary fission</i>		
11	<i>Centromere</i>		

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- 83.6%
1. Ribosomes read mRNA (*two // three // four*) bases at a time.
  2. (*DNA-ligase // helicase // DNA-polymerase*) joins the Okazaki fragments of the newly-formed bases to form the new lagging DNA strand.
  3. Replication enzymes include the following except (*reductase // primase // polymerase*).
  4. (*mRNA // rRNA // tRNA*) is a single stranded molecule with attachment site for an amino acid.
  5. (*UGA // UAG // AUG*) is a start codon.
  6. Pairs of nitrogenous bases connect the 2 polynucleotide chains with (*hydrogen // phosphodiester // ionic*) bonds.
  7. Ribosomal RNA forms (*5% // 15% // 85%*) of total RNA.
  8. Crossing over occurs during meiosis (*prophase I // Metaphase I // Anaphase I*).

**The Second Question (4 Marks)**

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### The Second Question (4 Marks)

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- 9. In nucleotides of DNA, the pentose sugar joined to the nitrogen base is ribose.
- 10. In conservative DNA replication, one of the daughter molecules will have one old strand and one newly-made strand.
- 11. Polynucleotides are synthesized by connecting the sugars of one nucleotide to the phosphate of the next with a hydrogen bond.
- 12. There are 20 amino acids, but 64 possible codons.

1	2	3	4	5	6	7	8	9	10	11	12

**The Third Question (2 Marks)**

Match each term in column (A) with its suitable statement in column (B):

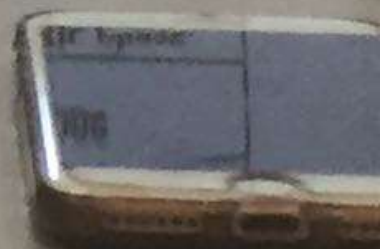
	COLUMN (A)		COLUMN (B)
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5. Crossing over occurs during meiosis (*prophase I // Metaphase I // Anaphase I*).

### The Second Question (4 Marks)

Put (✓) or "X" for each of the following statements (in the table below):

- |  |
|--|
| 1. Proteins are made of amino acids joined together by peptide bonds.  |
| 2. Meiosis division yields four daughter haploid cells.  |
| 3. In meiosis (unlike mitosis), the homologous chromosomes pair with one another.                              |
| 4. The interphase of the cell cycle alternates with the much longer mitotic phase.                             |
| 5. Adenine forms 2 hydrogen bonds only with uracil.  |
| 6. The chromosomes are copied in the "S" phase of cell cycle.  |
| 7. Messenger RNA transfers amino acids to the ribosomes where proteins are synthesized.                        |
| 8. In mitosis metaphase, the sister chromatids are pulled by the spindle fibers to opposite poles of the cell. |



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Meiosis		The unit that specifies an organism's inherited character.
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