

ST.JOSEPH'S COLLEGE OF ARTS & SCIENCE (AUTONOMOUS)
CUDDALORE – 1
PG & RESEARCH DEPARTMENT OF BIOCHEMISTRY

III-B.Sc Biochemistry

QUESTION BANK

Subject: Molecular Biology Subject code: BC507S

Subject Handled: shift I & II

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PART A

1. Histone protein H2A and H2B are rich in.....
2. Klenow fragment of DNA pol- lacks.....
3. The subunit of RNA polymerase used for promoter recognition is.....
4. The cap structure in eukaryotic mRNA is
5. Which is called is ochre codon
6. The leader sequence in trp operon is made up of.....nucleotides
7. DNA damage can occur through.....
8. The enzymes photolyase is involed in
9. DNA consists of two long polymers of simple units called.....
10. DNA can be twisted like a rope in a process called DNA.....
11. Transcription is the first step leading to.....
12. The portion of the genome that codes for a protein is called....
13. -----operon is an example of negative regulation of gene expression.
14. The unreplicated portion at end of chromosomes is called.....
15. Histone modification involves.....
16. The protein which stabilizes the ssDNA from renaturation is
17. InE.coil, DNA ligase derives energy from.....
18. The subunit of RNA polymerases used for promoter recognition is.....
19. Euraryotic RNA polymerase is sensitive to.....
20. In lac operon lacZ codes for.....
21. The number of repair mechanism that cells normally have
22. Pyrimidine dimmers are repaired by.....
23. Euchromatin actively participates in.....
24. The term C-values refers to the.....

25. Semiconservative mode of replication was proved by
26. Gyrase are involved in.....
27. Rifampic binds to the.....
28. 5'CAP refers to the additions of.....
29. UUG codes for.....
30. Addition of sugar moiety to the polypeptide is.....
31. When DNA is exposed to UV light it result in the formation of.....
32. Lex A protein are involved in
33. SSB protein binds to
34. Psuedouridine is present in
35. Isopropylthiogalactoside is a gratuitous inducer of
36. Transcriptionally active chromatin is termed as.....
37. Isotopic studies on bacterial viruses was carried out by.....
38. The RNA primer in lagging strand is removed by.....
39. Kornberg enzyme is.....
40. The protein involved in the termination of transcription is.....
41. Snurps are involved in.....
42. Initiation codon in prokaryotic translation is.....
43. The inhibitors of protein synthesis are.....
44. ABC exonuclease is involved in.....
45. Lex A repressor is associated with.....
46. Unwinding of DNA at the origin, and synthesis of new strands, forms a.....
47. Microsatellites are often found in..... units.
48. is the DNA region where the transcription initiation takes place.
49.mediates recognition of the codon and provides the corresponding amino acid.
50. Transcription occurs in the cell.....
51. Translation occurs in the.....
52. ___ repair of DNA by a light-dependent enzymatic reaction after damage by ultraviolet irradiation.
53. The enzyme responsible for the synthesis of DNA from RNA is.....
54. The histone proteins in nucleosomes exist as.....
55. Discontinuous mode of replication was proved by.....
56. SSB are involved in.....
57. Rifampicin binds to the.....
58. Coupled transcription and translation occurs in.....
59. UCG codes for.....
60. Addition of 7 methyl guanosineis
61. An aminoacyl t RNA analogue is.....
62. The Eco RI restriction enzyme cleavage produces.....
63. Cot analysis provides an estimate of the.....
64. Enzyme involved in cDNA synthesis is.....

65. Klenow fragment of DNA Pol I lacks.....
66. Okazaki fragments are joined by.....
67. Snurps is involved in.....
68. The cap structure in eukaryotic mRNA is.....
69. Which enzyme is responsible for removing supercoiling of DNA.....
70. The terminator stem in trp operon is made up of..... sequence.
71. AP sites are formed in.....
72. Rec A proteins are involved in.....
73. Transposons are also called as
74. UAA is acodon.
75. Rec a proteins are involved in mechanism.
76. RNA polymerase can initiate transcription at specific DNA sequence known as
77. Repressor proteins are produced by a
78. Pribnow box is present in
79. Anticodon is present in
80. Restriction enzyme are termed as

PART -B

1. What are Nucleosomes?
2. What is heterochromatin?
3. Define Repetitive DNA
4. Write the inhibitors of replication
5. What is Polycistronic mRNA?
6. What is the function of RNA polymerase?
7. Define Anti-codon
8. What is Gratuitous inducer?
9. Explain Palindromic sequence.
10. Define Blunt ends.
11. Define cot value.
12. What are telomeres
13. Mention the role of helicases of replication
14. Name any two inhibitors of replication
15. What is sigma factor
16. What are subunits present in prokaryotic ribosomes?
17. What are introns and exons
18. Write the shine Dalgarno sequence
19. What is the expansion of SNP
20. What is photolyase
21. Define Telomere

22. Define Nucleosomes
23. Define Klenow fragment
24. Define Satellite DNA
25. Define hnRNA
26. Explain Genetic code.
27. Post translational modification
28. what is Pyrimidine dimer?
29. Define centromeres.
30. What are transposons
31. Write a note on replication fork
32. What is pribnow box
33. Define poly A tailing
34. Name the three enzymes that are involved in lac operon
35. What are sticky ends and blunt ends of DNA
36. Define Euchromatin
37. Define SSB proteins
38. What is Poly A tail?
39. What is Operon?
40. What is Stop codons & start codons?
41. What is Sticky ends?
42. Define Recognition site.
43. Define Cot value.
44. What is heterochromatin?
45. Define satellite DNA.
46. What are RNA polymerases?
47. Define RNA genes.
48. What is wobble hypothesis?
49. Write a note on rRNA.
50. What repetitive DNAs?
51. Define genetic code.
52. Define SNP.
53. What is proof reading?
54. Mention the role of gyrase in replication.
55. Name any two inhibitors of replication.
56. What is holo enzyme?
57. What are subunits present in eukaryotic ribosomes?
58. What are introns and exons?
59. Write the Shine Dalgarno sequence.
60. What is the expansion of SOS?
61. What is mutagen?

62. What is C value paradox
63. Explain Repetitive DNA.
64. Explain Post transcription modification.
65. Explain Operon.
66. Explain SNP.

PART C

1. Describe in brief the organization of chromosomes and nucleosomes
2. Differentiate between the DNA polymerases in prokaryotes and eukaryotes
3. Explain in brief the structure of tRNA with suitable illustration
4. What is genetic code ? Discuss the features of genetic codes
5. Write a short note on SNP
6. Give a brief account on the central dogma of molecular biology
7. Give a short account on DNA polymerases
8. Elaborate on DNA binding proteins involved in replication
9. Write brief notes on transposons
10. Explain the organization of lac operon genes
11. Discuss the SOS response in bacteria
12. Write a note on Satellite DNA
13. Discuss the functions of DNA polymerase I
14. Explain wobble hypothesis
15. Mention the mechanism of action of inhibitors of translation process.
16. What are restriction endonucleases? Mention their types
17. Give short notes on repetitive sequences
18. Write the functions of RNA polymerase
19. Write short notes on nucleosomes.
20. Write the functions of prokaryotic RNA polymerases.
21. Explain DNA dependent DNA polymerases?
22. Give a brief account on inhibitors of protein synthesis.
23. What are telomeres? Add a note on their importance.
24. Write notes on highly repetitive sequences.
25. Explain the Rho dependant termination process.
26. What are restriction endonucleases? Mention their types.
27. Explain Hershey and chase experiment on bacteriophages.
28. Write an account on wobble hypothesis.
29. Explain DNA repair by photoreactivation.
30. List out the factors involved in prokaryotic replication.

PART- D

1. Explain in detail the Hershey and chase experiment
2. Describe in detail the semi conservative replication of DNA
3. Describe in detail the prokaryotic transcription and add a note on the inhibitors of transcription
4. Describe the prokaryotic translation
5. How will prove that DNA replication is semi-conservative
6. Describe in detail the events in prokaryotic transcription
7. Discuss the experiments that led to prove that DNA is the genetic material
8. Describe the post transcriptional modification of mRNA
9. Discuss the various repair mechanisms of DNA
10. Discuss the mechanism of lac operon
11. Describe the events in prokaryotic replication
12. Discuss the organization and functions of lac operon genes
13. Elaborate on DNA excision repair mechanisms.
14. Describe the post transcriptional modification of tRNA.
15. Schematically represent the mechanism of translation.
16. Briefly discuss about the process of post translational modification.
17. Discuss the mechanism of trp operon