

P-250

B. Sc. (Biotechnology) Part - II Examination, 2017

BIOTECHNOLOGY

Paper : VII

(Molecular Biology)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt *all* questions from Section - A (Objectives type questions), *seven* questions from Section - B (Short answer type questions) and *two* questions from Section-C (Long/Essay type Questions).

SECTION - A

[Marks : 1 × 10 = 10

1. Transcription is the transfer of gene information from :
 - (a) DNA to RNA
 - (b) tRNA to mRNA
 - (c) DNA to mRNA
 - (d) mRNA to tRNA

2. The fragment of DNA attached to an RNA initiator component were discovered by :
 - (a) Watson and Crick
 - (b) Okazaki
 - (c) Peterson
 - (d) Nelson

3. Unwinding of DNA is done by :
 - (a) Helicase
 - (b) Ligase
 - (c) Hexonuclease
 - (d) Topoisomerase

4. Semi conservative replication of DNA was first demonstrated in :
 - (a) Escherichia coli
 - (b) Streptococcus pneumoniae
 - (c) Salmonella typhimurian
 - (d) Drosophila melanogaster

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5. DNA is denatured by :
- (a) Heat (b) Acid
(c) Alkali (d) All of the above
6. Sigma factor is component of :
- (a) DNA ligase (b) DNA polymerase
(c) RNA polymerase (d) Endonuclease
7. Translation occurs in the :
- (a) Nucleus (b) Cytoplasm
(c) Nucleolus (d) Lysosome
8. In prokaryotes, the first amino acid in the polypeptide chain :
- (a) Methionine <https://www.dbraonline.com>
(b) N-methyl Methionine
(c) N-formyl Methionine
(d) All of the above
9. The set of DNAs generated by using random primers in a PCR reaction is called :
- (a) RAPD (b) RFLP
(c) AFLP (d) In situ hybridization
10. Guanine specific cleavage in Maxam-Gilbert method is done by using :
- (a) Formic acid (b) Hydrazine
(c) Dimethylsulphate (d) Piperidine

SECTION - B

{ Marks : 5 × 7 = 35

Write short notes on the following :

1. Insertion elements
2. B-DNA

(2)

3. Ubiquitin molecule
4. Split genes
5. VNTR and STRs
6. m-RNA
7. DNA recombination,
8. Wobble hypothesis
9. Catabolic repression
10. Elongation process in translation.

SECTION - C

[Marks : 15 × 2 = 30

1. Explain DNA replication process in both prokaryotes and eukaryotes.
 2. Discuss methods of genome sequencing.
 3. Explain transcription process in prokaryotes.
 4. Give an account of trp operon.
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