

SAINIK SCHOOL GOPALGANJ
ASSIGNMENTS
BIOLOGY (44)

Chapter 06 : Molecular basis of Inheritance
General Instructions

Class: XII

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1. All questions are compulsory.
 2. Question 1 to 10 is multiple choice questions.
 3. Question 11 to 15 is short answer questions.
 4. Question 16 to 20 is long answer questions
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1. The nucleic acid synthesis takes place in
 - a) 3'-5' direction
 - b) 5'-3' direction
 - c) Both ways
 - d) Any direction

2. What is the nature of the strands of the DNA duplex?
 - a) Anti-parallel and complementary
 - b) Identical and complementary
 - c) Anti-parallel and non-complementary
 - d) Dissimilar and non-complementary

3. Hershey and Chase's experiment was based on the principle
 - a) Transformation
 - b) Translation
 - c) Transduction
 - d) Transcription

4. AUG stands for
 - a) Alanine
 - b) Methionine
 - c) N-formyl methionine
 - d) Glycine

5. The reason behind the anti-parallel strand of DNA is
 - a) Hydrogen bond
 - b) Ionic bond
 - c) Phosphodiester bond
 - d) Disulphide bond

6. In a transcription unit, the promoter is located towards
- 5'end of the structural gene
 - 3'end of the structural gene
 - 5'end of the template strand
 - 3'end of the coding strand
7. The primer in DNA replication is
- Small ribonucleotide polymer
 - Helix destabilizing protein
 - Small deoxyribonucleotide polymer
 - Enzyme joining nucleotides of new strands
8. Genetic information is transferred from nucleus to cytoplasm through
- RNA
 - Anticodon
 - DNA
 - Lysosomes
9. The enzyme involved in transcription
- DNA Polymerase I
 - DNA Polymerase III
 - RNA Polymerase
 - DNA Polymerase II
10. Non-sense codons participate in
- Releasing t-RNA from polynucleotide chain
 - Formation of unspecified amino acids
 - Terminating message of gene-controlled protein synthesis
 - Conversion of sense DNA into non-sense DNA
11. Give a reason for the discontinuous synthesis of DNA on one of the parental strands?
12. Sometimes, the young ones born have an extremely different set of eyes or limbs. Give a relevant explanation for the abnormality.
13. What are the functions of the :
- Methylated guanosine cap
 - Poly-A tail

14. What is the function of amino acyl t-RNA synthase? Write its function.
15. State the function of histones in DNA packaging.
16. What is an operon? Explain an inducible operon.
17. Explain the process of DNA fingerprinting.
18. Write about Human Genome Project.
19. Enumerate the post-transcriptional modifications in a eukaryotic mRNA with suitable diagram.
- 20.(a) Describe semi-conservative model of DNA replication with proper diagram.
- (b) Discuss the Meselson and Stahl experiment with suitable diagram