QP Code:780600

(2½ Hours) [Total Marks : 75

N.B. : (1) Attempt all questions.
(2) **All** questions **carry equal** marks.
(3) **Draw diagrams** wherever **necessary.**

1. Do as directed:(Any **fifteen**) 15

(1) Name the plasmid present in *E. coli*.
(2) Name any one direct screening method.
(3) Name the two strains of Streptococcus used by Griffith in his experiment.
(4) Define Transposition.
(5) Define Mutation.
(6) Define Mutagenesis.
(7) Give one example of commonly used Prokaryote in Genetic Engineering.
(8) Give one example of intercalating agent.
(9) State True or False. AT→GC is a Transversion Mutation.
(10) State True or False. Type II Restriction Endonucleases cut the DNA within the restriction site.
(11) Fill in the blank. The acronym MCS stands for_____.
(12) In_____model of replication each progeny DNA molecule retains one of the parental strands.
(13) _____is a pre- existing polynucleotide chain in DNA replication to which new nucleotides can be added.
(14) Enzyme_____is encoded by pol A gene and consists of one polypeptide.
(15) In DNA replication_____activity is a proof reading mechanism.
(16) The_____strand is synthesized in the same direction as the direction of replication fork movement.
(17) _____when activated by DNA helicase synthesizes a short RNA primer.
(18) _____are involved in the regulatory events that occur at the check points of cell cycle.
(19) _____enzyme is involved in base excision repair mechanism.
(20) Photolyase enzyme involved in photoreactivation can remove UV induced_____.

2. (A) Explain how Meselson and Stahl proved Semiconservative mode of DNA replication. 8
   (B) Differentiate between the leading and lagging strands formed during DNA replication. 7

OR

   (C) Elaborate on the different DNA polymerases in Eukaryotic DNA replication. 8
   (D) With a neat labelled diagram illustrate the Holliday model of recombination. 7

3. (A) Explain the term mutation and discuss the various types of mutations. 8
   (B) Discuss Nucleotide Excision Repair. 7

OR

   (C) Explain the various types of point mutations. 8
   (D) Discuss the mechanism of mutation induced by Base analog. 7

4. (A) How would you use pBR 322 as a vector to introduce a gene of choice. 8
   (B) Explain the isolation of genomic DNA by a flow diagram. 7

OR

   (C) Explain the different types of Restriction Endonucleases. 8
   (D) Explain with an example plant vectors. 7

5. Short notes (Any **Three**):- 15
   (a) Early models of DNA replication.
   (b) Prokaryotes.
   (c) Photoreactivation.
   (d) U.V. radiations as a physical mutagen.
   (e) pUC Vector.
