

**Unit I**

**2 Mark ( Define the following)**

1. Nuclein
2. Genetic material
3. Nucleosides
4. Nucleotides
5. Okazaki fragments
6. Polynucleotide
7. Phosphodiester bond
8. Anti parallel
9. Palindromic DNA
10. Repetative DNA
11. Satellite DNA
12. Polyploid
13. Centromere
14. Heterochromatin
15. Telomeres
16. Chromosomin
17. Mono Cistronic mRNA
18. Polycistronic mRNA
19. Soluble RNA
20. Supernatant RNA
21. Anticodon loop
22. tRNA al
23. Polymerization
24. RNA Primer
25. Ligase
26. Restriction enzymes
27. Klenow enzyme
28. T4 dna polymerase
29. Polynucleotide kinase
30. Alkaline phosphatase
31. Cohesive end ligation
32. Blent end ligation
33. Linkers
34. Adaptors
35. Homopolmer tailing
36. Nick translation
37. Probe
38. Radio active probe
39. Non radio active probe
40. Dna foot printing

**5 Mark**

1. Given account on restriction enzymes.
2. Explain in detail about labelling of dna
3. Explain in detail about colony hybridization.
4. Explain about electromobility shift assay
5. Explain about methyl interference assay.

### **10 Mark**

1. Explain about the hybridization techniques.
2. Explain about northern blotting
3. Explain about southern blotting
4. An account on Dna protein interactions.
5. Explain in detail about dna foot printing

### **Unit II**

#### **2 Mark ( Define the following)**

41. Vector
42. Plasmid
43. Col Plasmid
44. F Plasmid
45. Ri Plasmid
46. Ti Plasmid
47. Copy Number
48. PBR322
49. Transposons
50. Phagemids
51. Blue script vectors
52. Bacteriophage.
53. Lambda phage vectors
54. EMBL
55. Cosmid
56. Fosmid
57. YAC
58. BAC
59. Bacculo virus vectors
60. Retroviral vectors
61. Expression Vectors
62. His-tag
63. GST-tag
64. Yeast vectors
65. Shuttle vectors
66. Pichia vectors
67. MBP – tag
68. Protein based vectors

### **5 Mark**

6. Given account on structure of Plasmids and their Character
7. Discuss about the Difference between the Natural and Artificial Plasmid
8. Give an Brief account on Construction of Plasmid
9. Explain in detail about YAC

10. Explain in detail about BAC
11. Discuss about Protein based vectors
12. Explain about animal based vectors
13. Explain about plant based vectors
14. Explain in detail about expression based vectors.

### **10 Mark**

6. Explain about the types of Plasmids
7. Give an detailed note on Plasmid Transfer and its applications
8. Describe about the Transposable genetic elements in Prokaryotes and Eukaryotes and their uses
9. Explain about cosmid and its types.
10. Explain about artificial chromosomes.

### **Unit II**

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8. Anti parallel
9. Palindromic DNA
10. Repetative DNA
11. Satellite DNA
12. Polyploid
13. Centromere
14. Heterochromatin
15. Telomeres
16. Chromosomins
17. Mono Cistronic mRNA
18. Polycistronic mRNA
19. Soluble RNA
20. Supernatant RNA
21. Anticodon loop
22. tRNA al
23. Polymerization
24. RNA Primer
25. Ligase

### **5 Mark**

1. Describe about the Nucleosides
2. Give an account on Nucleotides
3. Write a note on Properties and function of DNA
4. Brief account on Types of DNA

5. Describe about the Chromosome structure and function
6. Give an account on types of Chromosome
7. Discuss about the differentiation between DNA and RNA
8. Describe about the Rolling Circle mechanism of DNA replication
9. Give an account on inhibition of DNA repair

### **10 Mark**

1. Explain about the Specialized chromosomes
2. What is DNA replication and its types
3. Explain about the types of RNA and its function
4. Explain about the DNA replication in Eukaryotes
5. Describe about the DNA repair mechanism

### **Unit III**

#### **2 Mark ( Define the following)**

1. Transcription
2. Translation
3. Central Dogma
4. Promoter
5. Initiation site
6. Amino Acyl Adenylate
7. Elongation
8. Translocase
9. Anti termination
10. Post Transcriptional modification
11. Post Trnaslational Modification
12. hnRNA
13. Poly Adenylation
14. Catalytic RNA
15. Codon
16. Anticodon
17. Protein Stability
18. Wobble Base Pairs
19. Splicing
20. Site directed mutagenesis.
- 21. Conjugation**
- 22. Transfection**
- 23. Transduction**
24. Gene libraries
25. c dna library
26. Genomic cloning

#### **5 Mark**

1. Give a brief note on Plyadenylation
2. Describe about the RNA Splicing
3. How the post Transcriptional modification occur?
4. Describe about the Post translational modification
5. Explain in detail about site directed mutagenesis.
6. Isolation of foreign dna into host cell.

7. Isolation of mRNA and tRNA procedure.

### **10 Mark**

1. What is Genetic code? Explain the Characterization of Genetic code.
2. Explain about the Transcription
3. Give an detailed note on Translation
4. Explain about the Ribosome composition and its assembly.
5. Explain in detail about genomic cloning.
6. Explain in detail about cDNA cloning and libraries.
7. Explain in detail about protein – protein interactions cloning.
8. Discuss about yeast two hybrid system.
9. Explain in detail about gene expression.

### **Unit IV**

#### **2 Mark ( Define the following)**

1. Gene Transfer
2. Transformation
3. Gene Amplification
4. Inducer
5. Repressor
6. House keeping genes
7. Ara Operon
8. Operon
9. Gene Dosage
10. Sigma Factor
11. Anti Sense RNA
12. DNA finger printing.
13. DNA profiling
14. Multiplex pcr
15. Real time pcr
16. Touch down pcr
17. Hot start pcr
18. SSCP
19. DGGE
20. RFLP
21. OLA
22. MCC
23. ASA
24. PTT
25. T-vectors.

#### **5 Mark**

1. Discuss about the pcr working principle and its applications.
2. Short note on SSCP
3. Write the role and application of RFLP.
4. Explain in detail about DGGE and OLA.
5. Explain in detail about MCC, ASA and PTT detection.

## 10 Mark

1. Explain in detail about PCR and its types.
2. Explain in detail about proof reading enzymes.
3. Discuss about pcr in gene recombination.
4. Explain in detail about pcr In molecular diagnosis.
5. Discuss about primer design.

## Unit V

### 2 Mark ( Define the following)

1. Transgenic animals
2. Transgenic Plants
3. IVF
4. Herbicides
5. Pesticides
6. Organic products
7. DNA Vaccines.
8. Pharmaceutical products.
9. Insulin.
10. Transgenic genes
11. Gene therapy
12. Gene knock outs
13. Dna sequencing
14. Rna sequencing
15. Gene silencing
16. Oligonucleotides
17. Micro rna vectors
18. Gene replacement
19. Gene targeting
20. Protein array
21. Si RNA vectors.

### 5 Mark

1. Methods of transgenic animal production.
2. Explain in detail about Dna sequencing
3. Explain in detail about Rna sequencing
4. Discuss about gene silencing
5. Explain about chemical synthesis of oligonucleotides.

### 10 Mark

1. Explain about the DNA vaccine production
2. Explain about the Designing of Vaccine
3. Explain the human genome project.
4. Explain about somatic and germ line therapy
5. Discuss about protein array.
6. Explain in detail about gene knockout mice.
7. Explain in detail about principle, construction and applications of sirna vectors.

