Time : 125 Mins **BIOLOGY TEST 62 MOLECULAR BASIS OF INHERITANCE 1** **Marks : 476**

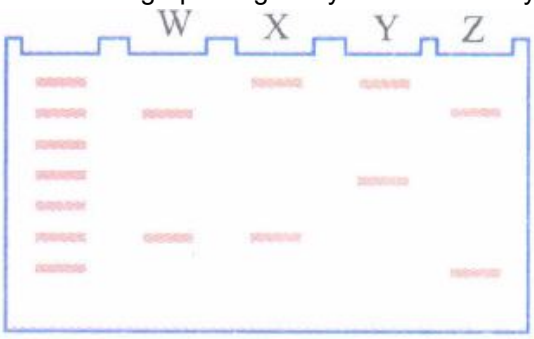
1. Complete linkage is found in
   a) Birds b) Snakes c) Female- Drosophila d) Male- Drosophila
2. A nucleoside differs from a nucleotide is not having
   a) Phosphate b) Sugar c) Phosphate & sugar d) Nitrogen base
3. In E.coli during lactose metabolism repressor/binds to_____ .
   a) promoter gene b) regulator gene c) operator gene d) structural gene
4. Which one of the following pairs of codons is correctly matched with their function or the signal for the particular amino acid?
   a) GUU GUU -Alanine b) UAGUGA-Stop c) AUG ACG-Start/Methionine d) UUA,UCA-Leucine
5. 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.
6. 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.
7. If number of aminoacids in a polypeptide chain is 50, what will be the number of nucleotides in its mRNA?
   a) 50 b) 100 c) 150 d) 200
8. DNA is a polymer of nucleotides which are linked to each other by 3' -5' phosphodiester bond. To prevent polymerisation of nucleotides, which of the following modifications would you choose?
   a) Replace purines with pyrimidines. b) Remove/Replace 3' OH group in deoxyribose
   c) Remove/Replace 2' OH group with some other group in deoxyribose d) Both (b) and (c).
9. 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)
10. Which antibiotic inhibits interaction between RNA and mRNA during bacterial protein synthesis?
    a) Neomycin b) Streptomycin c) Tetracycline d) Erythromycin
11. Which of the following is required as inducers) for the expression of lac operon?
    a) Glucose b) Galactose c) Lactose d) Lactose and galactose
12. 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
13. 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).
14. International Human Genome Project began in
    a) 1990 b) 1996 c) 2000 d) 2001

15. 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
16. In his classic experiments on pea plants, Mend did not use:
    a) Flower position b) Seed colour c) Pod length d) Seed shape
17. Sickle cell anemia results from a single base substitution in a gene, thus it is an example of
    a) point mutation b) frame-shift mutation c) silent mutation d) both (a) and (b).
18. 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%
19. Which of the following are the functions of RNA?
    a) It is a carrier of genetic information from DNA to ribosomes synthesising polypeptides.
    b) It carries amino acids to ribosomes c) It is a constituent component of ribosomes d) All of the above
20. When flowers are unisexual then emasculation is done in:
    a) Female b) Male c) 1 & 2 both d) None of these
21. One turn of the helix in a B-form DNA is approximately
    a) 20nm b) 0.34nm c) 3.4nm d) 2nm
22. 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
23. 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
24. Given below are the steps of protein synthesis. Arrange them in correct sequence and select the correct option.
    (i) Codon-anticodon reaction between mRNA and aminoacyl tRNA complex.
    (ii) Attachment of mRNA and smaller sub-unit of ribosome.
    (iii) Charging or aminoacylation of tRNA.
    (iv) Attachment of larger sub-unit of ribosome to the mRNA-$tRNA_{Met}$ complex.
    (v) Linking of adjacent amino acids.
    (vi) Formation of polypeptide chain
    a) (ii) ⟶ (i) ⟶ (iii) ⟶ (v) ⟶ (iv) ⟶ (vi) b) (v) ⟶ (ii) ⟶ (i) ⟶ (iii) ⟶ (iv) ⟶ (vi)
    c) (iii) ⟶ (ii) ⟶ (iv) ⟶ (i) ⟶ (v) ⟶ (vi) d) (iii) ⟶ (ii) ⟶ (i) ⟶ (iv) ⟶ (v) ⟶ (vi)
25. 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
26. Chemically, RNA is_____(i)_____reactive and_____(ii)_____ stable as compared to DNA.
    a) (i) equally, (ii) equally b) (i) less, (ii) more c) (i) more, (ii) less d) (i) more, (ii) equally
27. Which one of following does not follow the central dogma of molecular bilogy?
    a) Chlamydomonas b) HIV c) Pea d) Mucor
28. 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
29. Which statement is incorrect for lac operon?
    a) Repressor protein is the product of i-gene b) β-galactosidase is synthesized by lac Y
    c) Repressor binds operator gene d) Lactose acts as inducer
30. DNA precipitation out of a mixture of biomolecules can be achieved by treatment with_____
    a) Chilled ethanol b) Methanol at room temperature c) Chilled chloroform d) Isopropanol
31. Which of the following bond is not related to nucleic acid:
    a) H-bond b) Ester bond c) Glycosidic bond d) Peptide bond

32. VNTR varies in size from
    a) 0.1 to 2 bp b) 10 to 20 bp c) 0.1 to 20 kb d) 0.1 to 20 bp

33. 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

34. 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

35. In DNA when AGCT occurs, their association is as per which of the following pair?
    a) ACGT b) AGCT c) ATGC d) All of these

36. Which one of the following is the started codon?
    a) AUG b) UGA c) UAA d) UAG

37. In the DNA molecule_____
    a) the total amount of purine nucleotides and pyrimidine nucleotides is not always equal.
    b) there are two strands which run parallel in the $5' - >> 3'$ direction.
    c) the proportion of Adenine in relation to thymine varies with the organism.
    d) there are two strands which run anti parallel one in $5' \rightarrow 3'$ direction and other in $3' \rightarrow 5'$

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

39. The year 2003 was celebrated as the 50th anniversary of discovery of
    a) transposons by Barbara Mc Clintock b) structure of DNA by Watson and Crick
    c) Mendel's laws of inheritance d) biotechnology by Kary Mullis.

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

41. 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

42. Select the correct statement from the ones given below with respeect to dihybrid cross:
    a) Genes loosely linked on the same chromosome show similar recombinatios as the tightly linked ones
    b) Tightly linked genes on the same chromosome show very few recombinations
    c) Tightly linked genes on the same chromosome show higher recombination
    d) Genes far apart on the same chromosome show very few recombinations

43. 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

44. According to lac operon concept, the regulatory gene regulates biochemical reaction in a cell by:

a) Inhibiting transcription b) Inactivating enzymes c) Inactivating substrate

d) Inhibiting migration of mRNA

45. Crossing AABB & aabb, the probability of AaBb would be in F_2 generation
a) 1/16 b) 2/16 c) 8/16 d) 4/16

46. The most popularly known blood grouping is the ABO grouping. It is named ABO and not ABC, because "O" in it refers to having:
a) No antigens A and B on RBCs b) Other antigens besides A and B on RBCs

c) Overdominance of this type on the genes for A and B types

d) One antibody only-either anti-B on the RBCs

47. Which are the commonly used vectors for human genome sequencing?
a) BAC and YAC b) Expression vectors c) T-DNA d) T/Acloning vectors

48. 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}

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

50. The first amino acid in any polypeptide chain of prokaryote is always
a) Formylated methionine b) Formylated arginine c) Lysine d) Methionine

51. Which of the following statements regarding 'human genome' is incorrect?
a) Human genome consists of 3 x 10^9 bp and about 20,500 genes.
b) The average gene size is 3000 bp and dystrophin is the largest known human gene.
c)
Chromosome 1 contains maximum (2968) number of genes and V-chromosome has the least (231) number of genes
d) Repeated (or repetitive) sequences are not present in human genome.

52. 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

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

	Column I (Scientists)		**Column II (Discoveries)**
A.	Alec Jeffreys	(i)	Lac operon
B.	F. Sanger	(ii)	Annotated DNA sequences
C.	Jacob and Monod	(iii)	DNA fingerprinting
D.	Avery, Macleod and McCarty	(iv)	Transforming principle

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

54. 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

55. 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.

56. A true breeding plant is:

a) near homozygous and produces offspring of its own kind

b) always homozygous recessive in its genetics constitution c) one that is able to breed on its own

d) produced due to cross-pollination among unrelated plants

57. The chromosome which was last to be sequenced in May, 2006 was
    a) X chromosome b) Y chromosome c) Chromosome 1 d) Chromosome 22

58. 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

59. 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

60. Match the following genes of the Lac operon with their respective products:
    (a) i gene - (i) $\beta\beta-$ galactosidase
    (b) z gene - (ii) Permease
    (c) a gene - (iii) Repressor
    (d) y gene - (iv) Transacctylase
    Select the correct option.
    a) (iii) (i) (ii) (iv) b) (iii) (i) (iv) (ii) c) (iii) (iv) (i) (ii) d) (i) (iii) (ii) (iv)

61. What is the inheritance of colour blindness of both parents having a normal vision but mother has a recessive gene for colour blindness

a)

Son	**Daughter**
50%	Nil

b)

Son	**Daughter**
100%	Nil

c)

Son	**Daughter**
Nil	100%

d)

Son	**Daughter**
Nil	Nil

62. Due to discovery of which of the following in 1980 the evolution was termed as RNA world?
    a) mRNA, tRNA, rRNA synthesise proteins b) In some virus RNA is genetic material
    c) RNA have enzymatic Property d) RNA is not found in all cells

63. 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

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

65. The RNA polymerase holoenzyme transcribes
    a) the promoter, structural gene and the terminator region b) the promoter and the terminator region
    c) the structural gene and the terminator region d) the structural gene only.

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

67. Two allelic genes are located on:
    a) The same chromosome b) Two homologous chromosomes c) Two-non-homologous chromosomes
    d) Any chromosomes

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

69. Read the following statements and select the correct option.
    (i) Loosely packed and lightly stained region of chromatin are called as heterochromatin.
    (ii) Densely packed and dark stained region of chromatin are called as euchromatin.
    (iii) A typical nucleosome contains 200 bp of DNA hehx.
    a) Statements (i) and (ii) are true, but statement (iii) is false.
    b) Statements (i) and (ii) are false, but statement (iii) is true.
    c) Statements (ii) and (iii) are true, but statement (i) is false. d) All the statements are true

70. During DNA replication, the strands separate by_____
a) DNA polymerase b) topoisomerase c) unwindase/helicass d) gyrase

71. DNA differs from RNA in
a) Only Sugar b) Nitrogen base only c) Nitrogen base and sugar d) None

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. 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

74. 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)

75. Which was the last human chromosome to be completely sequenced?
a) Chromosome 1 b) Chromosome 11 c) Chromosome 21 d) Chromosome X

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

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

78. DNA as an acidic substance present in nucleus was first identified by in _____1869; he named it as __.
a) Meischer, nuclein b) Watson and Crick, DNA c) Chargaff, nuclein d) Wilkins and Franklin, double helix

79. Who proved that DNA is basic genetic material?
a) Griffith b) Watson c) Boveri and Sutton d) Hershey and Chase

80. Cap nucleotlde s at 5' of mRNA consists of
a) m^7G b) m^5C c) Poly A d) CCA

81. Which one of the following is a wrong statement regarding mutations?
a) UV and Gamma rays are mutagens b) Change in a single base pair of DNA does not cause mutation
c) Deletion and insertion of base pairs cause frameshift mutations
d) Cancer cells commonly show chromosomal aberrations

82. 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

83. According to Chargaff rule, A+T/G+C value in E. coli and human beings respectively are
a) 1.52 and 0.97 b) 0.93 and 1.52 c) 0.66 and 1 d) Always unit in both

84. 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

85. Semiconservatlve mode of DNA replication was experimentally proved in prokaryotes by
a) Meselson and Stahl b) Taylor c) Jacob and Monod d) A. Kornberg

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

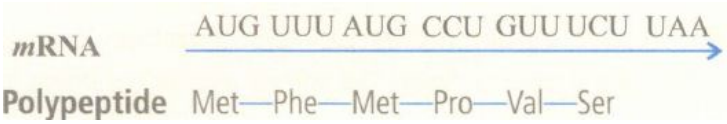
87. In a mRNA molecule, untranslated regions (UTRs) are present at:
a) 5'-end (before start codon) b) 3'-end (after stop codon) c) both (a) and (b) d) 3' - end only.

88. How many pairs of contrasting characters in pea plants were studied by Mendel in his experiments?
a) Six b) Eight c) Seven d) Five

89. 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

90. If distance between gene on chromosome is then gene shows:
a) Weak linkage b) Strong linkage c) Less crossing d) 1 & 3 both

91. 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.

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

93. t-RNA attaches, amino acid at its:
a) 3' end b) 5' end c) Anticodon d) Loop

94. **Assertion:** A change in nitrogen base at the third position of a codon causes change in the expression of the codon.
Reason : A codon is mostly read by all the three nitrogen bases
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

95. Transformation experiment was first performed on which bacteria?
a) E.coli b) Diplococcus pneumoniae c) Salmonella d) Pasteurella pestis

96. Histone proteins are
a) basic, negatively charged b) basic, positively charged c) acidic, positively charged
d) acidic, negatively charged.

97. DNA replication is_____
a) conservative and discontinuous b) semi-conservative and semidiscontinuous
c) semi-conservative and discontinuous d) conservative

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

99. 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)

100. The process of translation is_____
a) ribosome synthesis b) protein synthesis c) DNA synthesis d) RNA synthesis

101. If the sequence of bases in DNA is ATTCGATG, then the sequence of bases in its transcript will be_____
a) CAUCGAAU b) UAAGCUAC c) GUAGCUUA d) AUUCGAUG

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

103. In pedigree analysis symbol is used for ⊙ is used for

a) Heterozygous for autosomal recessive b) Affected individuals c) Death

d) Carrier for sex linked recessive

104. Which of the following is a stop codon

a) AUG,GUG,UUU b) UGA,UAG,UAA c) UUU,UAC,CUC d) CUC,UAC,UAA

105. 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

106. Dihybrid plants from how many types of pollen grains

a) One b) Two c) Four d) Eight

107. If there are 999 bases in an RNA that codes for a protein with 33 amino acids, and the base at position 901 is deleted such that the length of the RNA becomes 998 bases, how many codons will be altered?

a) 1 b) 11 c) 33 d) 333

108. The first codon discovered by Nirenberg and Mathei was

a) CCC b) GGG c) UUU d) AAA

109. Match the terms in Column-I with their description in Column-II and choose the correct option:

Column-I		Column-II	
(a)	Dominance	(i)	Many genes govern a single character
(b)	Codominance	(ii)	In a heterozygous organism only one allele expresses itself
(c)	Pleiotropy	(iii)	In a heterozygous organism both alleles express themselves fully
(d)	Polygenic inheritance	(iv)	A single gene influence many characters

a)

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

b)

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

c)

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

d)

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

110. Khorana first deciphered the triplet codons of_____

a) serine and isoleucine b) threonine and histidine c) tyrosine and tryptophan

d) phenylalanine and methionine

111. Triticale, the first man-made cereal crop, has been obtained by crossing wheat with-

a) Rye b) Pearl millet c) Sugarcane d) Barley

112. 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

113. 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%

114. 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

115. **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

116. Which one among the following was the first genetic material?
a) DNA b) RNA c) Protein d) Nuclein

117. 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

118. **Assertion:** When the DNA sequences of two people are cut using the same restriction enzyme, the length and number of fragments obtained are different for both.
Reason: DNA sequence is arranged tandemly in many copy numbers which varies from chromosome to chromosome in an individual, showing high degree of polymorphism.
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

119. 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%

120. Haploids are more suitable for mutation studies than the diploids. This is because:
a) haploids are more abundant in nature than diploids
b) All mutations, whether dominant or recessive are expressed in haploids
c) Haploids are reproductively more stable than diploids
d) Mutagens penetrate in haploids more effectively than in diploids

121. A nucleoside differs from a nucleotide. It lacks the
a) base b) sugar c) phosphate group d) hydroxyl group

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

123. rRNA is synthesised in
a) Nucleus b) Glogi body c) Cytoplasm d) Nucleoplasm

124. DNA fingerprinting refers to
a) Techniques used for identification of fingerprints of individuals
b) Molecular analysis of profiles of DNA samples c) Analysis of DNA samples using imprinting devices
d) Techniques used for molecular analysis of different specimens of DNA

125. DNA replication takes place at_____ phase of the cell cycle.
a) G_1 b) S c) G_2 d) M