

MOLECULAR BIOLOGY

EXERCISE

- Nucleic acids were first discovered by
a) Boysen Jensen b) Friederich Meischer c) Johansen d) Went
- A nucleotide consists of
a) A nitrogen base and pentose sugar
b) A nitrogen base and phosphate
c) A Pentose sugar and phosphate
d) A nitrogen base, pentose sugar & phosphate
- DNA molecule does not contain
a) Thymine b) Uracil c) Adenine d) Cytosine
- RNA molecule does not contain
a) Uracil b) Thymine c) Cytosine d) Adenine
- Double helical model was proposed by
a) Boysen Jensen b) Watson and Crick
c) Watson and Tatum d) Schleiden and Schwann
- DNA molecule is usually
a) single stranded b) Double stranded
c) Single stranded or Double Stranded d) None of the above
- Maximum diameter of DNA double helix is
a) 20A b) 34A c) 20 μ d) 34 μ
- Linear length of DNA along one full turn is
a) 20A b) 2A c) 34 μ d) 34A
- Number of nucleotide pairs in one full turn of DNA are
a) 10 b) 12 c) 9 d) 11
- The exact length of DNA double helix is
a) 1000A b) 10,000A c) 100A d) variable
- Linear length between two pairs of nucleotides in DNA is
a) 3.8A $^\circ$ b) 3.4A $^\circ$ c) 4A $^\circ$ d) 2A $^\circ$
- Two polynucleotide chains of DNA are
a) Identical b) Circular c) Complimentary d) None of the above
- Artificially genes were first prepared by
a) Watson and Crick b) Sulston c) Meischer d) Hargobind Khorana

26. The structural genes of operon concept are responsible for the
a) Synthesis of structural proteins in E. coli b) Synthesis of functional proteins in E. Coli.
c) Both a & b d) None of the above
27. Control genes in operon concept in E. coli is responsible for the
a) Control of structural genes b) Control of functional genes
c) Control of jumping genes d) Control of all the above genes
28. Phenomenon of repression in operon concept is related to the expression of
a) Regulatory gene b) Promoter gene c) Operator gene d) All the above
29. Certain viruses have RNA but no DNA. This indicates that
a) These viruses cannot replicate
b) These viruses do not have heritable information
c) RNA can also transmit hereditary information in these viruses.
d) They can direct the manufacture of proteins but not of nucleic acids.
30. Inheritable gene mutation takes place in
a) Nuclear DNA b) Mitochondrial DNA c) Chloroplast DNA d) All the above
31. The genes that keep on changing their location on chromosomes are
a) Jumping genes b) Split genes c) Duplicate genes d) Pleiotrophic gene
32. m-RNA is synthesized in
a) Nucleus b) Cytoplasm c) Ribosomes d) Polysomes
33. The various steps of protein synthesis was thoroughly studied in
a) Clostridium b) E.coli c) Drosophila d) Tobacco mosaic virus
34. Central dogma of protein synthesis is
a) DNA replication- DNA transcription- m RNA Translation- Protein
b) DNA replication- DNA transcription- RNA Translation -Protein
c) DNA transcription- m RNA Translation- Protein
d) DNA transcription- t RNA Translation- Protein
35. The reverse transcription concept of protein synthesis was first discovered by
a) Temin b) Temin and D. Baltimore c) D. Baltimore d) Holley
36. m-RNA and t-RNA synthesis takes place in
a) Nucleolus b) Cytoplasm c) Ribosomes d)Nucleus
37. The genetic code in m-RNA is translated into protein by the co-ordination of
a) Ribosomes and m-RNA
b) Ribosomes, m-RNA, t-RNA and amino acids
c) Ribosomes, m-RNA, t-RNA, amino acids and enzymes
d) Polysomes, m-RNA, t-RNA, aminoacids and enzyme
38. Carrier of aminoacid in cytoplasm towards m-RNA is by
a) t-RNA b) r-RNA c) m-RNA d) Amino acid

39. DNA is a polymer of
 a) proteins b) nucleotides c) RNA d) carbohydrates
40. Site of protein synthesis in a cell is
 a) Nucleus b) Cytoplasm c) Ribosomes d) Mitochondria
41. The dictionary of genetic code was proposed by
 a) Crick and Watson b) H.G. Khorana c) Nirenberg d) Morgan
42. Amino acids in cytoplasm need activation before transferred to t-RNA and it is helped by
 a) Amino acyl synthetase b) Amino acyl synthetase and Mg^{++}
 c) Amino acyl synthetase, ATP and Mg^{++} d) Amino acyl synthetase and ATP
43. Terminating or stop codons are
 a) UAA, UGA, UGG b) UAA, UAG, UGA c) UAG, UUU, UGG d) UAA, UAG, UGG
44. Amino acids are connected to one another by
 a) Hydrogen bond b) Peptide bond c) Glycosidic linkage d) Covalent bond
45. Genetic code is called degenerate code because
 a) One codon has many meanings b) One codon has only one meaning
 c) Many codons have the same meaning d) There are as many as 64 codons
46. Two proteins having similar amino acid constituents differ because
 a) Sequence of amino acids are different
 b) One is an intrinsic protein and the other is extrinsic
 c) They are formed by different ribosomes
 d) One protein is dependent on the other for its function
47. Nirenberg, Khorana and Holley got the nobel prize, for
 a) Working out 64 codons b) Studying amino acid synthesis
 c) Studying the protein biosynthesis d) None of the above
48. The first experimental proof of the presence of triplet codons was given by
 a) Khorana b) Crick c) Watson d) Nirenberg
49. Master molecule controlling the protein synthesis is –
 a) RNA b) DNA c) Polypeptide chain d) r-RNA
50. Protein synthesis is a complicated process governed by
 a) DNA, RNA b) Ribosomes c) Amino acids d) All the above
51. The formation of New strand of m-RNA is catalysed by
 a) DNA polymerase b) RNA polymerase c) Amino acyl synthetase d) Topoisomerase
52. What is the average life span of m-RNA in eukaryotes
 a) 52 minutes b) 10 minutes c) 30 minutes d) More than one hour

53. Life span of m-RNA in E.coli (Prokaryotes) is
a) Less than one minute b) 2 minutes c) 5 minutes d) More than 10 minutes
54. What is meant by monocistronic m-RNA?
a) Which has only one codon
b) Which has codons for coding one type of aminoacids
c) Which has codons for Synthesising only one protein molecules
d) The m-RNA having the codons for same type of proteins
55. Methionine and formyl Methionine are coded by
a) AGU b) AUG c) GUA d) GAU
56. Central dogma means
a) One way flow of information b) Two way flow of information
c) Multidirectional flow of information d) Reverse flow of information
57. How many codes are blank?
a) One b) Two c) Three d) Four
58. Property of a codon, coding always for a specific aminoacid is called
a) Non-overlapping b) Non-ambiguous c) Degenerate d) Non-Disjunction
59. Enzyme amino acyl synthetase is responsible for
a) Initiating m-RNA synthesis b) Charging t-RNA molecules
c) Combining t-RNA at P-site of m-RNA d) Activation of m-RNA
60. The operator gene of Lac Operon is turned on when lactose molecule binds to
a) Operator gene b) Repressor protein c) Promoter site d) m-RNA