



Rayat Shikshan Sanstha's
D. P. Bhosale College, Koregaon

B.Sc. Part III Semester V

Paper X: Molecular Cell Biology and Animal Biotechnology

Question Bank

Multiple Choice Questions

1. What is Molecular Biology?
 - a) Deals with the physical structures and processes of biological events
 - b) Deals with the chemical structures and processes of chemical events
 - c) Deals with the physical structures and processes of chemical events
 - d) Deals with the chemical structures and processes of biological events
2. Which of the following is DNA made up of?
 - a) Adenine – Guanine
 - b) Cytosine – Thymine
 - c) Both Adenine – Guanine & Cytosine – Thymine
 - d) None of the mentioned
3. Who is known as the father of Molecular biology?
 - a) Linus Carl Pauling
 - b) James Watson
 - c) Francis H. Crick
 - d) Mahlon B. Hoagland
4. Proteins are made up of which of the following?
 - a) Nucleic acids
 - b) Amino acids
 - c) Nuclease
 - d) None of the mentioned
5. Which of the following is RNA made up of?
 - a) Adenine, Cytosine, Guanine, and Uracil
 - b) Adenine, Guanine, Cytosine, and Thymine
 - c) Adenine, Guanine, Uracil, and Thymine
 - d) Adenine, Uracil, Cytosine, and Thymine

6. Which of the following is a type of RNA involved in protein synthesis?
a) snRNA b) rRNA c) yRNA d) dsRNA
7. How many unusual bases are observed in a tRNA molecule?
a) 1 b) 3 c) 5 d) 0
8. Which of the following parts of the mRNA determines the specificity of the amino acid attached?
a) Acceptor stem b) D loop c) Ψ U loop d) Variable loop
9. Which of the following is wrongly paired?
a) Nucleic acid – hydrogen bond b) Polysaccharide – glycosidic bond
c) Proteins – peptide bond d) Phospholipids –phosphate linkage
10. Which of the following factors do not provide to the separation of DNA fragments during electrophoresis?
a) Size b) Matrix density c) Chargaff's rule d) Ethidium bromide
11. Which of the following is the slowest process among the following?
a) Splicing b) Translation c) Transcription d) Replication
12. Which of the following is not a component of the nucleic acid backbone?
a) Nucleotide b) Phosphate group
c) Pentose sugar d) Phosphodiesterase bond
13. Which of the following does not take part in gene expression?
a) Transcription b) RNA processing c) Replication d) Translation
14. Which of the following is a character of ORF?
a) Non – overlapping b) 3 – nucleotide codons
c) Contiguous d) Intron
15. Which of the following does not contribute to the stability of tRNA?
a) Hydrogen bonding
b) Hydrophobic interactions
c) Base and sugar-phosphate backbone interaction
d) Base pairing
16. This best describes a polysome
a) active site for synthesis of lipids b) active site for synthesis of proteins
c) active site for synthesis of DNA d) all of these
17. In protein synthesis, translocation is initiated with the movement of

- a) tRNA from P-site to the A-site
 - b) dipeptidyl tRNA from A-site to P-site
 - c) tRNA from A-site to P-site
 - d) tRNA from P-site to E-site
18. The process by which protein synthesis from genetic code occurs is best described by
- a) transcription b) translation c) replication d) reproduction
19. This is incorrect about the nature of genetic code.
- Codons are
- a) universal b) overlapping c) comma less d) triplet
20. This elongation factor is known as translocase
- a) EFG b) EF2 c) both (a) and (b) d) EF-Tu and EF-Ts
21. This drug inhibits the initiation step of translation
- a) ricin b) tetracycline c) streptomycin d) cyclohexylamine
22. In translation, this is not an essential component
- a) amino acid b) ligase c) mRNA d) anticodon
23. This identifies a particular amino acid and its cognate tRNA molecule
- a) topoisomerase b) rRNA c) Ribosome d) tRNA synthetase
24. Protein synthesis corresponds to the process of
- a) duplicating required DNA for synthesis of proteins
 - b) formation of amino acids from mRNA
 - c) formation of mRNA from DNA template
 - d) formation of amino acids from DNA template directly
25. This is considered to be the start codon
- a) AGG b) UAG c) GUG d) AUG
26. Conversion of messages carried by mRNA into amino acid sequences is called_____
- a) Replication b) DNA repair c) Translation d) Transcription
27. The following set of RNA is required in the translation process except one, mark the INCORRECT?
- a) Si RNA b) rRNA c) mRNA d) tRNA
28. What is the size of the prokaryotic ribosome?
- a) 80S b) 70S c) 40S d) 60S

29. Name the sequence of RNA, which is recognized by a small subunit of the ribosome.
- a) Rho utilization site
 - b) Downstream sequence
 - c) Upstream sequence
 - d) Shine Dalgarno sequence
30. Which of the following is considered as a start codon?
- a) AUG
 - b) GUG
 - c) UAG
 - d) AGG
31. Mark the one, which is NOT a stop codon?
- a) UAA
 - b) UAG
 - c) UGA
 - d) GGA
32. Which of the following is not true to the nature of the genetic code?
- a) Codon is triplet
 - b) Codons are commaless
 - c) Codons are overlapping
 - d) Codons are universal
33. Who explained the wobble hypothesis?
- a) Darwin
 - b) Watson and Crick
 - c) Samuel B. Weiss
 - d) Nirenberg
34. Which of the following recognize a specific amino acid and its cognate t-RNA molecule?
- a) t-RNA synthetase
 - b) Ribosome
 - c) r-RNA
 - d) Topoisomerase
35. Name the inhibitor which blocks translation in both prokaryotes as well as eukaryotes?
- a) Chlorphenicol
 - b) Tetracycline
 - c) Puromycin
 - d) Streptomycin
36. Which of the following inhibitor block translation in eukaryotes?
- a) Cyclohexamine
 - b) Tetracycline
 - c) Puromycin
 - d) Streptomycin
37. Name the drug which inhibits the initiation step of translation.
- a) Cyclohexamine
 - b) Tetracycline
 - c) Ricin
 - d) Streptomycin
38. What is the major difference between cloning vectors and primary vectors?
- a) Selectable marker
 - b) DNA inserts
 - c) Presence of promoter
 - d) Presence of two Ori
39. Which of the following is the primary use of an expression vector?
- a) DNA library
 - b) DNA purification
 - c) Protein production
 - d) DNA cloning
40. The process by which every type of transformant can be identified is _____
- a) Replica plating
 - b) Hybridization
 - c) Blotting
 - d) Insertional inactivation
41. Southern Blot is used to detect.....
- a) RNA
 - b) DNA
 - c) Proteins
 - d) Chromosomes
42. The method used to identify specific DNA sequences in bacterial colonies is known as

- a) Colony Hybridization
- b) In-Situ Hybridization
- c) Dot Blot Technique
- d) Western Blotting

43. Southern hybridization is

- a) Used to identify a specific protein
- b) Used to identify a specific DNA
- c) Used to identify a specific RNA
- d) Used to identify both DNA and RNA

44. Which of the following statements about southern blotting is correct?

- a) Developed by E. M. Southern
- b) DNA-DNA hybridization is the basis
- c) Transfer of DNA fragments from gel to the membrane is called blotting
- d) All of these

45. Southern blotting has a variety of applications include?

- a) DNA fingerprinting
- b) Preparation of RFLP maps
- c) Identification of transferred genes
- d) All of these

46. The method for detecting the presence of DNA or RNA in a non-fractionated DNA sample is known as

- a) Colony Hybridization
- b) In Situ Hybridization
- c) Dot Blot Technique
- d) Western Blotting

47. Northern hybridization is

- a) Used to identify a specific protein
- b) Used to identify a specific DNA
- c) Used to identify a specific RNA
- d) Used to identify both DNA and RNA

48. In Northern hybridization probe hybridization forms

- a) DNA: DNA hybrid
- b) RNA: DNA hybrid
- c) Both a and b
- d) None of these

49. Except for one, there are no differences in procedure between Northern and Southern hybridization.

- a) DBM membrane is used in northern hybridization
- b) RNA: DNA hybrids are formed in northern hybridization
- c) Initially fragments are separated by electrophoresis in northern hybridization
- d) DNA denaturation is required before blotting in Southern hybridization

50. Southern hybridization is

- a) Used to identify a specific protein
 - b) Used to identify a specific DNA
 - c) Used to identify a specific RNA
 - d) Used to identify both DNA and RNA
51. In Western blotting
- a) Agarose gel is commonly used
 - b) Polyacrylamide gel is commonly used
 - c) Both a and b
 - d) High-resolution gels
52. For glycoproteins, the most commonly used probe is
- a) Antibody
 - b) Lectin
 - c) Antigens
 - d) Interferon
53. For protein detection, the most commonly used probe is
- a) Antibody
 - b) Lectin
 - c) Antigens
 - d) Interferons
54. ELISA is based on
- a) Antigen-antibody interaction
 - b) Antigen-protein interaction
 - c) Lectin- antibody interaction
 - d) All of these
55. The method for locating specific genes in chromosomes is known as
- a) Colony hybridization
 - b) In situ hybridization
 - c) Dot blot technique
 - d) Western blotting
56. The separation of charged molecules under the influence of an electric current is known as
- a) Colony hybridization
 - b) Electrophoresis
 - c) Dot blot technique
 - d) Western blotting
57. Eukaryotic entities
- a) in the presence of a cAMP molecule, it carries out protein synthesis
 - b) have only operons assisting in gene expression
 - c) transcription takes place in the nucleus and translation in the cytoplasm
 - d) transcription occurs in the cytoplasm and translation in nucleus
58. A genomic DNA possesses functioning units, a group of genes under the influence of promoters known as
- a) genes
 - b) operons
 - c) anticodon
 - d) codon
59. All regulatory proteins possess a common DNA binding motif that is specific flexes in their protein chains permitting them to interlock with
- a) the outside groove of DNA helix
 - b) the major groove of DNA helix

- c) the minor groove of DNA helix d) the inner groove of DNA helix
60. Regulatory proteins turn transcription off through binding to a site rapidly at the front of the promoter and many times even overlaps the promoter, this site is the
- a) regulatory site b) operator site
c) suppressor site d) transcriptional control site
61. Seemingly, the vertebrate cells contain a protein which binds to clusters of 5-methylcytosine ensuring that the bound gene stays in the “off” position. This regulation on the role of gene regulation is an outcome of
- a) Methylation b) Translation c) Enhancer expression d) operator suppression
62. The transcriptional gene control in eukaryotes is mediated by
- a) metabolites that bind to the cis-acting elements
b) trans-acting factors failing to bind to cis-acting elements
c) trans-acting factors binding to cis-acting elements
d) repressor proteins that bind to operator sites
63. Basic tools of genetic regulation are the ability of some proteins to bind to specific
- a) regulatory DNA sequences b) regulatory RNA sequences
c) enzymes of cells d) promoter portions of genes
64. In the regulation of gene expression, this is an incorrect statement
- a) in the bacteria, it permits to replicate with no control
b) in the bacteria, it permits to adapt to changing environments
c) permits the maintenance of homeostasis in multicellular entities
d) permits the functioning of multicellular entities on the whole
65. There are these many histones in the core of a nucleosome
- a) 8 b) 6 c) 4 d) 2
66. In eukaryotes and bacteria, the most common form of regulation is
- a) promoter control b) translation control
c) repressor control d) transcriptional control
67. Lactose can be a nutrient source for bacteria, it is a _____
- a) monosaccharide b) lipid c) disaccharide d) polysaccharide
68. The first step in catabolism of lactose by the bacteria is _____ of a linkage bond.
- a) hydrolysis b) oxidation c) reduction d) alkylation

69. Enzymes of _____ are clustered together in a bacterial operon.
a) metabolic pathway b) transcription c) transfusion d) transformation
70. When was the operation mechanism of a bacterial operon first elucidated?
a) 1961 b) 1971 c) 1981 d) 1991
71. In a bacterial operon, which is located downstream of the structural genes?
a) operator b) inducer c) promoter d) regulatory gene
72. Which is a DNA-binding protein?
a) repressor b) operator c) luciferase d) thymidine
73. The repressor protein is encoded by _____
a) regulatory gene b) structural gene c) transfer-DNA d) ribosomal-RNA
74. The capability of the repressor to bind the operator depends upon _____
a) pH b) conformation c) temperature d) moisture
75. The lac operon consists of ____ structural genes.
a) 1 b) 2 c) 3 d) 4
76. Which of the following acts as an inducer in the lac operon?
a) glucose b) tryptophan c) lactose d) galactose
77. The lac operon is under positive control, a phenomenon called _____
a) regulation b) mutation c) lactose-effect d) glucose-effect
78. Which of the following acts as a co-repressor in tryptophan operon?
a) tryptophan b) tyrosine c) glucose d) lactose
79. In bacteria, mRNAs bound to small metabolites are called _____
a) euchromatin b) riboswitches c) heterochromatin d) nucleosome
80. What is the reaction in DNA replication catalysed by DNA ligase?
a) Addition of new nucleotides to the leading strand
b) Addition of new nucleotide to the lagging strand
c) Formation of a phosphodiester bond between the 3'-OH of one Okazaki fragment and the 5'-phosphate of the next on the lagging strand
d) Base pairing of the template and the newly formed DNA strand
81. Which of the following enzymes remove supercoiling in replicating DNA ahead of the replication fork?
a) DNA polymerases b) Helicases c) Primases d) Topoisomerases

82. DNA unwinding is done by _____
a) Ligase b) Helicase c) Topoisomerase d) Hexonuclease
83. Which of the following enzymes is the principal replication enzyme in E. coli?
a) DNA polymerase I b) DNA polymerase II
c) DNA polymerase III d) None of the mentioned
84. Which enzyme used to join bits of DNA?
a) DNA polymerase b) DNA ligase c) Endonuclease d) Primase
85. During replication, Okazaki fragments elongate
a) leading strand towards the replication fork
b) lagging strand towards the replication fork
c) leading strand away from the replication fork
d) lagging strand away from the replication fork
86. What is a mode of replication in E.coli?
a) Intermediate b) Dispersive c) Conservative d) Semiconservative
87. What is the origin of replication?
a) Particular site at which DNA replication starts
b) Site which prevents initiation
c) Random location on the DNA
d) Site at which replication terminated
88. Which of the following has the self-repairing mechanisms?
a) DNA and RNA b) DNA, RNA and protein
c) Only DNA d) DNA and proteins
89. What is the function of enzyme involved in base excision repair?
a) Addition of correct base b) Addition of correct nucleotide
c) Removal of incorrect base d) Removal of phosphodiester bond
90. Why recombinational repair system is called double strand break repair?
a) Both strands are broken b) One strand is broken
c) No strand is broken d) Both strand act as template
91. In SOS repair system cleavage of LexA and UmuD is mediated by _____
a) RecB b) RecA c) RecC d) UvrA

92. The okazaki fragments are present onstrand
a) Template b) leading c) lagging d) all the above
93. Replication occurs in...phase
a) G1 b) S c) G2 d) M
94. In replication of DNA synthesis of new strand always occurs in the direction
a) 5' - 3' b) 3' -5' c) both d) forward
95. DNA polymeraseremoves RNA primer and replaces DNA
a) I b) II c) III d) IV
96. The genetic code is _____
a) Triplet b) Quadruplet c) Doublet d) Singlet
97. A codon contains how many nucleotides?
a) 1 b) 2 c) 3 d) 4
98. The initiation codon is _____
a) AUG b) UAA c) UAG d) UGA
99. The termination codon is not _____
a) AUG b) UAA c) UAG d) UGA
100. How many t-RNAs are required to translate all 61 codons?
a) 31 b) 32 c) 30 d) 29
101. Which position of a codon is said to wobble?
a) First b) Second c) Third d) Fourth
102. The genetic code translated the language of _____
a) Proteins into that of RNA b) Amino acids into that of RNA
c) RNA into that of proteins d) RNA into that of DNA
103. Wobble hypothesis was first proposed by _____
a) Nirenberg b) Watson and Crick c) Watson d) Crick
104. The operon hypothesis was discovered by
a) Watson and Crick b) Mendel c) Jacob and Monod d)niren berg
105. The structural gene ... are responsible for the synthesis of galactoside permease enzyme
a) z b) y c) a d) all the above
106. The structural gene z are responsible for the synthesis of enzyme
a) thiogalactoside b) galactoside permease

- c)transacetylase d) b-galactosidase
107. The sequence of the structural genes in lac operon are.....
- a) lacA-lacZ-lacY b) lacZ-lacA-lacY
c)lacZ-lacY-lacA d) lacA-lacY-lacZ
108. Lac operon will be turned on when.....
- a) Lactose is less than glucose b) Lactose is less than medium
c)Glucose is enough in the medium d) Lactose is more than glucose
109. Lac operon is an example of.....
- a) Only positive regulation
b) Only negative regulation
c) both positive and negative regulation
d) sometimes positive sometime negative
110. Synthesis of RNA from DNA template is called____
- a) Transcription b) Translation c) Transition d) Transversion
111. Simple proteins are polymers of _____
- a) Sugars b) Amino Acids c) Fatty acids d) Globular proteins
112. Methionine is specified by initiation codon_____to begin polypeptide chain synthesis.
- a) AUG b) UGA c) AAA d) AGU
113. The enzyme required for transcription is_____
- a) Restriction enzyme b) DNA polymerase c) RNA polymerase d) RNAase
114. is a process in which RNA is synthesized from DNA template.
- a) Transcription b) Translation c) Transition d) Transformation
115. Individual amino acid during protein synthesis specified bycodons.
- a) 3 b) 20 c) 64 d) 61
116. Translation is the
- a) Synthesis of protein from a mRNA b) Synthesis of DNA from a mRNA
c) Synthesis of RNA from a mRNA d) Synthesis of protein from a DNA
117. The process of formation of RNA is known as_____
- a) Replication b) DNA repair c) Translation d) Transcription
118. Which is INCORRECT statement about the transcription unit?
- a) It is a transcribed segment of DNA

- b) Eukaryotes have monocistronic transcription unit
 - c) Prokaryotes also have a monocistronic transcription unit
 - d) Immediate product of transcription is primary transcript
119. Which of the following is TRUE for the RNA polymerase activity?
- a) DNA dependent DNA synthesis b) Direct repair
 - c) DNA dependent RNA synthesis d) RNA dependent RNA synthesis
120. Who discovered RNA polymerase?
- a) Samuel B. Weiss b) Nirenberg c) Watson and Crick d) Darwin
121. Which of the following ensure stable binding of RNA polymerase at the promoter site?
- a) DNA photolyase b) Sigma factor c) DNA glycosylase d) RecA
122. What is the work of the sigma factor in transcription?
- a) Helicase action b) Transcription initiation
 - c) Transcription elongation d) Transcription termination
123. factor is used for promoter recognition
- a) Sigma 32 b) Sigma 70 c) Sigma 60 d) Sigma 40
124. base pairs of DNA is transcribed by RNA polymerase in one go.
- a) 5-6 b) 3 c) 4 d) 7-8
125. Which of the following transcription termination technique has RNA dependent ATPase activity?
- a) Intercalating agents b) Rho dependent
 - c) Rho independent d) Rifampicin
126. Shine-Dalgarno sequence is present in the _____
- a) hnRNA b) mRNA c) tRNA d) siRNA
127. The first amino acid incorporated at the N-terminus of polypeptide is
- a) methionine b) cysteine c) tryptophan d) valine.
128. Translation is the.....
- a) Synthesis of DNA from a mRNA template
 - b) Synthesis of protein from a mRNA template
 - c) Synthesis of RNA from a mRNA template
 - d) Synthesis of RNA from a DNA template
129. Translation occurs in.....

- a) Nucleus b) Cytoplasm c) Nucleolus d) Lysosome
130. During translation, protein are synthesized
- a) By ribosome using the information on DNA
b) By lysosome using the information on DNA
c) By ribosome using the information on mRNA
d) By ribosome using the information on tRNA
131.molecule serves as an adaptor molecule during protein synthesis
- a) mRNA b) tRNA c) rRNA d) mRNA and tRNA
132. In prokaryotes, the ribosomal binding site on mRNA is called.....
- a) Hogness sequence b) Shine-dalgarno sequence
c) N-formyl methionine d) all of these
133.is the energy rich molecule requires for initiation of translation
- a) ATP b) GTP c) CTP d) AMP
134. In eukaryotes, translation is initiated by binding of ribosome to the
- a) Pribnows box b) Hogness box c) 5'cap d) poly A tail
135. The 70S ribosome has.....binding sites of aminoacyl RNA
- a) A site b) P site c) E site d) all the above
136. In translation process, ribosome moves on mRNA in.....direction.
- a) 5'-3' b) 3'-5' c) reverse d) both a and b
137. Which of the following is not termination codon.....
- a) UAA b) AUG c) UAG d) UGA
138. In splicing.....are removed to form mature mRNA.
- a) Exon b) Intron c) primers d) sequence
139. Restriction endonuclease produce.....cuts.
- a) External b) internal c) internal and external d)at one end
140. Cloning vector are DNA molecules that can carry
- a) Foreign DNA fragment b) Chromosome
c) Foreign protein d) Enzyme
141. Select the wrong statement about plasmids?
- a) It is extrachromosomal b) It is double stranded
c) Its replication depends upon host cell d) It is closed and circular DNA
142. What does PCR stand for?

- a) Polymerase Chronic Reagent b) Principle Chorionic Reliability
c) Polymerase Chain Reaction d) Probably Cannot React
143. A method used to make millions of copies of a specific segment of DNA from a very small amount of DNA.
- a) DNA Fingerprint b) Electrophoresis
c) Polymerase Chain Reaction d) Restriction Enzyme
144. Southern blotting is
- a) Attachment of probes to DNA fragments
b) Transfer of DNA fragments from electrophoretic gel to a nitrocellulose sheet
c) Comparison of DNA fragments to two sources
d) Transfer of DNA fragments to electrophoretic gel from cellulose membrane
145. The polymerase chain reaction is _____.
- a) It is a DNA sequencing technique.
b) It is a DNA degradation technique
c) It is a DNA amplification technique
d) All of the above
146. Denaturation is the process of _____.
- a) Heating between 72°C b) Heating between 40 to 60°C
c) Heating between 90 to 98°C d) None of the above
147. In genome Southern blotting can be used to identify _____.
- a) Protein b) number of sequence
c) DNA fragments d) RNA sequences
148. Restriction enzyme is known as
- a) Molecular Scissor b) Molecular Knife
c) Molecular cutter d) All the above
149. Plasmids replicate independently due to the presence of an.....
- a) origin of replication b) vector c) markers d) polylinker site
150. The lambda phage consists of head
- a) circular b) rectangular c) icosahedral d) triangular
151. The recognition site consists ofbase pairs.
- a) 4-8 b) 2-3 c) 5 d) 10

152. The DNA that carries the desired gene to the host cell is called as.....
 a) Template b) cloning vector c) bacteria d) all of these
153. In nomenclature of restriction enzyme EcoRI, 'co' is name of.....
 a) Genus b) Species c) subspecies d) all of these
154. The single stranded extensions of lambda DNA are known as
 a) complementary site b) cos ends c) ss DNA d) both a and b
155. Foreign DNA upto kb size can cloned in cosmid vectors
 a) 5 b) 70 c) 45 d) 50
156. A phagemid is a hybrid of a
 a) plasmid and f1 phage DNA b) plasmid and cosmid
 c) two plasmids d) plasmid and bacteria
157. The rDNA can be delivered into bacterial cell by
 a) Transformation b) transduction c) electroporation d) all of these
158. In the process of transformation the competent cell can intake rDNA with the size.....
 a) 5-15kbp b) 5bp c) 45kbs d) 20 kbp
159. To introduce rDNA into *E.coli* cells rDNA is treated with.....
 a) CaCl₂ b) NaCl c) Calcium carbonate d) all the above
160. In electroporation method to introduce rDNA into *E.coli* cellskilovolt/cm electric pulse is generate between electrodes for 4.6 milliseconds.
 a) 2.5 b) 8.5 c) 5 d) 12
161. Northern blotting is introduced by
 a) Ed Southern b) Nothern c) Alwine d) Watson
162. The mRNA present in the agarose gel are transformed to.....filter paper by the blotting method.
 a) Nitrocellulose c) Cellulase
 c) Whatmann d) amino benzyloxymethyl
163. Northern blotting is used in separation and identification of.....
 a) DNA b) Protein c) RNA d) Gene
164. The transfer of protein from electrophoresed gel to nitrocellulose filter is called asblotting.
 a) Southern b) northern c) western d) all the above

165. The gel used in western blotting is.....
- a) SDS-PAGE b) Agarose c) starch d) Native
166. The ideal cloning vector have
- a) Origin of replication b) markers c) polylinker site d) all the above
167. Thermostable DNA polymerase used in PCR is.....
- a) Taq polymerase b) pfu polymerase
- c) vent polymerase d) DNA polymerase III
168. Amp^r isof cloning vector
- a) Origin of replication b) marker c) polylinker site d) vector

Long Questions

1. What is replication? Describe in details process of semi conservative replication.
2. Describe process of transcription in eukaryotes.
3. Describe process of transcription in prokaryotes.
4. Describe process of translation in eukaryotes.
5. Describe process of post transcriptional modification in RNA.
6. Describe process of protein formation.
7. Explain lac operon concept of gene expression.
8. What is genetic code? Describe properties of genetic code.
9. Describe cloning vectors.
10. Describe Polymerase Chain Reaction.
11. Describe DNA damage and repair mechanism

Write short Notes on following

- 1) DNA microarray
- 2) PCR
- 3) Southern blotting
- 4) Northern blotting
- 5) Western blotting
- 6) cDNA libraries
- 7) Restriction enzymes

- 8) RNA polymerase
- 9) Wobble hypothesis
- 10) Properties of genetic code
- 11) Lac operon
- 12) DNA damage
- 13) Semiconservative replication