

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

MSc DEGREE EXAMINATION MAY 2019
(Second Semester)

Branch-BOTANY

ADVANCED MOLECULAR BIOLOGY

Time: Three Hours

Maximum: 75 Marks

SECTION-A (10 Marks)

Answer ALL questions

ALL questions carry EQUAL marks (10x1 = 10)

- 1 The process of sorting and transporting newly synthesized proteins to correct destination in a cell is called _____.
(i) Protein sorting (ii) Protein targeting
(iii) Protein trafficking (iv) All of these
- 2 The repeating units of proteins are _____.
(i) Glucose units (ii) Amino acids
(iii) Fatty acids (iv) Peptides
- 3 DNA strands run _____ in relation to each other.
(i) Antiparallel (ii) Parallel
(iii) Perpendicular (iv) Both (i) & (ii)
- 4 Watson and Crick proposed _____ form of DNA.
(i) A (ii) B
(iii) C (iv) D
- 5 The C-value is the amount of _____ in the haploid genome of an organism.
(i) RNA (ii) DNA
(iii) rRNA (iv) mRNA
- 6 The enzyme which builds a mRNA strand complimentary to the DNA transcription unit is called :
(i) DNA polymerase (ii) RNA polymerase
(iii) Helicase (iv) DNA ligase
- 7 Translation occurs in _____.
(i) Nucleus (ii) Cytoplasm
(iii) Nucleolus (iv) Lysosome
- 8 The enzyme involved in amino acid activation is _____.
(i) ATP synthetase (ii) Aminoacyl tRNA synthetase
(iii) Aminoacyl mRNA synthetase (iv) Aminoacyl rRNA synthetase
- 9 The trp operon is related to production of _____.
(i) Tryptophan (ii) Arginine
(iii) Leucine (iv) Phenylalanine
- 10 Which hormone causes changes in the production of different enzymes, allowing fruits to ripen?
(i) Auxin (ii) Cytokinin
(iii)- Ethylene (iv) Gibberellin

SECTION - B (35 Marks)

Answer **ALL** Questions

ALL Questions Carry **EQUAL** Marks (5 x 7 = 35)

- 11 a Illustrate the biological importance of protein.
OR
b Enumerate the physical properties of protein.
- 12 a Explain the techniques involved in nucleosome discovery.
OR
b Analyze the types of RNA.
- 13 a Discuss about DNA dependent RNA polymerase.
OR
b Compare satellite DNA and selfish DNA.
- 14 a Evaluate on chain elongation and chain termination.
OR
b Evaluate the triplet nature of genetic code.
- 15 a Analyse the principle of DNA methylation.
OR
b Explain the 'lac' operon concept.

SECTION - C (30 Marks!)

Answer any **THREE** Questions

ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

- 16 Classify the protein based on composition and solubility.
- 17 Assess the concept of nucleic acid as genetic material.
- 18 Examine the post transcriptional changes in RNA.
- 19 Describe the mechanism of translation.
- 20 Differentiate the lysis and lysogeny phenomenon in lambda phage.

Z-Z-Z

END