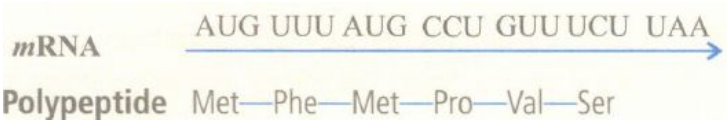
Time : 1 Mins **MOLECULAR BASIS OF INHERITANCE 2 1** **Marks : 952**

1. What is the first step in the Southern Blot technique
   a) Denaturation of DNA on the gel for hybridization with specific probe
   b) Production of a group of genetically identical cells
   c) Digestion of DNA by restriction enzyme
   d) Isolation of DNA from a nucleated cell such as the one from the scene of crime
2. If both parents are carriers for thalassemia, which is an autosomal recessive disorder, what is the chance of pregnancy resulting in an affected child?
   a) 100% b) No chance c) 50% d) 25%
3. Biological name of wheat is:
   a) Triticum aestivum b) Triticum triticale c) Triticum sativum d) Triticum tuberosum
4. Blotting technique involves transfer of DNA from
   a) Membrane to gel b) Gel to membrane c) Sol to gel d) Gel to sol
5. Which of the following cannot act as inducer?
   a) Lactose b) Galactose c) Both (a) and (c) d) Glucose
6. Bond formed between two adjacent nucleotides of DNA strand is
   a) Glycosidic linkage b) Peptide bond c) Phosphodiester bond d) H-bond
7. Chargaaf's rule is given as:
   a) Purines Pyrimidines b) A + U = G + C c) A + U = G + C d) A + T/G + C = Const.
8. The methodologies used for the sequencing of whole set of genome containing all the coding and non-coding sequence is
   a) ESTs b) SNPs c) Sequence annotation d) DNA profiling
9. Which out of the following statements is incorrect?
   a) Genetic code is ambiguous. b) Genetic code is degenerate.
   c) Genetic code is universal. d) Genetic code is non-overlapping.
10. Who amongst the following scientists had no contribution in the development of the double helix model for the structure of DNA?
    a) Rosalind Franklin b) Maurice Wilkins c) Erwin Chargaff d) Meselson and Stahl
11. Linkage discovered in Drosophila by
    a) Bateson b) Morgan c) Muller d) Correns
12. DNA differs from RNA in
    a) Only Sugar b) Nitrogen base only c) Nitrogen base and sugar d) None

13. The number of base substitution possible in amino acid codons is____
    a) 261 b) 264 c) 535 d) 549
14. An immature stop codon leads to :
    a) Mutation b) Non-sense mutation c) Variation d) Intron
15. Transcription unit
    a) starts with TATA box b) starts with palindrome regions and ends with rho factor
    c) starts with promoter region and ends in terminator region d) starts with CAAT region.
16. Thymine is-
    a) 5-Methyl uracil b) 4-Methyl uracil c) 3-Methyl uracil d) 1-Methyl uracil
17. The amino acid attaches to the tRNA at its
    a) 5' - end b) 3' - end c) anticodon site d) DHU loop.
18. In cells of superfemale with 47 chromosomes (44+xxx) visible barr bodies are
    a) 1 b) 0 c) 2 d) 3
19. Which one is not applicable to RNA?
    a) Complementary base pairing b) 5'phosphoryl and 3' hydroxyl ends
    c) Heterocyclic nitrogenous bases d) Chargaff's rule
20. Match column I with column II and select the correct option from the given codes

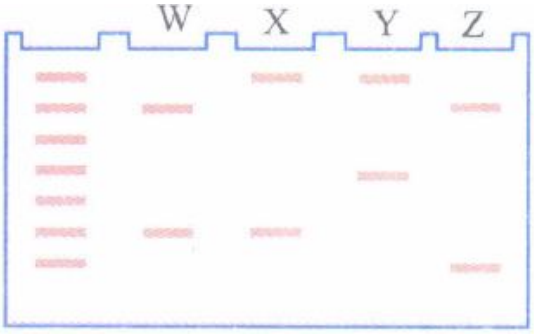
	Column I		**Column II**
A.	F.Meischer	(i)	DNA double helix
B.	Griffith	(ii)	Nuclein
C.	Hershey and Chase	(iii)	S. pneumoniae
D.	Watson and Crick	(iv)	Bacteriophages
E.	Wilkins and Franklin	(v)	X-ray diffraction studies

    a) A-(ii), B-(iii), C-(iv), D-(i), E-(v) b) A-(v), B (iv), C-(iii), D-(i), E-(ii)
    c) A-(i), B-(iii), C-(iv), D-(ii), E-(v) d) A-(i), B-(iv), C-(iii), D-(ii), E-(v)
21. Which of the following is a stop codon
    a) AUG,GUG,UUU b) UGA,UAG,UAA c) UUU,UAC,CUC d) CUC,UAC,UAA
22. DNA fragments generated by the restriction endonucleases in a chemical reaction can be separated by:
    a) Restriction mapping b) Centrifugation c) Polymerase chain reaction
    d) Electrophoresis
23. Read the sequence of nucleotides in the given segment of mRNA and the respective amino acid sequence in the polypeptide chain to answer the Q. nos. 65 and 66.



    Nucleotide sequence of the DNA strand from which this mRNA was transcribed is
    a) TAC AAA TAC GGA CAA AGA ATT b) AUG UUU AUG CCU GUU UCU UAA
    c) UAC AAA UAC GGA CAA AGA AUU d) ATG TTT ATG CCT GTT TCT TAA.

24. The DNA fingerprinting analysis of four family members is shown below.



Study the band pattern obtained and assign each family member to W, X, Y and Z. Choose the correct option.

a) W - father X - mother Y - child Z - paternal uncle
b) W - child X - father Y - mother Z - maternal uncle
c) W - father X - child Y - mother Z - paternal uncle
d) W - child X - father Y - maternal uncle Z - mother

25. Which of the following is commonly used as a vector for introducing a DNA fragment in human lymphocytes?
a) X phage b) 77 -plasmid c) Retrovirus d) pBR 322

26. Biochemical characterisation of transforming principle was done by
a) Hershey and chase b) Morgan c) Meischer d) Avery, MacLeod and McCarty

27. In eukaryotes, how many DNA polymerases are present?
a) 3 b) 5 c) 4 d) 2

28. If the sequence of bases in one strand of DNA is ATGCATGCA, what would be the sequence of bases on complementary strand?
a) ATGCATGCA b) AUGCAUGCA c) TACGTACGT d) UACGUACGU

29. Which is the most common mechanism of genetic variation in the population of sexually reproducing organism?
a) Chromosomal aberrations b) Genetic drift c) Recombination d) Tranduction

30. If the sequence of nitrogen bases of the coding strand of DNA in a transcription unit is: 5' - A T G A A T G - 3', the sequence of bases in its RNA transcript would be:
a) 5' - AU G A AU G - 3' b) 5' - U A C U U A C- 3' c) 5' - C A U U C A U - 3'
d) 5'-GUAAGUA-3'.

31. Which one of the following pairs of nitrogenous bases of nucleic acids, is wrongly matched with the category mentioned against it?
a) Thymine, Uracil - Pyrimidines b) Uracil, Cytosine - Pyrimidines
c) Guanine, Adenine - Purines d) Adenine, Thymine - Purines

32. In the base sequence of one strand of DNA is GAT, TAG, CAT, GAC what shall be the sequence of its complementary strand:
a) CAT, CTG, ATC, GTA b) GTA, ATC, CTG, GTA c) ATC, GTA, CTG, GTA
d) CTA, ATC, GTA, CTG

33. Because most of the amino acids are represented by more than one codon, the genetic code is_____
a) overlapping b) wobbling c) degenerate d) generate

34. Select the two correct statements out of the four (a - d) given below about lac operon_____
(i) Glucose or galactose may bind with the repressor and inactivate it
(ii) In the absence of lactose the repressor binds with the operator region
(iii) The z-gene codes for pennease
(iv) This was elucidated by Francois Jacob and Jacque Monod
The correct statements are
a) (ii) and (iii) b) (i) and (iii) c) (ii) and (iv) d) (i) and (ii)

35. **Assertion:** Lac operon is a repressible operon.
Reason: The product of gene activity stops the activity of the said gene.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

36. The three codons which result in the termination of polypeptide chain synthesis are
a) UAA, UAG, GUA b) UAA, UAG, UGA c) UAA, UGA, UUA d) UGU, UAG, UGA.

37. Inheritance of skin colour in humans is an example of
a) chromosomal aberration b) point mutation c) polygenic inheritance d) codominance

38. Synthesis of DNA on RNA template was first observed in
a) Bacteria b) Plant c) Virus d) Both (1) & (2)

39. Radioactive element used to label DNA of bacteriophage In Hershey and Chase experiment was
a) S^{35} b) P^{32} c) N^{15} d) C^{14}

40. A DNA with unequal nitrogen bases would most probably be_____
a) single stranded b) double stranded c) triple stranded d) four stranded

41. During expression of an operon, RNA polymerase binds to
a) structural gene b) regulator gene c) operator d) promoter.

42. Select the correct statements out of the following.
(i) Both DNA and RNA are able to mutate.
(ii) RNA being unstable, mutates at a faster rate.
(iii) RNA shows catalytic properties.
(iv) Presence of uracil (U) at place of thymine (T) confers additional stability to RNA.
a) (i) and (ii) b) (ii) and (iii) c) (i) and (iv) d) (i), (ii) and (iii)

43. The wild type E. coli cells are growing in normal medium with glucose. They are transferred to a medium containing only lactose as sugar. Which of the following changes takes place?
a) The lac operon is repressed b) All operons are induced c) The lac operon is induced
d) E. coli cells stop dividing

44. Experimental material in the study of DNA replication has been_____
a) Escherichia coll b) Neurospora crassa c) Pneumococcus
d) Drosophila melanogaster

45. Which one of the following is not applicable to RNA?
a) 5' phosphoryl and 3' hydroxy/ends b) Heterocyclic nitrogenous bases
c) Chargaff's rule d) Complementary base pairing

46. Which of the following phenomena was experimentally proved by Meselson and Stahl?

a) Transformation b) Transduction c) Semi-conservative DNA replication
d) Central dogma

47. Which of the following is not a stop codon?
a) UGA b) UAG c) AUG d) UAA

48. Double helix model of DNA
a) Was given by Watson and Crick b) Suggests '3D' structure c) Was given for B-DNA
d) All of these

49. Suppose evolution on earth has occurred in such a way that there are 96 amino acids instead of 20. DNA has 12 different types of bases and DNA synthesis occur in the same way as today. The minimum number of bases per DNA condon would be
a) 12 b) 8 c) 2 d) 3

50. In a testcross involving F1 dihybrid flies, me parental-type offspring were produced than the recombinant- type offspring. This indicates:
a) The two genes are located on two different chromosomes
b) Chromosomes failed to separate during meiosis
c) The two genes are linked and present on the same chromosome
d) Both of the characters are controlled by more than one gene

51. To prove that DNA is the genetic material, which radioactive isotopes were used by Hershey and Chase (1952) in their experiments?
a) ^{35}S and 15N b) ^{32}p and ^{35}S c) ^{32}P and ^{15}N d) ^{14}N and ^{15}N

52. The unequivocal proof of DNA as the genetic material came from studies on a
a) Viriod b) Bacterial virus c) Bacterium d) Fungus

53. Gametes of AaBb individual can be:
a) Aa, Bb b) AB, ab c) AB, ab, aB d) AB, Ab, aB, ab

54. Alleles are
a) true breeding homozygotes b) different molecular forms of a gene c) heterozygotes
d) different phenotype

55. DNA ligase is involved in
a) Formation of RNA primer b) Filling of gaps c) Joining of Okazaki fragments
d) Both (1) & (2)

56. The differences between mRNA and tRNA are that ribosome.
(i) mRNA has more elaborated 3-dimensional structure due to extensive base-pairing
(ii) tRNA has more elaborated 3-dimensional structure due to extensive base-pairing
(iii) tRNA is usually smaller than mRNA
(iv) mRNA bears anticodon but tRNA has codons.
a) (i) and (ii) b) (ii) and (iii) c) (i), (ii) and (iii) d) (i),(ii),(iii) and (iv)

57. How does steroid hormone influence the cellular activities?
a) Changing the permeability of the cell membrane
b) Binding to DNA and forming a genehormone complex

c) Activatiug cyclic AMP located on the cell membrane
d) Using aquaporin channels as second messenger

58. During protein synthesis, amino acid gets attached to tRNA with the help of
a) mRNA b) Aminoacyl synthetase c) Ribosome d) rRNA

59. If a hybrid DNA molecule is allowed to replicate twice in normal culture medium, the percentage of hybrid DNA will be
a) 50% b) 12.5% c) 25% d) 75%

60. The codons causing chain termination are_____ .
a) TAG, TAA, TGA b) GAT, AAT, AGT c) AGT, TAG, UGA d) UAA, UAG, UGA

61. How many linkage group are these in nuclear bacteria
a) One b) Two c) Four d) None

62. Refer to the given mRNA segment

It can be translated completely into a polypeptide.
Which of the following codons may correspond with A and B?
a) A - AUG, GUG; B - UAA, UAG or UGA b) A - UAA, UGA; B - AUG, GUG or UAG
c) A - AUG, UGA; B - GUG, UAA or UGA d) A - AUG, GAG; B - UAA, UUU or UGA

63. Semi-conservative replication of DNA was first demonstrated in_____
a) Escherichia coli b) Streptococcus pneumoniae c) Salmonella typhimurium
d) Drosophila melanogaster

64. In some viruses, DNA is synthesised by using RNA as template. Such a DNA is called
a) A-DNA b) B-DNA c) cDNA d) rDNA.

65. What is the correct sequence of DNA finger printing?
a- seperation of desired DNA by gel electrophoresis
b- Digestion by restriction endonuclease
c- Isolation of DNA
d- Hybridisation using labelled VNTR probe
e- Southern blotting
a) a→ b→ c →d →e b) b→d →e →a →c c) c→b→a→d→e d) c→d→a→e→d

66. Which of the following pairs is incorrectly matched?
a) Purines - Adenine and Guanine b) Pyrimidines - Cytosine and Uracil
c) Nucleosides - Adenosine and Thymidine d) DNA - Basic biomolecule

67. When two unrelated individuals or lines are crossed, the performance of F1 hybrid is often superior to both its parents. This phenomenon is called:
a) Heterosis b) Transformation c) Splicing d) Metamorphosis

68. Refer to the given sequence of steps and select the correct option.

$$DNA \xrightarrow{(i)} hnRNA \xrightarrow{(ii)} mRNA \xrightarrow{(iii)} proteins$$

a)

(i)	(ii)	(iii)
Replication	Transcription	Translation

b)

(i)	(ii)	(iii)
Replication	Processing	Translation

c)

(i)	(ii)	(iii)
Transcription	Splicing	Translation

d)

(i)	(ii)	(iii)
Transcription	Replication	Translation

69. The RNA that picks up specific amino acid from amino acid pool in the cytoplasm to ribosome during protein synthesis is called _____
a) mRNA b) tRNA c) rRNA d) RNA

70. Repressible operon system is usually found in___(i)___pathways. The pathway's end product serves as a___(ii)___to activate the repressor, turn off enzyme synthesis and prevent overproduction of the end product of the pathway. Genes for this operon are usually switched___(iii)___and the repressor is synthesised in an___(iv)___form.
a)

(i)	(ii)	(iii)	(iv)
anabolic	corepressor	on	inactive

b)

(i)	(ii)	(iii)	(iv)
anabolic	inducer	off	active

c)

(i)	(ii)	(iii)	(iv)
catabolic	inducer	off	active

d)

(i)	(ii)	(iii)	(iv)
catabolic	corepressor	on	inactive

71. Which of the following is not required for any of the techniques of DNA fingerprinting available at present?
a) DNA-DNA hybridization b) Polymerase chain reaction c) Zinc finger analysis
d) Restriction enzymes

72. Reverse transcriptase using RNA, forms which of the following?
a) Double stranded DNA b) Double stranded RNA c) DNA & RNA
d) Single stranded RNA

73. **Assertion :** Repetitive sequences make up very large portion of human genome.
Reason : Repetitive sequences do not have direct coding functions in the genome.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

74. If one strand of DNA has the nitrogenous base sequence at ATCTG what would be the complementary RNA strand sequence_____
a) TTAGIT b) UAGAC c) AACTG d) ATCGU

75. An organism uses 20 amino acids while its DNA is made up of 6 types of nitrogenous bases. What would be the minimum size of a codon?
a) 6 b) 4 c) 3 d) 2

76. Which is incorrect for genetic code-
(a) (i) The codon is triplet
(b) (ii) 64 codons code for amino acids

(c) (iii) Genetic code is unambiguous
(iv) Genetic code is nearly universal
(d) (v) AUG has dual functions
a) only ii b) ii & iii c) iii, iv + v d) All are correct

77. Fruit colour in squash is an example of
a) Recessive epistasis b) Dominant epistasis c) Complementary genes
d) Inhibitory genes

78. DNA template sequence of CTGATAGC is transcribed over mRNA as_____
a) GUCTUTCG b) GACUAUCG c) GAUTATUG d) UACTATCU

79. Which of the following differences are incorrect between leading and lagging strands of DNA?

	Leading strand	**Lagging strand**
(i)	It does not require DNA ligase for its growth.	DNA ligase is required for joining Okazaki fragments.
(ii)	Formation of leading strand is slower.	Formation of lagging strand is quite rapid
(iii)	Its template opens in 5'⟶ 3' direction.	Its template opens in 3' ⟶ 5' direction.
(iv)	Formation of leading strand begins immediately at the beginning of replication.	Formation of lagging strand begins a bit later than that of leading strand.

a) (ii) and (iv) only b) (ii), (iii) and (iv) only c) (ii) and (iii) only d) (i), (ii) and (iii) only

80. A test cross of F1 flies + a/+b produced the following offspring
++/ab = 9
ab/ab = 9
+b/ab = 41
a+/ab = 41
What will be distance between linked gene
a) 82 cM b) 18 cM(cis) c) 20cM d) 18cM(trans)

81. The telomeres of eukaryotic chromosomes consist of short sequences of___
a) thymine rich repeats b) cytosine rich repeats c) adenine rich repeats
d) guanine rich repeats

82. In E. coli, the lac operon gets switched on when
a) lactose is present and it binds to the repressor b) repressor binds to operator
c) RNA polymerase binds to the operator
d) lactose is present and it binds to RNA polymerase

83. Gene regulation governing lactose operon of E.coli that involves the lac I gene product is _____ .
a) Negative and inducible because repressor protein prevents transcription.
b) Negative and repressible because repressor protein prevents transcription.
c) Feedback inhibition because excess of b - galactosidase can switch off transcription.
d) Positive and inducible because it can be induced by lactose

84. Linkage is a tendency of alleles of different genes to assort together in :
a) Meiosis b) Mitosis c) X-Y linkage d) Inversion

85. In a dihybrid cross between AABB and aabb the ratio of AABB, AABb, aabb in F_2 generation is
a) 9:3:3:1 b) 1:1:1:1 c) 1:2:2:1 d) 1:1:2:2

86. Nucleotide arrangement in DNA can be seen by____
a) X-ray crystallography b) electron microscope c) ultracentrifuge d) light microscope

87. Satellite DNA is classified on the basis of
a) Length b) Base composition c) Number of repetitive units d) All of these

88. Phenotype of an organism is the result of-
a) Mutations and linkages b) Cytoplasmic effects and nutrition
c) Environmental changes and sexual dimorphism
d) Genotype and environment interaction

89. Genes are packaged into a bacterial chromosome by_____
a) histones b) basic protein c) acidic protein d) actin

90. In a population of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is
a) 0.4 b) 0.5 c) 0.6 d) 0.7

91. There are three genes a, b, c percentage of cross over between a and b is 20% b and c is 28% a and c is 8%. What is the sequence of genes chromosome:
a) b, a, c b) a, b, c c) a, c, d d) None

92. Whose experiments cracked DNA and discovered triplet nature of genetic code?
a) Nirenberg and Mathaei b) Beadle and Tatum c) Hershey and Chase
d) Morgan and Sturtevant

93. If the base sequence in DNA is 5'AAAA 3' then the bases sequence in m-RNA is
a) 5'UUUU3' b) 3'UUUU5' c) 5'AAAA3' d) 3'TTTT5'

94. Removal of RNA polymerase III from nucleoplasm will affect the synthesis of_____
a) tRNA b) hnRNA c) mRNA d) rRNA

95. Which enzymes will be produced in a cell in which there is a nonsense mutation in the lac Y gene?
a) Laotose permease b) Transacetylase c) Lactose permease and transcetylase
d) b- galactosidase

96. Heterochromatin is
a) Genetically active b) Transcriptionally inactive c) Lightly stained
d) With loosely coiled DNA

97. Sickle cell anemia is
a) Characterized by elongated sickle like RBCs with a nucleus
b) An autosomal linked dominant trait
c) Caused by substitution of valine by glutamic acid in the beta globin chain of haemoglobin
d) Caused by a change in a single base pair of DNA

98. What does "lac" refer to in what we call the lac operon?
a) The number 1,00,000 b) Lactose c) Lactase d) Lac insect

99. Heterozygous tall plants were crossed with dwarf plants. what will be the ratio of dwarf plants in the progeny:
a) 50% b) 25% c) 75% d) 100%

100. Which of following RNA has majority of modified or unusual bases?
a) rRNA b) mRNA c) hnRNA d) tRNA

101. **Assertion:** In Griffith's experiment, a mixture of heat- killed virulent bacteria R and live non-virulent bacteria S, lead to the death of mice.
Reason: 'Transforming principle' got transferred from heat-killed R strain to S strain and made it virulent.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

102. Match column I with column II and select the correct option from the given codes.

	Column I		**ColumnII**
A.	Translation	(i)	Aminoacyl tRNA synthetase
B.	Transcription	(ii)	Okazaki fragments
C.	DNA replication	(iii)	RNA polymeras

a) A-(ii), B-(i), C-(iii) b) A-(i), B-(iii), C-(ii) c) A-(iii), B-(i), C-(ii) d) A-(ii), B-(iii), C-(i)

103. Nucleosome core is made of_____
a) H1,H2 A,H2 B and H3 b) H1,H2 A,H2 B and H4 c) H1,H2 A,H2 B,H3 and H4
d) H2 A,H2 B,H3 and H4

104. The first phase of translation is____
a) Aminoacylation of tRNA b) Recognition of an anti-codon
c) Binding of mRNA to ribosome d) Recognition of DNA molecule

105. In which direction m-RNA is synthesised on DNA template?
a) 5'→3' b) 3'→5' c) Both (a) and (b) d) Any

106. A nucleotide is formed of____
a) purine, pyrimidine and phosphate b) purine, sugar and phosphate
c) nitrogen base, sugar and phosphate d) pyrimidine, sugar and phosphate

107. The fully processed hnRNA is called as_____(i)_____and is transported out of the_____(ii)_____into the_____(iii)_____for translation.

a)

(i)	**(ii)**	**(iii)**
mRNA	nucleus	cytoplasm

b)

(i)	**(ii)**	**(iii)**
mRNA	cytoplasm	nucleus

c)

(i)	**(ii)**	**(iii)**
tRNA	cytoplasm	nucleus

d)

(i)	**(ii)**	**(iii)**
tRNA	nucleus	cytoplasm

108. Double helix model of DNA which was proposed by watson and crick was of
a) C-DNA b) B-DNA c) D-DNA d) Z-DNA

109. A and B genes are linked, what shall be genotype of progeny in a cross between AB/ab and aabb:
a) AAbb and aabb b) AaBb and aabb c) AABB and aabb d) None

110. ABO blood groups in humans are controlled by the gene I. It has three alleles-I^A,I^B and i. Since there are three different alleles, six different genotype are possible. How many phenotypes can occur?
a) Four b) Two c) Three d) One

111. Which enzyme is used in transcription
a) Amino acyl synthetase b) DNA polymerase III c) RNA polymerase d) DNA ligase

112. Other than DNA polymerase, which of the following enzymes involved in DNA synthesis?
a) Topoisomerase b) Helicase c) RNA primase d) All of these

113. In a DNA molecule, the phosphate group is attached to carbon _____ of the sugar residue of its own nucleotide and carbon _____ of the sugar residue of the next nucleotide by _____ bonds.
a) 5', 3', phosphodiester b) 3', 5', phosphodiester c) 5', 3', glycosidic d) 3', 5', glycosidic

114. If the distance between two consecutive base pairs is 0.34 nm and the total number of base pairs of a DNA double helix in a typical mammalian cell is 6.6 x 109 dp, then the length of the DNA is approximately_____ .
a) 2.2 meters b) 2.7 meters c) 2.0 meters d) 2.5 meters

115. No. of Bar Body in XXXX female
a) 1 b) 2 c) 3 d) 4

116. In one polynucleotide strand of a DNA molecule the ratio of A + T/G + C is 0.3. What is the A + GIT + C ratio of the entire DNA molecule?
a) 0.3 b) 0.6 c) 1.2 d) 1

117. E.coli cells with a mutated z gene of the lac operon cannot grow in medium containing only lactose as the source of energy because_____
a) the lac operon is constitutively active in these cells.
b) they cannot synthesise functional beta - galactosidase.
c) in the presence of glucose, E.coli cells do not utilize lactose.
d) they cannot transport lactose from the medium into the cell.

118. The sequence of structural genes in lac operon is:
a) Lac A, Lac Y, Lac Z b) Lac A, Lac Z, Lac Y c) Lac Y, Lac Z, Lac A
d) Lac Z, Lac Y, Lac A

119. DNA dependent RNA polymerase catalyses transcription on one stand of DNA which is called the
a) Antistrand b) Template strand c) Coding strand d) Alpha strand

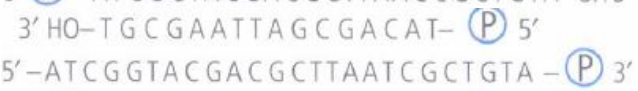
120. A DNA template plus primer with the structure

(where P = a phosphate group) is placed in an in vitro DNA synthesis system containing Mg2+, an excess of the four deoxyribonucleoside triphosphates, etc. and a mutant form of E. coli DNA polymerase I that lacks 5' ~ 3' exonuclease activity. The 5' ~ 3' polymerase and 3' ~ 5'

exonuclease activities of this aberrant enzyme are identical to those of normal E. coli DNA polymerase I. It simply has no 5' ~ 3' exonuclease activity. What will be the structure of the final product?

a) 

b) 

c) 

d) 

121. Haemophilic gene does not transfer from:
a) Haemophilic father to son b) Haemophilic mother to son
c) Haemophilic father to daughter d) Haemophilic mother to son & daughter

122. All of the following are part of an operon except:
a) an enchancer b) structural genes c) an operator d) a promoter

123. A useful process for determining whether an individual is homozygous or heterozygous is:
a) Cross-breeding b) self fertilization c) Back-crossing d) Test cross

124. Genetic drift operates in :
a) Non- reproductive population b) slow reproductive population
c) Small isolated population d) Large isolated population

125. Complete linkage is found in
a) Birds b) Snakes c) Female- Drosophila d) Male- Drosophila

126. Severo Ochoa enzyme is
a) DNA polymerase b) Guanyl transferase c) Peptidyl transferase
d) Polynucleotide phosphorylase

127. A non-proteinaceous enzyme is :
a) Ligase b) Deoxyribonuclease c) Lysozyme d) Ribozyme

128. International Human Genome Project began in
a) 1990 b) 1996 c) 2000 d) 2001

129. A single recessive trait which can express its effect should occur on
a) Any autosome b) Any-chromosome c) X-chromosome of female
d) X-chromosome of male

130. **Assertion :** Template or antisense strand, having 3' ~ 5' polarity takes part in transcription.
Reason: Non-template or sense strand, having 5' ~ 3' polarity, does not take part in transcription.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

131. Which of the following may be true for RNA

a) A = U G = C b) A ≠ U G ≠ C c) A = U = G = C d) Purines = Pyrimidines

132. During translation, activated amino acids get linked to tRNA. This process is commonly called as
a) charging of tRNA b) discharging of tRNA c) aminoacylation of tRNA
d) both (a) and (c).

133. During transcription, the DNA site at which RNA polymerase binds is called_____ .
a) enhancer b) Promoter c) regulator d) receptor

134. When the codon of mRNA is 5'-GUC-3' then the anticodon on tRNA will be
a) 5'-CAG-3' b) 3'-CAG-5' c) 3'-CUG-5' d) 3'-CUG-5'

135. A molecule that can act as a genetic material must fulfill the traits given below, except:
a) It should be able to generate its replica
b) It should be unstable structurally and chemically
c) It should provide the scope for slow changes that are required for evolution
d) It should be able to express itself in the form of Mendelian characters

136. Functioning of structural genes is controlled by
a) Operator b) Promoter c) Ligase d) Regulator gene

137. Which of the following bond is not related to nucleic acid:
a) H-bond b) Ester bond c) Glycosidic bond d) Peptide bond

138. In split genes, the coding sequence are called_____
a) introns b) operons c) exons d) cistrons

139. During protein synthesis in an organbism, at one point the process comes to a half. Select the group of the three codons from the following from which any one of the three could bring about this half-
a) UUU,UCC,UAU b) UUC,IIA,UAC c) UAG,UGA,UAA d) UUG,UCA,UCG

140. Degeneration of a genetic code is attributed to the_____
a) third member of a codon b) first member of a codon c) second member of a codon
d) entire codon

141. Bonding between deoxyribose' and base in purine nucleoside molecule Is
a) H-bonding b) Phosphoester linkage c) Glycosidic linkage d) Phosphodlester linkage

142. Match column I with column II and select the correct option from the given codes.

	Column I		**Column II**
A.	Griffith	(i)	Lac operon
B.	Hershey and Chase	(ii)	Semi-conservative DNA replication
C.	Meselson and Stahl	(iii)	Transduction
D.	Jacob and Monod	(iv)	Transformation

a) A-(iv), B-(iii). C-(ii), D-(i) b) A-(iii), B-(iv), C-(ii), D-(i) c) A-(iv), B-(ii), C-(iii), D-(i)
d) A-(ii), B-(i), C-(iii), D-(iv)

143. Unidirectional flow of information is called central dogma, given by
a) F.H.C. Crick b) Temin c) Baltimore d) Dulbecco

144. Complete genome of which non-crop and crop plants has been sequenced?
a) Datura and wheat respectively b) Arabidopsis and maize respectively
c) Oenothera and oat respectively d) Arabidopsis and rice respectively

145. Select the correct match_____
a) TH Morgan - Transduction b) F_2 x Recessive parent - Dihybrid cross
c) Ribozyme - Nucleic acid d) G Mendel - Transformation

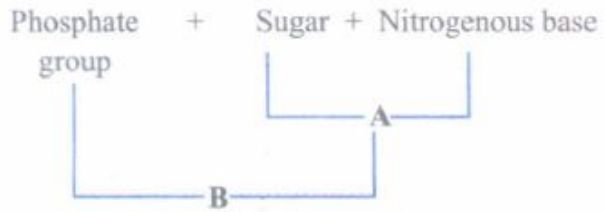
146. Escherichia coli fully labelled with N^{15} is allowed to grow in N^{14} medium. The two strands of DNA molecule of the first generation bacteria have_____
a) different density and do not resemble parent DNA
b) different density but resemble parent DNA c) same density and resemble parent DNA
d) same density but do not resemble parent DNA

147. Okazaki fragments are seen during_____
a) transcription b) translation c) replication d) transduction

148. If a colour-blind man marries a woman who is homozygous for normal colour vision, the probability of their son being colour-blind is :
a) 0.75 b) 1 c) 0 d) 0.5

149. The first genetic material could be
a) protein b) carbohydrates c) DNA d) RNA.

150. What does A and B represent in the given representation?



a) A - Ribonucleoside, B - Deoxyribonucleosi
b) A - Ribonucleotide, B - Deoxyribonucleotide c) A - Nucleoside, B - Nucleotide
d) A - Nucleotide, B - Nucleoside

151. If the percentage of thymine Is 35% In DNA double helix, then the percentage of guanine will be
a) 35% b) 70% c) 30% d) 15%

152. In the hexaploid wheat, the haploid (n) and basic (x) numbers of chromosomes are:
a) n = 7 and x = 21 b) n = 21 and x = 21 c) n = 21 and x = 14 d) n = 21 and x = 7

153. In Meselson and Stahl's experiment, heavy isotope ^{15}N was used In the form of
a) $Na^{15}NO_3$ b) $^{15}NH_4Cl$ c) $K^{15}NO_3$ d) $NH_4{}^{15}NO_3$

154. Which of the following is involved in translation:
a) DNA b) mRNA,tRNA,DNA c) mRNA,tRNA d) Only mRNA

155. In most of the plant viruses genetic material is
a) ssDNA b) ssRNA c) dsRNA d) ssRNA + ssDNA

156. Given below is a sample of a portion of DNA strand. What is so special shown in it?
s'-GAAITC-3'
3'-CTTAAG-5"

a) Replication completed b) Deletion mutation c) Start codon at the 5' end
d) Palindromic sequence of base pairs

157. If 120 Plants are produced on crossing pure red and pure white flowered pea plants, than the ratio of off springs will be
a) 90 Red : 30 White b) 30 Red : 90 White c) 60 Red : 60 White d) All Red

158. The final proof for DNA as the genetic material came from the experiments of:
a) Griffith b) Hershey and Chase c) Avery, Mcleod and McCarty d) Hargobind Khorana

159. How many different kinds of gametes will be produced by a plant having the genotype AABbCC?
a) Three b) Four c) Nine d) Two

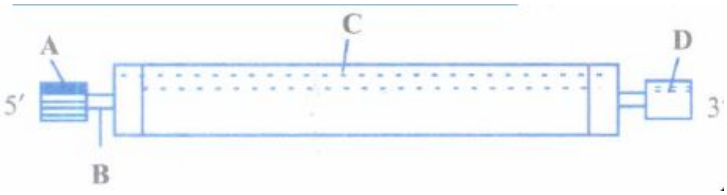
160. Genes do not occur in pairs in
a) Zygote b) Somatic cell c) Endosperm cell d) Gametes

161. A tall true breeding garden pea plant is crossed with a dwarf true breeding garden pea plant. When the F_1 Plant were selfed the resulting genotype were in the ratio of:
a) 1:2:1 :: Tall homozygous : Tall heterozygous : Dwarf
b) 1:2:1 :: Tall heterozygous : Tall homozygous : Dwarf c) 3:1 :: Tall : Dwarf
d) 3:1 :: Dwarf : Tall

162. Which one is not a part of transcription unit in DNA?
a) The inducer b) Promoter c) Terminator d) Structural gene

163. There will be no Barr body in female suffering from:
a) Turner syndrome b) Kleinfelter syndrome c) Down syndrome d) Haemophilia

164. Identify A, B, C and D in the given diagram of mRNA.



a)

A	B	C	D
Methylated cap	Initiation codon	Termination codon	PolyA tail

b)

A	B	C	D
PolyA tail	Termination codon	Initiation codon	Methylated cap

c)

A	B	C	D
Methylated cap	Non-coding region	coding region	PolyA tail

d)

A	B	C	D
Methylated cap	coding region	Non-coding region	PolyA tail

165. The fact that a purine base always paired through hydrogen bonds with a pyrimidine base leads to, in the DNA double helix
a) the antiparallel nature b) the semi-conservative nature
c) uniform width throughout DNA d) uniform length in all DNA.

166. Khorana first deciphered the triplet codons of_____
a) serine and isoleucine b) threonine and histidine c) tyrosine and tryptophan
d) phenylalanine and methionine

167. The length of DNA molecule greatly exceeds the dimensions of the nucleus in eukaryotic cells. How is this DNA accommodated?
a) deletion of non-essential genes b) super-coiling in nucleosomes c) DNase digestion
d) through elimination of repititive DNA

168. Initiation codon is
a) AUG b) UAG c) UGA d) UAA

169. Polycistronic messenger RNA (mRNA) usually occurs in
a) bacteria b) prokaryotes c) eukaryotes d) both (a) and (b).

170. The linkage map of X-chromosome of fruitfly 66units, with yellow body gene (y) at one end bobbed hair (b) gene at the other end. recombination frequency between these two get (y and b) should be:
a) 60% b) >50% c) ≤50% d) 100%

171. **Assertion:** The mechanism of DNA replication is semi- conservative in nature.
Reason : Each of the complementary strands of the parental double helix is conserved during the process
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

172. In a DNA strand the nucleotides are linked together by
a) glycosidic bonds b) phosphodiester bonds c) peptide bonds d) hydrogen bonds.

173. The incorrect statement with regard to Haemophilia is
a) A single protein involved in the clotting of blood is affected b) It is a sex-linked disease
c) It is a recessive disease d) It is a dominant disease

174. DNA acts as a template for synthesis of
a) RNA b) DNA c) Both 'a' and 'b' d) Protein

175. Which one of the following is a case of wrong matching?
a) Micropropagation-In vitro production of plants in large numbers
b) Callus - Unorganised mass of cells produced in tissue culture
c) Somatic hybridization - Fusion of two diverse cells
d) Vector DNA - Site for t-RNA synthesis

176. The process of transformation is not affected by which of the following enzymes?
A. DNase
B. RNase
C. Peptidase
D. Lipase
a) A, B b) A, B, C, D c) B, C, D d) A, B, C

177. Which of the following criteria should be fulfilled by a molecule to act as a genetic material?
(i) It should be able to replicate.
(ii) It should be structurally and chemically stable.
(iii) It should be able to undergo slow mutations.
(iv) It should be able to express itself in the form of 'Mendelian characters'.

a) (i) and (ii) b) (ii) and (iii) c) (i), (ii) and (iii) d) (i), (ii), (iii) and (iv)

178. Prokaryotic topolsomerase is
a) Helicase b) Prlmase c) DNA polymerase d) DNA gyrase

179. C value is the characteristic DNA content in a haploid cell of a given species. Earlier it was considered that (-value correlates with organism complexity. However, it is now evident that C value varies enormously among species and that this bears no correlation with the complexity of the organisms. For example, the cells of some salamanders may contain 40 times more DNA than those of humans.
Which of the following explains this C value paradox?
a) Polyploidy b) Chromosomal mutation c) Non-coding DNA d) Coding DNA

180. Protein helping in opening of DNA double helix in front of replications fork is____
a) DNA gyrase b) DNA polymerase-I c) DNA ligase d) topoisomeras

181. The promoter site and the terminator site for transcription are located at
a) 3' (downstream) end and 5' (upstream) end, respectively of the transcription unit
b) 5' (upstream) end and 3' (downstream) end, respectively of the transcription unit
c) the 5' (upstream) end d) the 3' (downstream) end.

182. In a DNA percentage of thymine is 20% then what will be the percentage of guanine?
a) 20% b) 40% c) 30% d) 60%

183. The structure in chromatin seen as 'beads-on string' when viewed under electron microscope are called
a) nucleotides b) nucleosides c) histone octamer d) nucleosomes.

184. Which of the following RNA play structural and catalytic role during translation
a) m-RNA b) t-RNA c) r-RNA d) All

185. The first codon discovered by Nirenberg and Mathei was
a) CCC b) GGG c) UUU d) AAA

186. In the genetic code dictionary how many codons are used to code for all the 20 essential amino acids?
a) 60 b) 20 c) 64 d) 61

187. UTRs are the untranslated regions present on:
a) rRNA b) tRNA c) mRNA d) hnRNA.

188. A certain road accident patient with unknown blood group needs immediate blood transfusion. His one doctor friend at once offers his blood. What was the blood group of the donor?
a) Blood group O b) Blood group A c) Blood group B d) Blood group AB

189. Messenger RNA is produced in
a) Nucleus b) Golgi apparatus c) Endoplasmic reticulum d) Ribosomes

190. In which one of the following combinations(1-4) of the number of the chromosomes is the present day hexaploid whaet correctly represented

a)

Combination	(1)	(2)	(3)	(4)
Monosomic	21	7	21	41

b)

Combination	(1)	(2)	(3)	(4)
Haploid	28	28	7	21

c)

Combination	(1)	(2)	(3)	(4)
Nullisomic	42	40	42	40

d)

Combination	(1)	(2)	(3)	(4)
Trisomic	43	42	43	43

191. Gene and cistron words are sometimes used synonymously because____
a) one cistron contains many genes b) one gene contains many cistrons
c) one gene contains one cistron d) one gene contains no cistron

192. What set of RNA are involved in protein synthesis
a) tRNA, mRNA, rRNA b) tRNA, mRNA, hnRNA c) hnRNA, mRNA ,rRNA
d) hnRNA, tRNA, rRNA

193. Which one of the following conditions correctly describes the manner of determining the sex in the given example?
a) Homozygous sex chromosomes (ZZ) determine female sex in Birds.
b) XO type of sex chromosomes determine male sex in grasshopper
c) XO condition in humans as found in Turner syndrome, determines female sex.
d) Homozygous sex chromosomes (XX) produce male in Drosophila

194. DNA fragments are_____
a) negatively charged b) neutral
c) either positively or negatively charged depending on their size d) positively charged

195. DNA elements, which can switch their position, are called_____ .
a) exons b) introns c) cistrons d) transposons

196. t-RNA attach to larger subunit of ribosome with the help of which loop
a) DHU-loop b) TΨC loop c) Anticodon loop d) Minor loop

197. A phenomenon which works opposite to linkage is
a) Independent assortment b) Crossing-over c) Segregation d) Mutation

198. **Assertion :** DNA is considered to be better genetic material than RNA for most organisms.
Reason: 2' - OH group present in DNA makes it labile and less reactive.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

199. If a colourblind women marries a normal visioned man, their sons will be-
a) All normal visioned b) One-half colourblind and one-half normal
c) Three-fourths colourblind and one- fourth normal d) All colourblind

200. Which of the following statements is the most appropriate for sickle cell anaemia?
a) It cannot be treated with iron supplements. b) It is a molecular disease.
c) It confers resistance to acquiring malaria. d) All of the above.

201. Which of the following statements is correct?

a) Adenine pairs with thymine through three H-bonds
b) Adenine does not pair with thymine c) Adenine pairs with thymine through two H-bonds
d) Adenine pairs with thymine through one H-bond.

202. Multiple alleles are present:
a) At different loci on the same chromosome b) At the same locus of the chromosome
c) On non-sister chromatids d) On different chromosomes

203. In which mode of inheritance do you expect more maternal influence among the offspring?
a) Autosomal b) Cytoplasmic c) Y-linked d) X-linked

204. Whose experiments cracked the DNA and discovered unequivocally that a genetic code is a 'triplet'___
a) Hershey and Chase b) Morgan and Sturtevant c) Beadle and Tantum
d) Nirenberg and Mathaei

205. Genes that are involved in turning on or off the transcription of a set of structural genes are called_____
a) polymorphic genes b) operator genes c) reductant genes d) regulatory genes

206. In which of the following hn RNA is formed?
a) Nostoc b) Rhizobium c) Chlamydomonas d) Mycoplasma

207. In RNA, thymine is replaced by _____
a) adenine b) guanine c) cytosine d) Uracil

208. PCR and Restriction Fragment Length Polymorphism are the methods for
a) DNA sequencing b) Genetic fingerprinting c) Study of enzymes
d) Genetic transformation

209. Find the correct match:

Column I	Column II
a. Human genome	(i) 30,000 bp
b. DMD	(ii) 2400 kbp
c. TDF	(iii) 1.4 million
d. SNPs	(iv) 14bp
	(v) 30,000 genes

a) a(i), b(ii), c(iii), d(iv) b) a(i), b(ii), c(iv), d(iii) c) a(v), b(ii), c(iv), d(iii)
d) a(v), b(ii), c(iii), d(iv)

210. Amino acid acceptor end of tRNA lies at
a) 5' end b) 3' end c) T Ψ C loop d) DHU loop.

211. Long lived RNA is:
a) rRNA b) mRNA c) tRNA d) hnRNA

212. If there are 10,000 nitrogenous base pairs in a DNA then how many nucleotides are there
a) 500 b) 10000 c) 20000 d) 40000

213. Point mutation involves
a) Deletion b) Insertion c) Change in single base pair d) Duplication

214. In DNA strand, the nucleotides are linked together by

a) glycosidic bonds b) phosphodiester bonds c) peptide bonds d) hydrogen bonds.

215. Back bone in structure of DNA molecule is made up of-
a) Pentose Sugar and phosphate b) Hexose sugar and phosphate
c) Purine and purimidine d) Sugar and phosphate

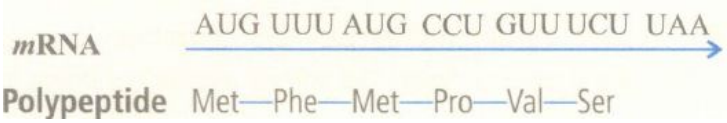
216. Estimated number of genes in human beings is
a) 3,000 b) 80,000 c) 20,500 d) 3×10^9

217. Experimental material used in transformation experiment was
a) Bacillus b) Bacteriophage c) Diplococcus d) E.coil

218. A population will not exist in Hardy- Weinberg equilibrium if:
a) There are no mutations b) There are no migration c) The population is large
d) Individuals mate slectively

219. Watson and Crick (1953) proposed DNA double helix model and won the Nobel Prize; their model of DNA was based on
(i) X-ray diffraction studies of DNA done by Wilkins and Franklin
(ii) Chargaff's base equivalence rule
(iii) Griffith's transformation experiment
(iv) Meselson and Stahl's experiment.
a) (i), (ii) and (iv) b) (i) and (ii) c) (iii) and (iv) d) (i), (ii), (iii) and (iv)

220. Read the sequence of nucleotides in the given segment of mRNA and the respective amino acid sequence in the polypeptide chain to answer the Q. nos. 65 and 66.



Which codons respectively code for proline and valine amino acids in the given polypeptide chain, respectively?
a) CCU and GUU b) GUU and UCU c) UCU and UAA d) GUU and CCU

221. Read the following four statements (A - D).
(A) In transcription, adenosine pairs with uracil
(B) Regulation of lac operon by repressor is referred to as positive regulation
(C) The human genome has approximately 50,000 genes
(D) Haemophilia is a sex-linked recessive disease
How many of the above statements are right?
a) Two b) Three c) Four d) One

222. The experimental proof for semi-conservative replication of DNA was first shown in a:
a) Plant b) Bacterium c) Fungus d) Virus

223. Grey is dominant (G) over black (g). Which of the following will most probably give 50% black and 50% grey offspring?
a) GG x gg b) Gg x gg c) GG x Gg d) gg x gg

224. Kornberg enzyme is known as
a) DNA polymerase I b) DNA polymerase II c) DNA polymerase III d) RNA polymerase

225. During replication of a bacterial chromosome DNA synthesis starts from a replication origin site and_____

a) RNA primers are involved b) is facilitated by telomerase
c) moves in one direction of the site d) moves in bi-directional way

226. What would happen if in a gene encoding a polypeptide of 50 amino acids, 25th codon (UAU) is mutated to UAA?
a) A polypeptide of 24 amino acids will be formed.
b) Two polypeptides of 24 and 25 amino acids will be formed.
c) A polypeptide of 49 amino acids will be formed.
d) A polypeptide of 25 amino acids will be formed.

227. Wilkins X- ray diffraction showed the diameter the DNA helix is-
a) 10Å b) 20Å c) 30Å d) 40Å

228. The basis for DNA fingerprinting is_____
a) occurrence of Restriction Fragment Length Polymorphism(RFLP)
b) phenotypic differences between individuals c) availability of cloned DNA
d) knowledge of human karyotype

229. Assertion: Synthesis of daughter or new strand occurs continuously along the parent 3'⟶5' strand.
Reason: DNA polymerase can polymerise nucleotides in 3'⟶5' direction on 5'⟶3' strand.
a) If both assertion and reason are true and reason is the correct explanation of assertion.
b) If both assertion and reasonare true but reason is not the correct explanation of assertion.
c) If assertion is true but reason is false. d) If both assertion and reasonare false

230. Which one of the following conditions of zygotic cell would lead to the birth of a normal human female child?
a) One X and one Y chromosome b) Two X chromosome c) Two X chromosome
d) Only one X chromosome

231. Match column I with column II and select the correct option from the given codes.

	Column I		**Column II**
A.	Sigma factor	(i)	5'-3'
B.	Capjling	(ii)	Initiation
C.	Tailing	(iii)	Termination
D.	Coding strand	(iv)	5' end
		(v)	3' end

a) A-(iii), B-(v). C-(iv), D-(ii) b) A-(ii), B-(iv), C-(v). D-(i) c) A-(ii), B-(iv), C-(v). D-(iii)
d) A-(iii), B-(v). C-(iv), D-(i)

232. To initiate translation, the mRNA first binds to
a) the smaller ribosomal sub-unit b) the larger ribosomal sub-unit c) the whole ribosome
d) no such specificity exists.

233. Translation refers to the process of-
a) Polymerisation of nitrogen bases b) Polymerisation of nucleotides
c) Polymerisation of nucleosides d) Polymerisation of amino acids

234. Transfer of genetic information from a polymer of nucleotides to a polymer of amino acid is -
a) Replication b) Transcription c) Translation d) Reverse transcription

235. The net electric charge on DNA and histones is
a) both positive b) both negative c) negative and positive, respectively d) zero

236. Pick out the correct statements:
(a) Haemophilia is a sex-linked recessive disease.
(b) Down's syndrome is due to aneuploidy.
(c) Phenylketonuria is an autosomal recessive gene disorder.
(d) Sickle cell anaemia is a X-linked recessive gene disorder.
a) (a) and (b) are correct b) (b) and (d) are correct c) (a), (c) and (d) are correct
d) (a), (b) and (c) are correct

237. In Hardy- Weinberg equation, the frequency of heterozygous individual is represented by:
a) pq b) q^2 c) P^2 d) 2pq

238. A pleiotropic gene:
a) controls multiple traits in an individual b) is expressed only in primitive plants
c) is a gene evolved during Pliocene
d) controls a trait only in combination with another gene

239. RNA is the genetic material in
a) prokaryotes b) eukaryotes c) Tobacco Mosaic Virus (TMV) d) E. coli.

240. In negative operon _____
a) co-repressor binds with repressor b) co-repressor does not bind with repressor
c) co-repressor binds with inducer d) CAMP have negative effect on lac operon

241. A bacterium with completely radioactive DNA was allowed to replicate in a non-radioactive medium for two generation what % of the bacteria should contain radioactive DNA
a) 100% b) 50% c) 25% d) 12.5%

242. Which Mendelism Idea is depicted by a cross in which the F_1 generation resembles both the parents?
a) co-dominance b) Incomplete dominance c) Law of dominance
d) inheritance of one gene

243. Which one of the following makes use of RNA as a template to synthesize DNA?
a) DNA polymerase b) RNA polymerase c) Reverse transcriptase
d) DNA dependant RNA polymerase

244. A complex of ribosomes attached to a single strand of RNA is known
a) Okazaki fragment b) polysome c) Polymer d) Polypeptide

245. A man with blood group 'A' marries a woman with blood group 'B'. What are all the possible blood group of their offsprings?
a) A, B and AB only b) A, B, AB and O c) O only d) A and B only

246. The diagram shows an important concept in the genetic implication of DNA. Fill in the blanks A to C.

a) A-transcription, B-replication, C-James Watson
b) A-translation, B-transcription, C-Everin Charagaff
c) A-transcription, B-translation, C-Francis Crick
d) A-translation, B-extension, C-Rosalind Franklin

247. Reverse transcriptase is_____
a) RNA dependent RNA polymerase b) DNA dependent RNA polymerase
c) DNA dependent DNA polymerase d) RNA dependent DNA polymerase

248. Spliceosomes are not found in cells of____
a) Fungi b) Animals c) Bacteria d) plants

249. Select the incorrect statement from the following
a) Baldness is a sex- limited trait
b) Linkage is an exception to the principle of independent assortment in heredity
c) Galactosemia is an inborn error of metabolism
d) Small population size results in random genetic drift in a population

250. Ligase enzyme is used for-
a) Denaturation of DNA b) splitting DNA into small bits c) Joining bits of DNA
d) Digestion of lipids