Chapter 02 Molecular Basis of Inheritance

TOPIC WISE QUESTIONS

THE DNA, THE SEARCH FOR GENETIC MATERIAL, CENTRAL DOGMA, DNA PACKAGING, DNA REPLICATION

Q.1 Adjacent nucleotides in a polynucleotide chain are joined by:
(1) N-glycosidic bond (2) Phosphodiester bond
(3) O-glycosidic bond (4) Hydrogen bond

Q.2 Sugars are attached to the pyrimidines by the formation of:
(1) Hydrogen bond
(2) N-glycosidic bond
(3) Phosphoester bond
(4) O-glycosidic bond

Q.3 Cytidine is a:
(1) Nucleoside
(2) Nitrogen base
(3) Nucleotide
(4) Common dinucleotide in DNA and RNA

Q.4 Which of the following structures are present in core particle of nucleosome?
(1) Octamer of histone proteins
(2) 200 bp of DNA
(3) Non-histone proteins
(4) Linker DNA

Q.5 Packaging of DNA helix:
(1) Involves polyamines in eukaryotes
(2) Occurs with the help of NHC proteins only
(3) Requires acidic proteins that help in coiling of DNA in prokaryotes
(4) Is more complex in eukaryotes than prokaryotes

Q.6 Which of the following radioactive isotopes were utilised for labelling protein and DNA in transduction experiment respectively?
(1) ^{32}P, ^{35}P (2) ^{35}S, ^{35}P
(3) ^{35}S, ^{32}P (4) ^{32}S, ^{36}P

Q.7 Unwinding of DNA creates tension which is released by enzyme:
(1) Helicase (2) Topoisomerase
(3) Primase (4) Ligase

Q.8 During polymerisation of deoxyribonucleoside triphosphates in bacteria which of the following enzyme is mainly required?
(1) DNA dependent RNA polymerase
(2) DNA dependent DNA polymerase
(3) RNA dependent DNA polymerase
(4) DNA gyrase

Q.9 DNA polymerase catalyses polymerisation in:
(1) Ribonucleotides
(2) 5' $\rightarrow$ 3' direction
(3) 3' $\rightarrow$ 5' direction
(4) Deoxyribonucleosides

Q.10 During DNA replication which of the following does not act as substrates?
(1) dATP (2) dCTP
(3) dUTP (4) dGTP

Q.11 Out of the two strands of DNA one is carrying genetic information for transcription and it is called:
(1) Coding strand
(2) Non template strand
(3) Sense strand
(4) Template strand

Q.12 If the sequence of one strand of DNA is 5' A T G C A T C G 3', find the sequence of complementary strand in 5' $\rightarrow$ 3' direction:
(1) T A C G T A G C
(2) C G A T G C A T
(3) A T G C A T C G

(4) A T C G T A C G

Q.13 Synthesis of leading and lagging strand require:
(1) Single primer
(2) Single and many primers respectively
(3) Many and single primers respectively
(4) Many primers

Q.14 Which of the following feature is **correct** for bacteria ?
(1) Presence of intervening sequences in DNA
(2) DNA does not show coiling
(3) Linear ss-DNA representing single chromosome
(4) DNA can be chromosomal as well as extrachromosomal

Q.15 The DNA strand showing replication using Okazaki fragments also shows:
(1) Continuous growth in 5' $\rightarrow$ 3' direction
(2) Discontinuous growth on 5' $\rightarrow$ 3' parental strand
(3) Discontinuous growth on 3' $\rightarrow$ 5' parental strand
(4) Involvement of one primer only

Q.16 In *E.coli*, the average rate of polymerization has to be approximately
(1) 500 bp/Sec. (2) 2000 bp/Sec.
(3) 4500 bp/Sec. (4) 5000 bp/Sec.

Q.17 If there are 10,000 base pairs in DNA, then its length :
(1) 340 nm (2) 3400 nm
(3) 34000 nm (4) 340000 nm

Q.18 Back bone in structure of DNA molecule is made up of :
(1) Deoxyribose Sugar and phosphate
(2) Hexose sugar and phosphate
(3) Purine and pyrimidine
(4) Sugar and phosphate

Q.19 Nucleotide is :
(1) N_2 - base, pentose sugar and phosphoric acid
(2) Nitrogen, Hexose sugar and phosphoric acid
(3) Nitrogen base, pentose sugar
(4) Nitrogen base, trioses and phosphoric acid

Q.20 A typical nucleosome contains
(1) 600 bp (2) 400 bp
(3) 200 bp (4) 100 bp

Q.21 A nucleic acid contains thymine or methylated uracil then it should be:
(1) DNA
(2) RNA
(3) Either DNA or RNA
(4) RNA of bacteria

Q.22 Prokaryotic genetic system contains:
(1) DNA & histones
(2) RNA & histones
(3) Either DNA or histones
(4) DNA but no histones

Q.23 One of the characteristics of DNA is:
(1) Uracil
(2) Deoxyribose sugar
(3) Presence of ribonucleotides
(4) Ability of protein synthesis

Q.24 Which of the following is not a pyrimidine N_2 base:
(1) Thymine (2) Cytosine
(3) Guanine (4) Uracil

Q.25 The purine & pyrimidine pairs of complementary strands of DNA are held together by:
(1) H - bonds (2) O - bonds
(3) C - bonds (4) N - bonds

Q.26 Number of H - bonds between guanine and cytosine are:
(1) One (2) Two
(3) Three (4) Four

Q.27 Which purine & pyrimidine bases are paired together by H - bonds in DNA:
(1) AC & GT (2) GC & AT
(3) GA & TC (4) None of the above

Q.28 What is the nature of the 2 strands of a DNA duplex :
(1) Identical & complimentary
(2) Antiparallel & complimentary
(3) Dissimilar &non complimentary
(4) Antiparallel &non complimentary

Q.29 On an average, how many purine N_2 bases are present in single coil of DNA:
(1) Four (2) Five
(3) Ten (4) Uncertain

Q.30 Distance between two nucleotide pairs of DNA is:
(1) 0.34 nm (2) 34 Å
(3) 3.4 (4) 34 nm

Q.31 Evidence that DNA is genetic material comes from:
(1) Chromosomes contain DNA
(2) Transformation of bacterial cells

(3) DNA is present in nucleus
(4) DNA is not present in cytoplasm

Q.32 A nucleoside differs from a nucleotide in not having:
(1) Phosphate
(2) Sugar
(3) Phosphate & sugar
(4) Nitrogen base

Q.33 Wilkins X - ray diffraction showed the diameter of the DNA helix is:
(1) 10 Å (2) 20 Å (3) 30 Å (4) 40 Å

Q.34 In the DNA of an animal, percentage of Adenine is 30 then percentage of Guanine will be:
(1) 40 (2) 30 (3) 20 (4) 70

Q.35 The following ratio is generally constant for a given species :
(1) A + G / C + T (2) T + C / G + A
(3) A + T / G + C (4) A + C / T + G

Q.36 If base order in one chain of DNA is "ATCGA" then how many no. of H–bond found in DNA duplex:
(1) 20 (2) 12
(3) 10 (4) 11

Q.37 In DNA purine nitrogen bases are:
(1) Uracil and Guanine
(2) Guanine and Adenine
(3) Adenine and cytosine
(4) None

Q.38 Bond between phosphate and sugar in a nucleotide is:
(1) H–bond
(2) Covalent bond
(3) Phosphodiester bond
(4) Sulphide bond

Q.39 Short DNA segment has 80 thymine and 90 guanine bases. The total number of nucleotides are:
(1) 160 (2) 40 (3) 80 (4) 340

Q.40 DNA is acidic due to:
(1) Sugar (2) Phosphoric acid
(3) Purine (4) Pyrimidine

Q.41 If one strand of double standed DNA, consists of the sequence 3'-ATTCGTAC-5', then the complementary sequence must be :
(1) 5'-UAAGCAUG-3'
(2) 3'-TAAGCATG-5'
(3) 5'-TAAGCATG-3'
(4) 5'-TAAGCAUG-3'

Q.42 DNA molecule has uniform diameter due to?
(1) Double stranded
(2) Presence of phosphate
(3) Specific base pairing between purine and pyrimidine
(4) Specific base pairing between purine and purine

Q.43 If the sequence of bases in one strand of DNA is known then the sequence in other strand can be predicted on the basis of :
(1) Antiparallel (2) Complementary
(3) Polarity (4) Coiling

Q.44 The unequivocal proof that DNA is the genetic material came from the experiments of:
(1) Hershey and Chase (1952)
(2) Frederic Griffith (1928)
(3) Watson and Crick
(4) Meselson and Stahl (1958)

Q.45 In process of replication, deoxyribonucleoside tri phosphate:
(1) Acts as substrate
(2) Provides energy for polymerisation reaction
(3) Acts as an enzyme
(4) Both (1) and (2)

Q.46 DNA polymerase is needed for:
(1) Replication of DNA
(2) Synthesis of DNA
(3) Elongation of DNA
(4) All of the above

RNA, TRANSCRIPTION, GENETIC CODE

Q.47 Which of the following nitrogenous bases are common for both RNA and DNA?
(1) C, G, A (3) T, A, C
(2) G, A, U (4) U, A, C

Q.48 The unit of transcription is
(1) Terminator, structural gene, enhancer
(2) Promoter, structural gene, Terminator

(3) Promoter, Terminator, structural gene
(4) Structural gene, Promoter, Terminator

Q.49 Dominance of RNA world is proved by:
(1) Capping (2) Splicing
(3) Polyadenylation (4) All of these

Q.50 Find out the incorrect match:
(1) UUU - Phenylalanine
(2) UAG - Sense codon
(3) GUG - Valine
(4) UGG - Tryptophan

Q.51 One codon codes for only one amino acid, hence the code is:
(1) Ambiguous and non-specific
(2) Unambiguous and specific
(3) Ambiguous and specific
(4) Unambiguous and non-specific

Q.52 What is correct for bacterial transcription?
(1) mRNA requires processing to become active
(2) Translation can begin when mRNA is fully transcribed
(3) Transcription and translation takes place in the same compartment
(4) Rho factor initiates the process

Q.53 Majority of unusual bases are found in t-RNA in:
(1) First loop from 5'-end of tRNA
(2) AA - tRNA synthetase binding loop
(3) Ribosomal binding loop
(4) Codon site

Q.54 Identification and binding of RNA polymerase to the promoter sequence is a function of:
(1) Rho factor (2) Sigma factor
(3) Beta factor (4) Omega factor

Q.55 Substance common in DNA and RNA:
(1) Hexose Sugar (2) Pyrimidine
(3) Thymine (4) Phosphate groups

Q.56 DNA differs from RNA in :
(1) Only Sugar
(2) Nitrogen base only
(3) Nitrogen base and sugar
(4) None

Q.57 Similarity in DNA and RNA:
(1) Both are polymer of nucleotides
(2) Both have similar pyrimidine
(3) Both have similar sugar
(4) Both are genetic material

Q.58 Retrovirus have genetic material:
(1) DNA (2) RNA
(3) DNA or RNA (4) None

Q.59 Genetic information are transferred from nucleus to cytoplasm of cell through:
(1) DNA (2) RNA
(3) Lysosomes (4) ACTH

Q.60 The process of copying genetic information from one strand of DNA into ___Y___ is termed as __Z__:

	Y	Z
(1)	Transcription	RNA
(2)	RNA	Transcription
(3)	RNA	Replication
(4)	Replication	RNA

Q.61 Which of the following is called adaptor molecule:
(1) DNA (2) m-RNA
(3) t-RNA (4) RNA

Q.62 Which may be attached with Adenine base in RNA :
(1) Guanine (2) Cytosine
(3) Uracil (4) Thymine

Q.63 RNA synthesis is controlled by:
(1) Rho- factor (3) Sigma factor
(2) Endo nuclease (4) RNA - polymerase

Q.64 The process by which DNA of the nucleus passes genetic information to m-RNA is called:
(1) Transcription (2) Translocation
(3) Translation (4) Transportation

Q.65 A sequence of three consecutive bases in a t-RNA molecule which specifically binds to a complementary codon sequence in m RNA is known as:
(1) Triplet (2) Non - sense codon
(3) Anti codon (4) Termination codon

Q.66 In three dimensional view the molecule of t-RNA is:
(1) Inverted L-shaped (2) S-shaped
(3) Y- shaped (4) E-shaped

Q.67 During transcription, the DNA site at which RNA polymerase binds is called:

(1) Promoter (2) Regulator
(3) Receptor (4) Enhancer

Q.68 During transcription, if the nucleotide sequence of the DNA strand that is being coded is ATACG, then the nucleotide sequence in the mRNA would be:
(1) TATGC (2) TCTGG
(3) UAUGC (4) UATGC

Q.69 Which form of RNA has a structure resembling clover leaf?
(1) rRNA (2) hnRNA
(3) mRNA (4) tRNA

Q.70 Which one of the following makes use of RNA as a template to synthesize DNA:
(1) DNA dependent RNA polymerase
(2) DNA polymerase
(3) Reverse transcriptase
(4) RNA polymerase

Q.71 Which of the following is formed in nucleolus:
(1) r RNA (2) t RNA
(3) m–RNA (4) DNA

POST TRANSCRIPITIONAL, PROCESSING, TRANSLATION

Q.72 Poly A tail is present in:
(1) mRNA of bacteria
(2) tRNA of eukaryotes
(3) Promotor of bacteria
(4) mRNA of eukaryotes

Q.73 Which of the following is not required during post transcriptional processing in eukaryotes?
(1) Methyl guanosine triphosphate
(2) Ligase
(3) ScRNA
(4) SnRNA

Q.74 In protein synthesis, which of the following are required for the synthesis of charged tRNA?
(1) Amino acid, GTP, initiation codon, ribosome
(2) Amino acid, ATP, Mg++, enzyme, tRNA
(3) Amino acid, ATP, K+, enzyme, mRNA
(4) Aminoacyl tRNA, ribosome, initiation codon, release factor

Q.75 Termination of polypeptide synthesis in bacteria differs from eukaryotes in:
(1) Having different termination codons
(2) Being GTP dependent
(3) Involving more than one type of release factors
(4) All of these

Q.76 Portion of gene which is transcribed but not translated is :
(1) Exon (2) Intron
(3) Cistron (4) Codon

Q.77 Removal of introns and joining of exons is called:
(1) Capping (2) Tailing
(3) Splicing (4) All of these

Q.78 mRNA is attached with:
(1) ER (2) Ribosome
(3) Nucleus (4) Lysosome

Q.79 What would happen if in a gene encoding a polypeptide of 50 amino acids, 25th codon (UAU) is mutated to UAA:
(1) A polypeptide of 24 amino acids will be formed
(2) Two polypeptides of 24 and 25 amino acids will be formed
(3) A polypeptide of 49 amino acids will be formed
(4) A polypeptide of 25 amino acids will be formed

Q.80 Which one of the following statement is true for protein synthesis (translation) :
(1) Amino acids are directly recognized by mRNA
(2) The third base of the codon is less specific
(3) Only one codon codes for an amino acid
(4) Every tRNA molecule has more than one amino acid attachment site

Q.81 Translation is the process in which :
(1) DNA is formed on DNA template
(2) RNA is formed on DNA template
(3) DNA is formed on RNA template
(4) Protein is formed from RNA message

Q.82 Which of the following is true about poly (a) tail?
P. It is synthesized post-transcriptionally
Q. It is usually shorter than 300 nucleotides
R. One of its functions is to protect the mRNA from cytoplasmic RNAases
S. One of its functions is to stimulate translation

(1) P only (2) Q & R
(3) Q & S (4) P, Q, R & S

Q.83 Which of the following is not corrrect about translation:
(1) It starts with AUG
(2) Stops at termination codon
(3) Based on operon model
(4) Occurs in nucleus

Q.84 Which of the following RNA play structural and catalytic role during translation:
(1) m-RNA (2) t-RNA
(3) r-RNA (4) All

Q.85 Transfer of genetic information from a polymer of nucleotides to a polymer of amino acid is:
(1) Replication
(2) Transcription
(3) Translation
(4) Reverse transcription

Q.86 Translation refers to the process of :
(1) Polymerisation of nitrogen bases
(2) Polymerisation of nucleotides
(3) Polymerisation of nucleosides
(4) Polymerisation of amino acids

REGULATION OF GENE EXPRESSION

Q.87 In *lac* operon, the regulator gene codes for :
(1) Aporepressor (2) Corepressor
(3) Inactive repressor (4) Active repressor

Q.88 Mark the incorrect option w.r.t.*lac* operon :
(1) It is under positive as well as negative control
(2) Controls catabolic pathway
(3) Shows feed back repression
(4) Discovered by Jacob and Monod

Q.89 Repressor of lac-operon:
(1) Is synthesised by a constitutive gene
(2) Have a molecular weight of 16,000
(3) Has only one side
(4) Is made by operator gene

Q.90 Gene and cistron words are sometimes used synonymously because:
(1) One cistron contains many genes
(2) One gene contains many cistrons
(3) One gene contains one cistron
(4) One gene contains no cistron

Q.91 A gene containing multiple exons and at least one intron is termed as :
(1) Split gene (2) Operator gene
(3) Synthetic gene (4) Epistatic gene

Q.92 Gene which is responsible for the synthesis of a polypeptide chain is called :
(1) Promotor gene (2) Structural gene
(3) Regulator gene (4) Operator gene

Q.93 In prokaryotes, lac operon model proposed by
(1) Hershey & Chase (2) Meselson & Stahl
(3) Jacob & Monad (4) Watson & Crick

Q.94 What does "lac" refer to, in what we call the lac operon:
(1) Lactose (2) Lactase
(3) Lac insect (4) The number 1,00,000

Q.95 Which of the following is not produced by *E.Coli* in the lactose operon :
(1) β–galactosidase
(2) Thiogalactoside transacetylase
(3) Lactose dehydrogenase
(4) Lactose permease

Q.96 A Functioning of structural genes is controlled by:
(1) Operator (2) Promoter
(3) Ligase (4) Regulator gene

Q.97 The accessibility of promotor regions of prokaryotic DNA by RNA polymerase is, in many cases regulated by the interaction of some protein with sequences termed as :
(1) Promoter (2) Operator
(3) Regulator (4) Cistron

Q.98 Regulation of lac operon by repressor is referred to as :
(1) Positive regulation (2) Negative regulation
(3) Both (1) and (2) (4) None

Q.99 Which is incorrect:
(1) i-gene codes for the repressor of lac operon
(2) z-gene codes for the beta-galactosidase
(3) y-gene codes for transacetylase
(4) Three gene products are required for metabolism of lactose

Q.100 Which is the primary step for regulation of gene expression:
(1) Transport of m-RNA from nucleus to the cytoplasm
(2) Translational level
(3) Processing level
(4) Transcriptional level

Q.101 Find out the correct sequence of structural gene in lac operon:
(1) y, a, z (2) a, z, y
(3) z, y, a (4) z, a, y

MUTATION

Q.102 The concept of sudden genetic change which breeds true in an organism is visualized as:
(1) Natural selection
(2) Inheritance of acquired characters
(3) Mutation
(4) Independent assortment

Q.103 Mutation is:
(1) An abrupt or discontinuous change which is inherited
(2) A factor for plant growth
(3) A change which affects parents only and is never inherited
(4) A change which affects the offspring of F_2 generation

Q.104 The exchange of chromosomal parts between non homologous pairs of chromosome:
(1) Crossing over/Transduction
(2) Translocation
(3) Inversion
(4) Transition

Q.105 Mutation are generally:
(1) Dominant
(2) Recessive
(3) Codominant
(4) Incompletely dominant

Q.106 Genetic mutations occur in:
(1) DNA and RNA of viruses
(2) RNA only
(3) Protein
(4) RNA and Protein both

Q.107 Which of the following undergoes change in mutation:
(1) Chromosome (2) Structure of gene
(3) Sequence of gene (4) Any of the above

Q.108 The locus of mutation is :
(1) Gene (2) Chromosome
(3) Centromere (4) Nucleus

Q.109 Gene mutation is caused :
(1) Due to reproduction
(2) Due to linkage
(3) Due to change in sequence of N_2 base
(4) Due to change in sequence of genes in DNA

Q.110 X-rays generally cause :
(1) Polyploidy
(2) Frame shift mutations
(3) Chromosomal aberrations
(4) Paramutations

Q.111 Non ionizing radiations commonly used for inducing mutations in organisms are:
(1) UV-rays (2) Beta-rays
(3) X-rays (4) Gamma-rays

Q.112 Ultimate source of genetic variation is (OR) the process which provides raw material for evolution is :
(1) Sexual reproduction
(2) Meiosis
(3) Mutation
(4) Independent assortment

Q.113 To be evolutionary successful the mutation must occur in (OR) important mutations occur in :
(1) Somatoplasm
(2) Germplasm
(3) Karyolymph/Zygote
(4) Ergastoplasm

Q.114 Chemical mutagens are far more hazardous than radiations because :
(1) The exposure to chemicals is more prevalent
(2) The organism possess protection for radiation but no protection for chemicals
(3) The chemically induced mutations are more deleterious
(4) The chemicals are synthetics

Q.115 Deletion and insertions of base pairs of DNA causes.
(1) Chromosomal aberration

(2) Euploidy
(3) Frame shift mutation
(4) Aneuploidy

Q.116 Haploids are preferred over diploids for mutation studies because:
(1) Recessive mutation is expressed in F_1
(2) Recessive mutation is expressed in F_2
(3) Dominant phenotype is expressed
(4) Dominant phenotype is depressed

Q.117 Type of gene mutation which involves replacement of purine with pyrimidine or vice versa (OR) the substitution of one type of base with another type of base is:
(1) Transduction (2) Transversion
(3) Translocation (4) Transcription

Q.118 The minimum requirement for mutation is:
(1) Change of triplet codon
(2) Change in single nucleotide
(3) Change in whole DNA
(4) Change in single strand of DNA

Q.119 Chromosomal aberrations are commonly observed in
(1) Tracheids (2) Phloem fibres
(3) Xylem fibres (4) Cancer cells

DNA FINGER PRINTING, HUMAN GENOME PROJECT

Q.120 The non-human model organisms sequenced in Human Genome project were?
(1) A nematode and fruit fly
(2) Wheat and rice
(3) Fish and birds
(4) Garden pea and fruit fly

Q.121 Mark the correct one (w.r.t. application of DNA fingerprinting):
(1) Forensic science
(2) Determining the population diversity
(3) Determining the genetic diversity
(4) More than one option is correct

Q.122 In the technique of DNA fingerprinting digestion of DNA is followed by :
(1) Electrophoresis
(3) Denaturation
(2) Hybridisation
(4) Southern blotting

Q.123 Read the following statements :
A. Variation at genetic level arises due to mutations.
B. Polymorphism is the basis of DNA finger printing
(1) Only (B) is correct
(2) Both (A) and (B) are correct
(3) Only (A) is correct
(4) Both (A) and (B) are incorrect

Q.124 In DNA fingerprinting, detection of hybridised DNA fragments is possible by:
(1) Electrophoresis (2) Blotting
(3) Autoradiography (4) Centrifugation

Q.125 When the genomes of two people are cut using the same restriction enzyme, the length and number of fragments obtained are different, this is called:
(1) PCR (2) RFLP
(3) EST (4) Northern blotting

Q.126 Which of the following does not code for any proteins?
(1) Micro-satellites
(2) Exons
(3) Mini-satellites
(4) More than one option is correct.

Q.127 Inheritable mutation is observed in a population at high frequency, it is referred to as
(1) Genetic mapping
(2) RFLP
(3) DNA polymorphism
(4) DNA sequencing

Q.128 Repetitive sequences are stretches of DNA with repeated bases many times in a genome, but:
(a) These sequences are of no transcriptional function
(b) These are associated with euchromatin region
(c) These helps to identify a person on the basis of its DNA specificity
(1) All are correct
(2) Only (b) is incorrect
(3) Both (a) & (b) are correct
(4) Both (b) & (c) are incorrect

Q.129 The size of VNTR used in DNA finger printing is
(1) 20-60 bp (2) 0.1 kb - 20 kb

(3) 1 mb (4) 0.01 kb – 0.1 kb

Q.130 DNA finger printing was invented by:
(1) Kary Mullis (2) Alec Jeffery
(3) Dr. Paul Berg (4) Francis Collins

Q.131 Which one of the following pairs of terms / names mean one and the same thing :
(1) Gene pool- genome
(2) Codon - gene
(3) Cistron - triplet
(4) DNA fingerprinting - DNA profiling

Q.132 What is the first step in the Southern Blot technique?
(1) Denaturation of DNA on the gel for hybridization with specific probe
(2) Production of a group of genetically identical cells
(3) Digestion of DNA by restriction enzyme
(4) Isolation of DNA from a nucleated cell such as the one from the scene of crime

Q.133 Which step does not involve in DNA finger printing?
(1) Southern blotting
(2) Gel electrophoresis
(3) Restriction enzyme digestion
(4) Northern blotting

Q.134 The technique of transferring DNA fragment separated on agarose gel to a synthetic membrane such as nitrocellulose is knowas :
(1) Northern blotting
(2) Southern blotting
(3) Western blotting
(4) Dot blotting

Q.135 Which of the following techniques are used in analyzing restriction fragment length polymorphism (RFLP)?
(a) Electrophoresis
(b) Electroporation
(c) Methylation
(d) Restriction digestion
(1) a and c (2) c and d
(3) a and d (4) b and d

Q.136 The total number of nitrogenous bases in human genome is estimated to be about :
(1) 3.5 million (2) 35 thousand
(3) 35 million (4) 3.1 billion

Q.137 Select the wrong pair about salient feature of HGP
(1) Chromosome 1 – 2968 genes
(2) Chromosome Y – 230 genes
(3) EST – Expressed Sequence Tag
(4) SNP – 1.4 million

Q.138 The method of DNA fingerprinting involves the use of:
(1) Restriction enzymes
(2) Taq polymerase
(3) Oilgonucleotide primers
(4) All the above

Q.139 Which of the following is not associated with HGP :
(1) Bioinformatics
(2) Cloning vectors BAC and YAC
(3) Automated DNA sequence
(4) VNTR

Q.140 Which step is not correct in DNA finger printing?
(1) Isolation of DNA
(2) Digestion of DNA by DNA ligase enzyme
(3) Separation of DNA by electrophoresis
(4) Hybridisation using labelled VNTR probe

ANSWER KEY

TOPIC WISE QUESTIONS

Que.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Ans.	2	2	1	1	4	3	2	2	2	3	4	2	2	4	2
Que.	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**
Ans.	2	2	1	1	2	1	4	2	3	1	3	2	2	3	1
Que.	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**
Ans.	2	1	2	3	3	2	2	2	4	2	3	3	2	1	4
Que.	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**	**55**	**56**	**57**	**58**	**59**	**60**
Ans.	4	1	2	2	2	2	3	3	2	4	3	1	2	2	2
Que.	**61**	**62**	**63**	**64**	**65**	**66**	**67**	**68**	**69**	**70**	**71**	**72**	**73**	**74**	**75**
Ans.	3	3	4	1	3	1	1	3	4	3	1	4	3	2	3
Que.	**76**	**77**	**78**	**79**	**80**	**81**	**82**	**83**	**84**	**85**	**86**	**87**	**88**	**89**	**90**
Ans.	2	3	2	1	2	4	4	4	3	3	4	4	3	1	3
Que.	**91**	**92**	**93**	**94**	**95**	**96**	**97**	**98**	**99**	**100**	**101**	**102**	**103**	**104**	**105**
Ans.	1	2	3	1	3	4	2	2	3	4	3	3	1	2	2
Que.	**106**	**107**	**108**	**109**	**110**	**111**	**112**	**113**	**114**	**115**	**116**	**117**	**118**	**119**	**120**
Ans.	1	4	1	3	3	1	3	2	2	3	1	2	2	4	1
Que.	**121**	**122**	**123**	**124**	**125**	**126**	**127**	**128**	**129**	**130**	**131**	**132**	**133**	**134**	**135**
Ans.	4	1	2	3	2	4	3	2	2	2	4	1	4	2	3
Que.	**136**	**137**	**138**	**139**	**140**										
Ans.	4	2	4	4	2										