BIOLOGY

BOOKS - UNIVERSAL BOOK DEPOT 1960 BIOLOGY (HINGLISH)

MOLECULAR BASIS OF INHERITANCE

Molecular Basis Of Inheritance

1. A complex of ribosome attached to a single RNA is known as

A. Polysome

B. Polymer

C. Polypeptide

D. Okazaki fragment

Answer: A

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2. Isolation and purification of specific DNA segment from a living organism was axhieved by

A. Crick

B. Nirenberg

C. Khorana

D. Beckwith and his colleagues

Answer: b

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3. Cyclic adenosine monophophate was discovered by

` Or vAMP mediated 'Cascade model' of enzyme regulation eas proposed by

A. Bekhor et al

B. E. W. Sutherland

C. Beerman

D. Weismann

Answer: b

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4. Genetic information in a DNA molecule is coded in the

A. No of bases

B. Sequence of nucleotides

C. Length of DNA

D. Number of nucleosides

Answer: B

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5. Prokaryotic genome system has or The bacterial genome contains

A. DNA and histone

B. DNA and no histone

C. No DNA and histone

D. No DNA and no histone

Answer: B

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6. The polymerase chain reaction is a technique that

A. Is used for in vivo replication of DNA

B. $Isusedf \text{ or } \in vivosynthesisofmRNA$

C. $Isusedf \text{ or } \in vitrosynthesisofmRNA$

D.

$$Usedf \text{ or } \in vir \rightarrow replicationofspec \text{ if } icDNAsequenceu \sin gth$$

Answer: d

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7. If an isolated strain of DNA is kept at 82- 90° C , then

A. It change into RNA

B. It divides into one million pieces

C. No effect

D. It uncoils into helixes

Answer: d

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8. Antiparallel strands of a DNA molecule means that

A. The phosphate groups at start of two DNA strands are in opposite position (pole)

B. One strand turns clockwise

C. One starnds turns anti- clockwise

D. The phosphate groupe of two DNA strands , at their ends, share the same position

Answer: A

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9. Which site of a t-RNA molecule hydrogen bonds to a m-RNA molecule

A. Codon

B. Anticodon

C. 5' end of t he t-RNA molecule

D. 3' end of the t-RNA molecule

Answer: b

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10. Nucleotide arrangement in DNA can be seen by

A. X- ray crystallography

B. Electron microscope

C. Ultracentrifuge

D. Light microscope

Answer: A

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11. RNA interfeence is essential for the

A. Cell proliferation

B. Cell defence

C. Cell differentiation

D. Micropropagation

Answer: b

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12. Who was awarded Noble prize for synthesis of RNA in 1959

A. S. Ochoa

B. A. Kornberg

C. H. Khorana

D. Nirenberg

Answer: a

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13. Break throught if the year 2002

A. cDNA

B. 16 SrRNA

C. rDNA

D. miRNA

Answer: d

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14. Uridine, present only in RNA is

A. Nucleoside

B. Nucleotide

C. Purine

D. Pyrimidine

Answer: D

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15.

A. Adenylic acid

B. Uracil

C. Cholesterol

D. Adenosine

Answer: b

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16. Feulgen reaction is special test for

A. RNA

B. DNA

C. Protein

D. Carbohydrate

Answer: b

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17. There is no DNA in

A. An enucleated ovum

B. Mature RBCs

C. A marure spermatozoan

D. Hair root

Answer: b

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18. Removal of introns and joining the exons in a defines order in a transcription unit is called

A. Splicing

B. Tailing

C. Transformation

D. Capping

Answer: a

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19. Semiconservative model of DNA replication was proposed by which workers in eukaryotes

A. Taylor, Woods and Hughes, 1957

B. Messelson and stahl,1957

C. Nirenberg and Khorana, 1967

D. Watson and Crick, 1952

Answer: b

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20. Semiconservative replication of DNA was first demonstrated in

A. Drosophila melanogaster

B. Escherichia coli (bacteria

C. Streptococcus pneumoniae

D. Salmonell typhimurium

Answer: B

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21. Which one of the following pairs of nitrogenous bases of nucleic acids, is wrongly matched with the category mentioned against it

A. Guanine , Adenine - Purines

B. Adenine, Thymine - Purines

C. Thymine, Uracil - Pyrimidines

D. Uracil, Cytosine - Pyrimidines

Answer: b

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22. Which one of the following is called polynucleotide joining enzyme

` Or Okazaki fragments are linked by or A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using

A. Polymerase I

B. Polymerase II

C. Ligase

D. Ribonuclease

Answer: c

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23. One turn of the helix in a B- from DNA is approximately

A. 3.4 nm

B. 2 nm

C. 20 nm

D. 0.34 nm

Answer: a

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24. A- DNA is

A. Lefthanded helix with 12 nucleotide pair per turn

B. Right handed helix with 11 nucleotide pair per turn

C. Right handed helix with 12 nucleotide pair per turn

D. Left handed helix with 11 nucleotide pair per turn

Answer: b

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25. Which form of RNA is most heterogeneous

A. tRNA

B. mRNA

C. rRNA

D. hnRNA

Answer: d

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26. The name"mRNA" was given by

A. Kornberg and khorana

B. Khorana and Nirenberg

C. Jacob and Monad

D. Messelson and Stahl

Answer: c

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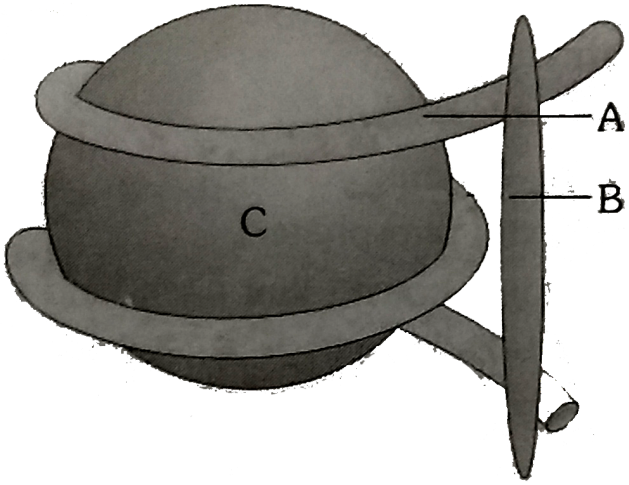
27. Study the given figure of Nucleosome (structural unit of chromatin). Identify its componental parts indicated by A,B and C



A. A- DNA,B- Non histone, C Histone

B. A-RNA,B-Histone octamer, C-H1 histone

C. A-DNA, B - H1 histone, C - Histone octamer

D. A - RNA, B -Non histone , C - Histone

Answer: c

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28. In the double helix modle of DNA , how far is each base pair from the next base pair

A. 3.4 nm

B. 0.34 nm

C. 2.0 nm

D. 34 nm

Answer: B

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29. The nitrogen base found only in DNA is also called

A. Uracil

B. 5- methyl uracil

C. Guanine

D. NH_4CL

Answer: b

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30. 3' AAA TGC GCG ATA 5' is the sequence of nuclotides on a gene , after transcription the mRNA formed against it and the sequence of bases in the corresponding binding anticodons will be

A. 5' UUU ACG UAU 3' and 3' AAA- UGC- GCG -AUA 5'

B. 5'UAU CGC GCA UUU 3'and 3' AUA -GCG -CGU- AAA 5'

C. 5' UUU ACC TUG UAU 3' and 3' AAA -UGG-UAC-AUA 5'

D. 5' UAU GUT CCA UUU 3' and AUA -CAU- GGU AAA 5'

Answer: a

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31. The enzyme, which helps to cut one strand of DNA duplex to release tension of coiling of two strands is

A. DNA ligase

B. DNA polymerase I

C. Topo - isomerase

D. Swielases (helicase or unwindadsea

Answer: C

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32. In the DNA molecule

A. The proportion of Adenine in relation to thymine varies with the organism

B. There are two strands which run aniparallel - one in 5' to 3' direction and other in 3' to 5 '

C. The total amount of purine nucleotides and pyrimidine nucleotides is not always equal

D. There are two strands which run parallel in the 5' to 3' direction

Answer: B

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33. Which enzyme is responsible for linking the fragments of DNA

Or The DNA joining enzyme, required on recombinant DNA technology

A. DNA polymerase III

B. Endonuclease

C. DNA polymerase I

D. DNA ligase

Answer: D

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34. The double helical model of the DNA was proposed by Watson and Crick based on what data produced by wilkins and Franklin

A. Hybridization

B. DNA sequencing

C. Southern blotting

D. X-ray diffraction

Answer: e

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35. DNA polymerase helps in

A. Joining bits of DNA

B. Splitting or separation of two strands of DNA

C. Renaturation

D. Denaturation

Answer: A

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36. In a 3.2 Kbp long piece of DNA , 820 adenine bases were found. What would be number of cyosine bases

A. 780

B. 1560

C. 740

D. 1480

Answer: a

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37. Histone occupies the major grooves of DNA at an angle of

A. 15°

B. 90°

C. 45° to the helix axis

D. 30° to the helix axis

Answer: c

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38. For transformation, micro- particales coated with DNA to be bombarded with ghene gun are made up of

A. Silver or Platinum

B. Platinum or Zinc

C. Silicon or Platinum

D. Gold or Tungsten

Answer: d

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39. what is antisense technology

A. When a piece of RNA that is complementary in sequence is used to stop expression of a specific gene

B. RNA polymerase producing DNA

C. A cell displaying a foreion antigens used for synthesis of antigens

D. Production of somaclonal variants in tissue cultures

Answer: a

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40. which one of the following is not applicable to RNA

A. 5' phosphoryl and 3' hydroxyl ends

B. Heterocyclic nitrogenous bases

C. Chargaff' s rule

D. Complementary bases pairing

Answer: C

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41. The prokaryotic enzymes with 5' to 3' exonuclease property is/are

A. DNA polymerase I

B. DNA polymerase II

C. DNA polymerase III

D. Both(a) and (c)

Answer: A

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42. A 340 Å long segment of DNA molecules has 20 thymine nitrogenous bases, what will be the number of guanine nitrogen b ases in the same segment

A. 10

B. 40

C. 80

D. 160

Answer: c

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43. Which one of the following pair is correctly matched

A. Frederick Griffith Discovered the phenomenon of transformation

B. Linus Pauling Isolated the DNA for the first time

C. Francis Crick Proposed one gene one polypeptide hypothesis

D. George Beadle Proposed the concept of inborn errors

Answer: a

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44. Chargaff' s rule states or Which one of the following ratio constant in DNA of different species

A. A+G = T+C

B. A+T=G+C

C. A+C = T+C

D. All of the above

Answer: A

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45. The method developed by Matthew Meselson and Franklin Stahl to separate heavy DNA with $\hat{}(15)$N from DNA with $\hat{}(14)$ N, for providing evidence for semi- conservative replication of DNA is

A. Ion exchange chromatoraphy

B. Density gradient centrifugation

C. Buoyant density centrifugation

D. Gel filtration

Answer: C

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46. The haploid content of human DNA is

A. 3.3×10^9 bp

B. 3.3×10^9 kbp

C. 4.6 xx 10^(6) bp

D. 48502 bp

Answer: A

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47. True replication of DNA is possible due to

A. `Hydrogen bonding

B. Phosphate backbone

C. Complementary base pairing rule

D. None of the above

Answer: C

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48. Replication of DNA is in

A. 3' $\rightarrow$ 5' direction

B. 2' $\rightarrow$ 5' direction

C. Both 3' $\rightarrow$ 5 ' to 3' dirction

D. None of these

Answer: c

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49. DNA replication is aided by

A. DNA polymerase only

B. DNA ligase only

C. Both polymerase and ligase

D. RNA polymerase

Answer: C

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50. If the DNA condons are ATG ATG ATG and a cytosine base is inserted at the beginning , which of the following will result

A. A non- sense mutation

B. CA TGA TGA TG

C. CAT GAT GAT G

D. C ATG ATG ATG

Answer: c

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51. Melting of DNA at an elevated temperature$(70^{\circ}C)$ is primarily due to the breakdown of

A. Phosphodiester bonds

B. Glycosidic bonds

C. Sugar molecule

D. All of these

Answer: d

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52. The part of molecule that varies among DNA molecule is

A. Phosphate molecule

B. Nitrogen base

C. Suger molecule

D. All of these

Answer: B

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53. Ribozyme is

A. RNA without suger

B. RNA without phosphare

C. RNA having enzymic ctivity

D. RNA with extra phosphate

Answer: c

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54. Beadle and Tatum showed that each kind of mutant bread mould they studied lacked a specific enzyme.Their experiments demonstrated that

A. Cells needs specific enzymes in order to function

B. Genes are made of DNA

C. Enzymes are required to repair damage

D. Genes carry information for making proteins

Answer: d

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55. DNA is methylared at

A. A-residue

B. G-residue

C. T-residue

D. C - residue

Answer: c

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56. Purines of DNA are represented by

A. Uracill and thymine

B. Guanine and adenine

C. Uracil and cytosine

D. Thymine and cytosine

Answer: B

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57. A nucleoside differs from a nucleotide in not having

A. Phosphate

B. Suger

C. Nitrogen base

D. Phosphate and suger

Answer: A

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58. Watson and Crick are known for their discovvery that DNA

A. Is a single stranded helix

B. Contains deoxyribose only

C. Is a double stranded helix

D. Synthesizes rRNA

Answer: c

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59. The anti -paralle nature of DNA refers to

A. Its charged phosphated groups

B. The formation of hydrogen bonds between from opposite strands

C. The opposite direction of the two strands

D. The pairing of bases on one strands with bases on the other strands

Answer: c

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60. Phoshorus is present in

A. Protein

B. DNA

C. RNA

D. Both DNA and RNA

Answer: d

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61. The enzyme which can cut molecules of DNA into segments is known as

A. DNA poymerase

B. DNA ligase

C. Restriction enzyme

D. DNA gyrase

Answer: c

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62. DNA cossists of two complementary nucleotide chains . If the sequence of nucleotide in one of the chains is AGCTTCGA, then the nuclleotide sequence in the other chain shall be

A. TAGCATAT

B. GATCCTAG

C. TCGAAGCT

D. GCTAAGCT

Answer: c

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63. Eukaryotes differ from prokaryotes in the mechaism of DNA replication due to

A. Different enymes (instead of same enzyme for synthesis of lagging and leading strands

B. Discontiuous rather th en semidiscontinuous replication

C. Use of DNA primers rather then bidirectional replication

D. Unidirectional rather then bodirectional replication

Answer: b

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64. Mode of DNA replication in E. coil is

A. Conservative and unidirectional

B. Semi conservative and unidirectional

C. Conservative and bidirectional

D. Semi conservative and bidirectional

Answer: D

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65. If there are 120 adenine molecule in abDNA double helical structure showing 20 coils, what is the number of pyrimidine nucleotides forming three hydrogen bonds in it

A. 80

B. 100

C. 120

D. 140

Answer: a

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66. Okazaki segments are formed during or DNA multiplication is called

A. Replication

B. Transduction

C. Transcription

D. Translation

Answer: A

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67. Ribosomal RNA is synthesised in

A. Nucleolus

B. Nucleosome

C. Ribosome

D. Lysosome

Answer: A

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68. DNA is transcribed by some viral RNA using the enzyme or Information transfer from RNA to DNA is called

Or Which one of the following makes use of RNA as a template to synthesize DNA

A. DNA polymerase

B. Reverse transcriptase

C. Endonuclease

D. Ligase

Answer: b

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69. Tha charcteristics of a molecular probe are ltbr gt (I) Very long molecule

(II) Double stranded

(III) DNA or RNA

(IV) Complementary to a part of desired gene the correct pair is

A. I,II

B. II,III

C. III,IV

D. IV,I

Answer: c

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70. Transcription of DNA is aided by

A. RNA polymerase

B. DNA polymerase

C. Exonuclease

D. Recombinase

Answer: A

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71. Which of the endonuclease is mostly used in Genetic Engineering

A. Type I

B. Type II

C. Type III

D. (a)& (c)

Answer: b

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72. Which DNA replication starts

A. The leading strand produces Okazaki fragments

B. The hydrogen bonds between the nucleotides of two strands break

C. The phosphodiester bonds between the adjacent nucleotides break

D. The bonds between the nitrogen base and deoxyribose suger break

Answer: b

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73. Okazaki segments are formed during or DNA multiplication is called

A. Leading strand of DNA only

B. Leagg strand of DNA only

C. Both leading and legging strand of DNA

D. Complementary DNA

Answer: b

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74. mRNA is a polymer of

A. Deoxyribonucleosides

B. Ribonucleosides

C. Deoxyribonucleotides

D. Ribonucleotides

Answer: D

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75. Non - genetic RNA is of`

A. Two types

B. Three types

C. Only one type

D. None of these

Answer: b

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76. What is the type of coiling in DNA

A. Right- handed

B. Left- handed

C. Zig- Zig

D. Opposite

Answer: a

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77. The successive nucleotides of RNA are covalently linked through or antiparallal

A. Glycosidic bonds

B. Phosphodiester bonds

C. Hydrogen bonds

D. None of these

Answer: b

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78. During DNA replication, the addition of nucleotides on the lagging strand occurs

A. Towards the replicating fork

B. At a faster rate then leading strand

C. Continuously

D. Discontinuously

Answer: D

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79. Recombinant DNA is achieved by cleaving the pro- DNAs by or DNA finger printing is based on DNA segments formed by

A. Primase

B. Exonucleases

C. Ligase

D. Restriction endonuclease

Answer: d

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80. The chemical knives of DNA are

Or Enzyme that cleaves nucleic acids within the polynucleootide chain is known as

A. Ligases

B. Polymerases

C. Endonuceases

D. Transcriptases

Answer: c

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81. In sea urchin DNA, which is double stranded, 17% of the bases were show to be cytosine. The percentages of the other three bases expected to be present in this DNA are

A. G 17%, A 16 .5%, T 32.5 %

B. G 17 %, A 33%, T 33%

C. G 8.5%, A 50%, T 24.5 %

D. G 34 %, A 24.5% , T24.5%

Answer: b

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82. Which of the following RNAs up specific amino acid (from amino acid pool) in the cytoplasm to ribosome during protein synthesis

Or Which form of RNA has a structure resebling clover leaf

A. tRNA

B. mRNA

C. rRNA

D. All of these

Answer: a

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83. Read the following statements and choose the correct option.

A. Nitrogenous base is linked to the pentose sugar through a N-glycosidic linkage.

B. Phosphate group is linked to 5'-OH of a nucleoside through phosphoester linkage.

C. Two nucleosides are linked through 3'-5' N- glycosidic linkage.

D. Negatively charged DNA is wrapped around positively charged histone octamer to form nucleosome.

A. A, B and C alone are wrong

B. D alone is wrong

C. C and E alone are wrong

D. A alone is wrong

Answer: c

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84. The substance that acts as connecting link between two generations is

A. Ribonucleic acid

B. Deoxyribonucleic acid

C. Nucleoplasm

D. Ribonuclease acid + Deoxyribonucleic acid

Answer: b

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85. Which one of the following peak absorption of ultraviolet light by heterocyclic bases (Nitrogen bases)

A. 1500 nm

B. 26 nm

C. 75 nm

D. 260 nm

Answer: d

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86. The enzyme that breaks H_2 bonds in DNA is

A. Helicase

B. Topoisomerase

C. Ligase

D. Polymerase

Answer: a

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87. Exon part of m- RNA code for

A. Protein

B. Lipid

C. Phospholipid

D. Carbohydrate

Answer: a

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88. It ha s not escaped our notice t hat the specific pairing we have postulated immediately suggests a possible copying mechanism for genetic material. This is written by

A. Meselson and Stahl

B. rchibold Garrod

C. Secero Ochoa

D. Watson and Crick

Answer: d

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89. DNA elemaets, which can switch their position , are called

A. Exons

B. Introns

C. Cistrons

D. Transposns/Jumping genes

Answer: d

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90. Which specific DNA sequence where Eco R1 cuts is

Or Which of the following palindromic seqence is recongized by EcoRI

A. $\begin{matrix} ATTCGA \\ TAAGCT \end{matrix}$

B. $\begin{matrix} GAATTC \\ CTTAAG \end{matrix}$

C. $\begin{matrix} GCTTAA \\ CGAATT \end{matrix}$

D. $\begin{matrix} GTTCAA \\ CAAGTT \end{matrix}$

Answer: b

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91. The enzyme DNA polymerase was discovered by

A. Kornberg

B. Okazaki

C. Watson and Crick

D. Jacob and Monod

Answer: a

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92. What is fals about t RNA

A. It binds with an amino acid at it 5' end

B. It has five double stranded regions

C. It has a codon at one end which recognizes the anticodon on messenger RNA

D. It looks like clover leaf in the three dimensional structure

Answer: a

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93. c-DNA can be formed by

A. Transaminase

B. DNA ligase

C. RNA dependent DNA polymerase (Reverse Transcriptase)

D. DNA dependent DNA polymerase

Answer: c

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94. Which of the following is not correct

A. A/T =1

B. A + T = G + C

C. A + G = C + T

D. None of these

Answer: B

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95. Which is not correctly matched

A. Lipase - Hydrolysis of fats

B. Isomerases - Joinong of similar substrate and management of substrate

C. Polymerase - Chain elongation

D. DNA ligase - Breaks DNA strand into two segments

Answer: d

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96. In a mutational event, when adenine is replaced by guanine it is a case of

Or A mutation which substitutes one base with another purine base is called

A. Transition

B. Transversion

C. Frameshift mutation

D. Transcription

Answer: a

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97. During transcription, if the nucleotide sequence of the DNA strand that is being coded is ATACG, then the nucleotide sequence in the m RNA would be

A. UAUGC

B. UATGC

C. TATGC

D. TCTGG

Answer: a

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98. During replication of a bacterial chromosome DNA syntnthesis stars from a replication origin site and

A. Moves in one direation of the site

B. Moves in bi- directional way

C. RNA primers are toemerase

D. Is facilitated by tolemerase

Answer: b

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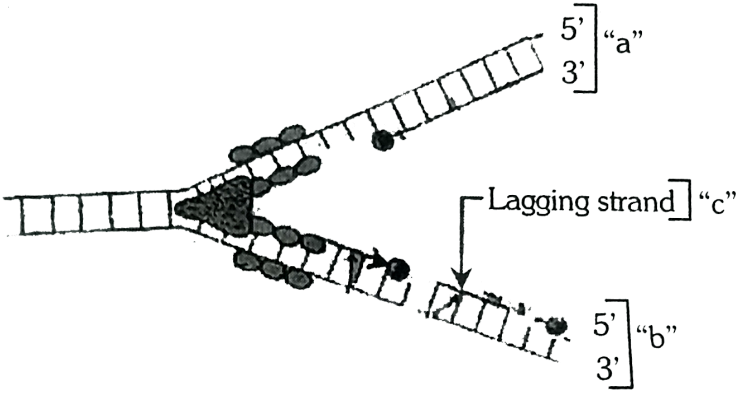
99. Which option show correctly labelled region in the given diagram of DNA replication



A. Only c

B. a , c

C. a, b

D. b, c

Answer: A

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100. Removal of RNA polymerase III from nucleoplasm will affect the synthesis of

Or Eukaryotic RNA Polymerase III catalyse the synthesis of

A. tRNA

B. hnRNA

C. mRNA

D. rRNA

Answer: a

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101. DNA repairing is done by

A. Ligases

B. DNA Polymerase III

C. DNA polymerase II

D. DNA polymerase I

Answer: d

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102. Transforming principle in Griffith's experiment was DNA. It was discovered by :

A. Zinder and Lederberg

B. Avery, McLeod and McCarthy

C. Lederberg and Tatum

D. Zinder and Tatum

Answer: b

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103. The enzyme required to catayze the polymerzatio of deoxynucleotides is

A. DNA ligase

B. DNA polymerase

C. beta-galactosidase

D. Transacetyase

Answer: b

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104. The bacterium used in Griffith's experiment was :

A. Bacillus

B. Monococcus

C. Diplococcus

D. Spirillum

Answer: c

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105. Which RNA carries the amino acids from the amino acid pool to mRNA during protein synthesis?

A. s-RNA

B. t-RNA

C. r-RNA

D. m-RNA

Answer: d

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106. New strand on a DNA template is initiated by

A. RNA polymerase

B. DNA Polymerase

C. DNA ligase

D. None of these

Answer: d

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107. Durning DNA replication, the strands separate by

A. DNA polymerase

B. Unwindase

C. Gyrase

D. Toposisomerase

Answer: b

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108. Select the correct option

	Direction of RNA synthesis	Direction of reading of the template DNA strand
(a)	5' – 3'	5' – 3'
(b)	3' – 5'	3' – 5'
(c)	5' – 3'	3' – 5'
(d)	3' – 5'	5' – 3'

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109. There are special proteins that help to open up DNA double helix in front of the replication frok . These protein are

A. DNA ligase

B. DNA gyrase

C. DNA polymerase I

D. None of these

Answer: b

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110. In a hair pin modle of RNA which nitrogen base is present at the short end

A. Adenine

B. Guanine

C. Thymine

D. Cytossine

Answer: b

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111. The sticky ends of a fragmented DNA molecule are made of

A. Free methylation

B. Enodonuclease

C. Unpaired bases

D. Calcium ions

Answer: c

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112. Choose the correct statement about the direation of DNA strand

A. 5' $\rightarrow$ 3'` takes place on template strand

B. 3' $\rightarrow$ 5'` takes place on new strand

C. 5' $\rightarrow$ 3' takes place on leading strand

D. None of these

Answer: c

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113. Which one of the following hydrolyses internal phosphodiester, bonds in a polynucleotide chain

A. Lipase

B. Exonucleases

C. Endonuclease

D. Protease

Answer: c

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114. Nucleotide are building blocks of nucleic acids.Each nucleotide is a composite molecule formed by

A. (Base- sugar)n

B. Base- sugar -OH

C. Base -sugar -phosphate

D. Sugar - phosphate

Answer: c

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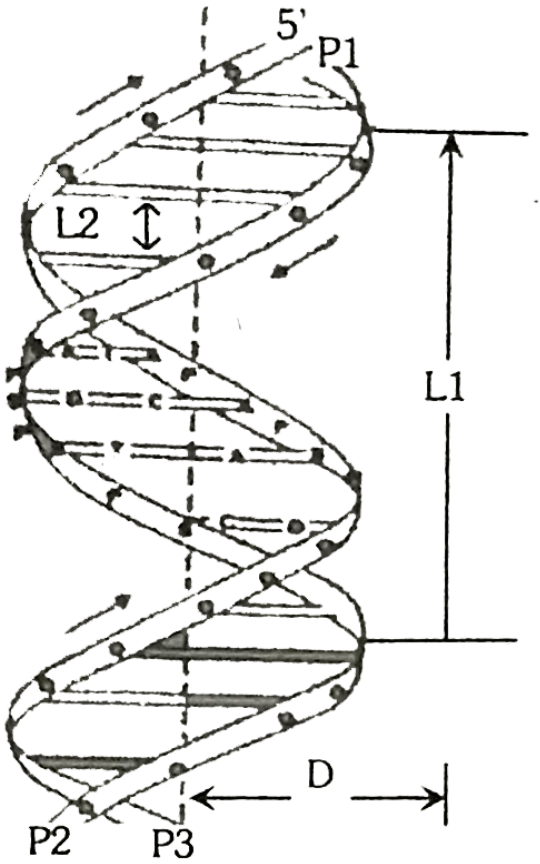
115. The adjoining figure given below show DNA double helix. Which one of the following option given the correct information about the DNA



	P1	P2	P3	L1	L2	D
(a)	3'	5'	3'	3.4 Å	34 Å	20 Å
(b)	3'	5'	3'	34 Å	3.4 Å	20 Å
(c)	3'	5'	3'	3.4 Å	34 Å	10 Å
(d)	3'	5'	3'	34 Å	3.4 Å	10 Å

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116. Whate would be the corrcct base sequence in mRNA for the given DNA strand 5' -AAATGCCTTAAGC- 3'

A. $5' - GCUU \forall GGCAUU - 3'$

B. $5' - UUACGG \forall \top CG - 3'$

C. $3' - UUACGG \forall UUCG - 5'$

D. $3' - \forall UG\mathbb{C}UUAUCG - 5'$

Answer: c

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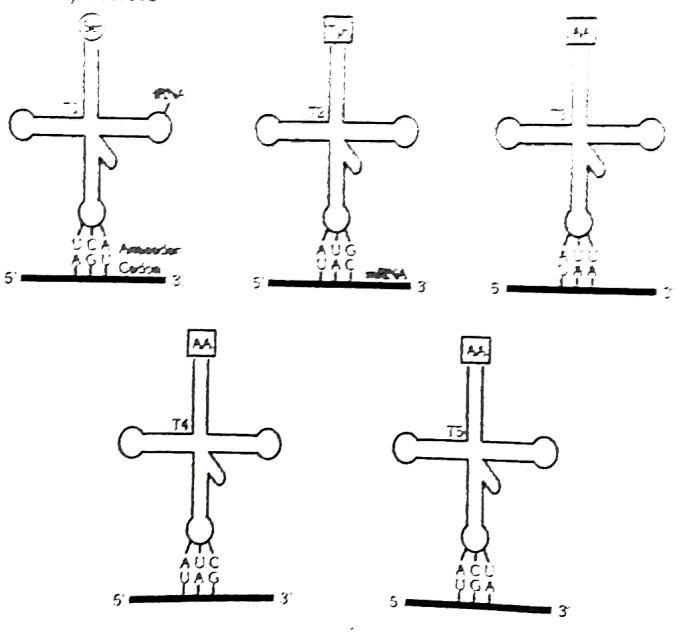
117. Study the following tRNA molecule related with anti codon pairing with respective condons. Which types of tRNA is impossible



A. T 1 and T2

B. T1, T2 and T3

C. T1 and T4

D. T3, T4 and T5

Answer: d

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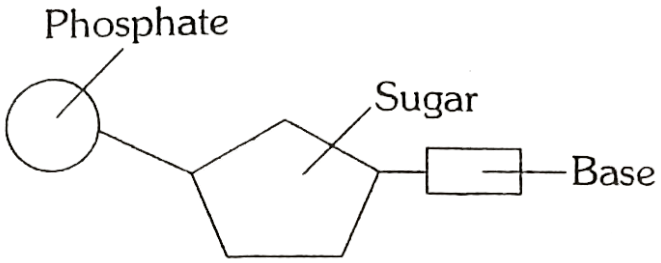
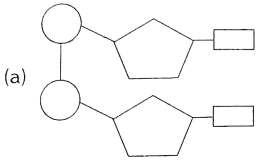
118. The structure of one nucleotide is given below

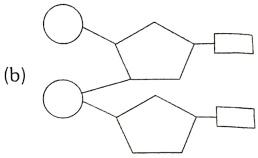
Or Which of the following figure shows two nucleotides correctly joined together



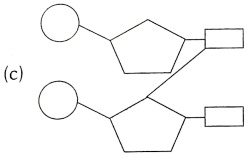
A.



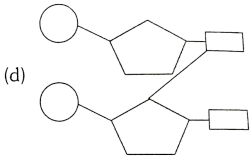
B.



C.



D.



Answer: b

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119. The restriction enyme(s) used in recombinant DNA technology that make staggered cuts in DNA leaving sticky ends is //are

A. EcoRI

B. Hind III

C. BamH I

D. All of these

Answer: d

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120. Genetic information transfer nucleus to cytoplasm by

A. DNA

B. RNA

C. Lysosome

D. All

Answer: b

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121. Supercoiled DNA can be traced in

A. Prokaryotes and eukaryotes

B. Eukaryotes only

C. Prokaryotes only

D. None of these

Answer: a

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122. DNA is double heilx and

A. Right handed complementary and parallel

B. Right handed complementary and antiparallel

C. Without super coils

D. Always circular

Answer: b

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123. Degeneration of DNA after can be studied by comparing

A. A : T ratio

B. G : C ratio

C. sugar : Phosphate

D. None of these

Answer: d

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124. Major difference between DNA and c DNA is

A. Exons absent in DNA

B. Introns absent in c DNA

C. Introns present in c DNA

D. Both (a) and (b)

Answer: b

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125. If a lengh of DNA has 45,000 base pairs , how many complete turns will the DNA molecule take

A. 4500

B. 45000

C. 45

D. 450

Answer: A

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126. Amino acid acceptor end of tRNA lies at

A. 5' end

B. T ψ C loop

C. DHU loop

D. 3' end

Answer: d

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127. Which of the following is not relevant to the structure of double helical DNA

A. The helix makes one complete spiral turn every 3.4Å

B. The diamerter of the helix is 20Å

C. The distance between adjacent nucleotide is 3.4Å

D. Each strand of helix has a backbone made up of alternating ribose sugar and phosphate

Answer: d

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128. Which is the initial step in m-RNA maturation process

A. Polyadenylation

B. 5' capping

C. Splicing

D. Endonucleolytic cleavage

Answer: b

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129. Statement

A.The four nucleotide bases are not necessarily present in DNA in exact equal proportions

B.The total amount of purines are equal to the total amount of pyrimidines

C.DNA ligase enzyme act to hydrolyse or breakdown a polynucleotide chain into its component nucleotides

D. Nuclease enzymes are capable of restoring an intact DNA duplex of the above statements

A. B is correct but A, C and D are wrong

B. A and B are wrong but C and D are correct

C. A and B are C are correct but D is wrong

D. B,C and D are correct but A is wrong

Answer: d

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130. Which one of the following is correct

A. Introns are present in mRNA and exons are present in tRNA

B. Codons are present in mRNA and aniticodons in tRNA

C. Every inteon is a set of three terminator codons

D. Exons are present in eukaryotes while introns are present in prokaryotes

Answer: b

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131. In prokaryotes, the process of replication is cataysed by the following enzymes. Identify which of the enzymes is best coordinate with the role

A. Helicase - Joins the ends of DNA

B. DNApolymerase -I - Synthesises DNA

C. DNA polymerase- II - Erases primer and fills gaps

D. Primase - Synthesises RNA primers

Answer: d

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132. The eukaryotic genome differs from the prokaryotic genome because

A. Repetitive sequences are present in eukaryotes

B. Genes in the former case are organized into operons

C. The DNA is complexed with histones in prokaryotes

D. The DNA is circular and single stranded in prokaryotes

Answer: d

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133. The double helix model pf Watson and Crick is known as

A. C- DNA

B. B-DNA

C. Z-DNA

D. D- DNA

Answer: b

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134. Find out the wrong statement

A. Mobile genetic elements, transposons were visualized by Barbara Mc Clintock

B. Udder cell, a somatic cell is used to produce the cloned sheep by nuclear transplantion method method

C. In pedigree analysis , a person immediately affected by an action is called propositus

D. DNA ligases are used to cleave a DNA molecule

Answer: e

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135. Who among the following did not provido experimental proof for the semiconservative model of DNA replication

A. Meselson & Stahl

B. Cairns

C. Watson &Crick

D. Taylor

Answer: c

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136. mRNA carries the genetic information from DNA to the

Or Which of the following is the sita of translation of the mRNA

A. Chloroplasts

B. Ribosomes

C. Mitochondria

D. Lysosome

Answer: b

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137. During DNA replication in prokaryotes DNA is anchored

A. Chromosome

B. Mesosome

C. Nucleolus

D. Ribosome

Answer: b

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138. DNA is acidic due to

A. sugar

B. Phosphoric acid

C. Purine

D. Pyrimidine

Answer: B

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139. RNA in not found in

A. Chromosome

B. Plasmmalemma

C. Nucleolus

D. Ribosome

Answer: b

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140. The length of DNA molecile greatly exceeds the dimensions of the nucleus in eukaryotic cell. How is this DNA accommodated

A. Deletion of non -essential genes

B. Super- coiling in nucleosomes

C. DNA ase digestion

D. Through elimination of repetitive DNA

Answer: b

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141. The two polynucleotide chains in DNA are

A. Parallel

B. Discontiuous

C. Antiparallel

D. Semiconservative

Answer: c

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142. In DNA of certain organisms, guanine constitutes 20% of the bases. What percentage of the bases would be adenine

A. 0

B. 0.1

C. 0.2

D. 0.3

Answer: d

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143. Bases composition in RNA is

A. A+ T = G + C

B. A + G = T + C

C. A + U = G + C

D. A + G = U + C

Answer: d

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144. Left handed DNA among following is

A. Z DNA

B. A DNA

C. C DNA

D. B DNA

Answer: a

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145. Which of the following be named for DNA produced from RNA ?

A. A-DNA

B. B-DNA

C. C-DNA

D. Z-DNA

Answer: c

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146. hn -RNA undergoes two additional processing. Out which, in one of them an unusual nucleotide (methyl guanosine triphosphate) is added to the 5' hnRNA. This is known as

A. Capping

B. Tailing

C. Splicing

D. Termination

Answer: a

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147. If a segment of an mRNA molecule has the sequence 5' GUACCGAUCG3', which of the following could have been the template DNA molecule

A. 5' GCUAGCCAUG 3'

B. 5'GUACCGAUCG3'

C. 5'CATGGTAGC3'

D. CGATCGGTAC 3'

Answer: c

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148. Ciover leaf model of tRNA was suggested by

A. Went

B. Flemming

C. Holley

D. Messelson

Answer: c

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149. Width of DNA molecule is

A. 15 Å

B. 20 Å

C. 25Å

D. 34 Å

Answer: b

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150. Z- DNA and B- DNA differ in

A. Constitution of bases

B. Conformation

C. Number of helix

D. Base pairing

Answer: b

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151. Match the following

A.	tRNA	1. Linking of aminoacids
B.	mRNA	2. Transfer of genetic information
C.	rRNA	3. Nucleolar organizing region
D.	*Peptidyltranerase*,4.	Transfer of amino acid from cytoplasm of rib

A. A tRNA 1. Linking of amino acids

B. (B) mRNA 2. Transfer of genetic information

C. (C) rRNA 3. Nucleolar organising region

D. (D) Pertidyl transferase 4. Transfer of amino acid form cytoplasm of ribosome

Answer: a

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152. If percentage of cytosine is 18 %, then percentage of thymine will be

A. 0.32

B. 0.64

C. 0.36

D. 0.23

Answer: a

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153. DNA nucleotides are attached by

A. Hydrogen bond

B. Covalent bond

C. Van der waal bond

D. Electrovalent Bond

Answer: a

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154. During Meselson and Stahl' experiments, heavy DNA was distinguished from normal DNA by centrifugation in

A. CsOH gradient

B. ^ $(14)Nh_4Cl$

C. ^ $(15)Nh_4Cl$

D. Cs Cl gradient

Answer: e

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155. Consider the following statements

(A). r-RNA provides the template for synthesis of proteins

(B) tRNA brings amino acids and reads the genetic code

(c) RNA polymerase binds to promother and initiates transcription

(D) A segment of DNA coding for polypeptide is called intron

A. (A) and (c) are correct

B. (A) and (B) are correct

C. (A), (B) and (c) are correct

D. (B) and (c) are correct

Answer: d

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156. Locations or sites in the human DNA where single base DNA differences occueurs are called

A. Repetitive DNA

B. VNTR

C. SNP

D. SSCP

Answer: c

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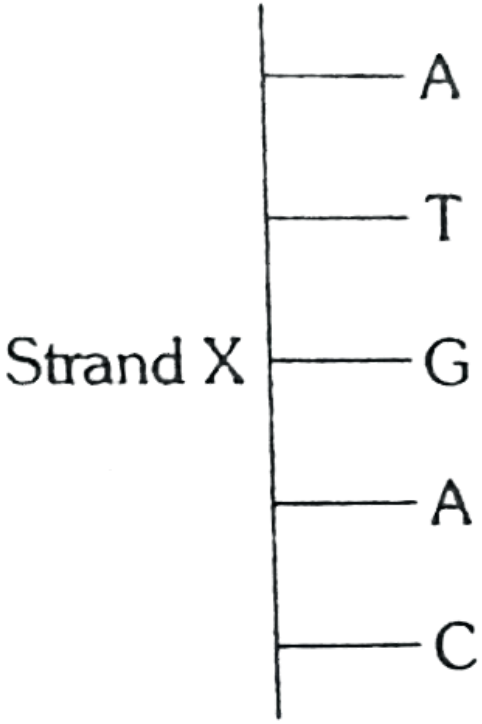
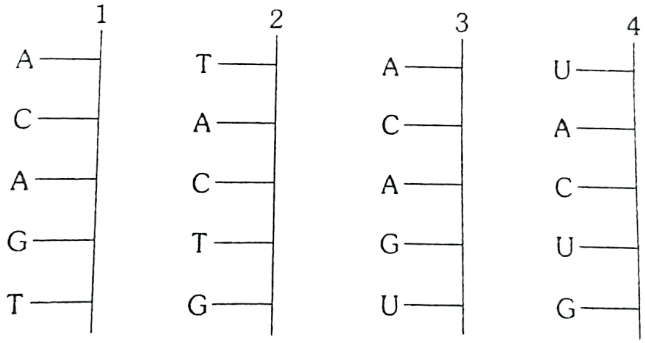
157. Strand X in the figure shows a small partsof a nucleic acid molecule



Which pair of the following strands are complementary to strand X



A. 1 and 3

B. 2 and 4

C. 1 and 2

D. 3 and 4

Answer: b

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158. If the total amount of adenine and thymine in a double- stranded DNA is 45%, the amount of guanine in this DNA will be

A. 22.5

B. 27.5

C. 45

D. 55

Answer: b

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159. The 3' -5' phosphodiester linkages a polynucleotide chain serce to join

A. One DNA strand with the other DNA strand

B. One nucleoside with another nucleoside

C. One nucleotide with another nucleoside

D. One nitrogenous base with pentose sugar

Answer: c

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160. DNA synthesis during replication is

A. Discontionuous

B. Continuous

C. Semi -discontinuous

D. None of these

Answer: d

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161. Purines have nitrogen atoms at _____ positions.

A. 1,2,4 and 6 position

B. 1,3,5 and 7 position

C. 1,3,7 and 9 position

D. 1,2,6 and 8 position

Answer: c

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162. DNA is a polymer of

Or

Which is the ultimate unit of DNA molecule

A. Protein

B. Carbohydrate

C. RNA

D. Nucleotides

Answer: d

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163. DNA gyrase, the enzyme that participates in the process of DNA replication is a type of

A. DNA topoisomerase

B. Reverse transcriptase

C. DNA ligase

D. DNA polymerase

Answer: a

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164. The 5' end of polynucleotide chain is attached to

A. Hydroxyl group

B. Carboxyl group

C. Methyl group

D. Phosphate group

Answer: d

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165. Which one of the following palindromic base sequences in DNA can be easily cut at about the middle by some particular reatriction enzyme

A. (a) 5' ——CACGTA——3'
3' ——CTCAGT——5'

B. (a) 5' ——CACGTA——3'
3' ——CTCAGT——5'

C. (a) 5' ——CACGTA——3'
3' ——CTCAGT——5'

D. (a) 5' ——CACGTA——3'
3' ——CTCAGT——5'

Answer: d

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166. DNA or RNA segment tagged with a radioative molecule is called

A. Plasmid

B. Vector

C. Probe

D. Clone

Answer: c

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167. A.cell is grown in a solution which contain radioactive nucleotides, so that DNA is labelled with radioactivity . It is issolated from the radioactive solution and grown in a normal medium. So that any new DNA strands it makes will not be radioactive. the cell replicates its DNA and divides in the normal medium . the two daughter cell also replicates their DNA and divide, producing a total four cell. if a dotted line represent a radioactive DNA strand and a solid line repreesents a nonradioactive DNA strand, which of the following depicts the DNA of the four cell

A. 

B. 

C. 

D. 

Answer: d

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168. The unequivocal proof of DNA as the genetic material came fron the studies on a

A. Viroid

B. Bacterial virus

C. Bacterium

D. Fungus

Answer: B

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169. Which one of the following also acts as a catalyst in a becterial cell

Or Which one of the following rRNA acts as stuctural RNA as well as

ribozyme in bacterial

A. 23 sr RNA

B. 5 sr RNA

C. sn RNA

D. hnRNA

Answer: a

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170. Automated DNA sequencers, work on the peinciple of the method developed by

A. Erwin Chargaff

B. Maurice Wilkins

C. Frederick Sanger

D. Francis Crick

Answer: c

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171. Which one the following statements are correct ?

(i) RNA polymerase I transcribes rRNAs

(ii) RNA polymerase II transcribes snRNAs

(iii) RNA polymerase III transcribes hnRNA

(iv) RNA polymerase II transcribes hnRNA

A. (i) and (ii) are correct

B. (i) and (iii) are correct

C. (i), (ii) and (iv) are correct

D. (i) and (iv) are correct

Answer: e

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172. In Hershey and Chase experiment, radioactive $\hat{}$ (32)P was used to culture bacteriophages which resulted in rative

A. Viral DNA

B. Bacterial Capsule

C. Viral proteins

D. Plasmambrane of bacteria

Answer: a

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173. DNA -dependent RNA polymerase catalyzes transcription on one strand of the DNA which is called the

A. Antistand

B. Template strand

C. Coding strand

D. Alpha strand

Answer: b

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174. Taylor conducted the experment to prove semiconservative mode chromosome replication on

A. E.coli

B. Vinca rosea

C. Vida faba

D. Drosophila melanogaster

Answer: c

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175. Initiation of DNA strand synthesis is performed by

A. DNA polymerase 1

B. DNA Helicase

C. DNA Primase

D. DNA Topoisomerase

Answer: c

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176. During DNA replication, Okazaki fragment are used to elongate

A. The leading strand towards replication fork`

B. The lagging strand toward replication fork

C. The leading strand away from replication fork

D. The lagging strand away from the replication fork

Answer: d

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177. The final proof for DNA as as the genetic material came from the experiments of

A. Griffith

B. Hershey and Chase

C. Avery, Mcleod and McCarty

D. Hargobing Khorana

Answer: B

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178. The association of histone H1 with a nucleosome indicattes

A. Transcription is occurring

B. DNA replication is occurring

C. The DNA is condensed into a Chromation Fibre

D. The DNA double helix is exposed

Answer: c

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179. Which of the following is true for nucleolus

A. Larger nucleoli are present in dividing cells

B. It is a membrane- bound srtucture

C. It takes part in spindle formation

D. It is sita for active ribosomal RNA synthesis

Answer: d

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180. There are 64 types of genetic code dictionary because

A. There are 64 types of tRNA 's found in cell

B. There are 44 meaningle and 20 codons for amino acids

C. There are 64 amino acids for coding

D. Genetic code is triplet

Answer: D

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181. Barbara McClintock is famous for her work on

A. Wheat

B. Rice

C. Maize

D. Pisum

Answer: c

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182. Which one of the following group of codons is called as degenerate codons

A. UAA,UAG and UGA

B. GUA,GUG,GCA,GCG and GAA

C. UUC,UUG,CCU,CAAand CUG

D. AAC, AAG, GAC and CGG

Answer: d

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183. The codons causing chain termination (stop codons) are

A. TAG,TAA, TGA

B. GAT,AAT,AGT

C. AGT,TAG UGA

D. UAG,UGA,UAA

Answer: d

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184. Which one of the following is the strand codon

A. AUG

B. UGA

C. UAA

D. UAG

Answer: a

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185. Genetic cond consists of

A. 4 codons,each with two nucleotides

B. 16 codons, rach with fuor nucleotides

C. 64 codons , each with two nucleotides

D. 64 codons , each with three nucleotides

Answer: d

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186. The sequence of nitrogen bases in a particular region of the non - coding strand of a DNA molecule was founds to CAT GTT TAT CGC. What

would be the sequence of nitrogen bases in the mRNA that is synthesized by the corresponding region of the coding strand in that DNA

A. GUA CAA AUA GCC

B. GTA CAA ATA GCC

C. CAU GUU UAU CGC

D. CAA GAA TAU GCC

Answer: c

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187. In 125 amino acid sequence if codeon for25 (th) amino acid is mutated to UAA , then

A. A polypeptide of 24 amino acids is formed

B. A polypeptide of 124 amino is formed

C. No polypeptide are formed

D. A polypeptide of 25 amino acids is formed

Answer: a

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188. Genetic code was discovered by :

A. Nirenberg and mathaei

B. Hershey and Chase

C. Morgan and Sturtevant

D. Beadle and Tatum

Answer: a

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189. What is not true for genetic code

A. A codon in mRNA is read in non -contiguous fashion

B. It is nearly universal

C. It is degenerate

D. It is unambiguous

Answer: a

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190. All the terminator codons begin with the nucleotide of

A. Adenine

B. Uracil

C. Guanine

D. Cytosine

Answer: b

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191. Which one of the following pair of codons is correctly mathed with function or the signal for the particular amino acid

A. AUG, ACG -Start//Methionine

B. UUA, UCA - Leucine

C. GUU, GCU - Alanine

D. UAG, UGA - stop

Answer: d

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192. Read the following four statements (A-D) ltbr gt In transcription, adenosine pair uracil

Regulation of lac operon by repressor is refferred to as positive regulation

The human genome has approximately 50,000 genes ltbr gt Haemophilia

is sex - linked recessive disease How many of the above statements are right

A. Two

B. Three

C. Four

D. One

Answer: a

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193. Transcription of genetic code occurs from DNA molecule to a

A. DNA molecule

B. RNA molecule

C. Protein

D. Both DNA and RNA

Answer: b

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194. The arrangement of three bases in the genetic code signifies a specific

A. Protein

B. Amino acid

C. Plasmid

D. Nucleic acid

Answer: b

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195. mRNA direct the building of proteins through a sequience of

A. Exons

B. Introns

C. Codons

D. Anticodons

Answer: c

Watch Video Solution

196. The codon which has dual function is

Or polypeptide synthesis in prokaryotes is initiated by

A. UGA

B. UUU

C. AUG

D. AAA

Answer: c

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197. Wild type E.coil cell are growing in normal medium with glucose. They are transferred to a medium containing only lactose as the sugar . Which one of the following changes take place

A. The lac - Operon is repressed

B. All Operos are induced

C. E. coli cell stop dividing

D. The lac - Operon is induced

Answer: d

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198. Khorana got the Nobel Prize on

A. DNA synthesis

B. Genetic code

C. Protein synthesis

D. Enzyme synthasis

Answer: b

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199. A specific nucleotide sequence to which RNA polymerase attaches to initiate transcription of mRNA from a gene

A. Promoter gene

B. Structural gene

C. Operon

D. Regulator gene

Answer: a

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200. Which of the following codon has no tRNA

A. UAA

B. UAU

C. UGU

D. UGC

Answer: a

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201. Who was awarded Noble prize for the synthesis of an artificial gene

A. Hargovind Khorana

B. M. S. Swaminathan

C. B. P pal

D. P .Maheshwari

Answer: a

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202. Operon model' for gene regulation in bacteria was proposed by

A. Jacob and Monad

B. Barry Commoner

C. Crick

D. Watson and Crick

Answer: a

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203. What is the correct sequence of processes involved in central dogma

A. Replication ,transcription , translation

B. Replication, translation, transcription

C. Translation ,replication, transcription

D. Transcription , replication, translation

Answer: a

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204. Pleitropy is a condition in which a single gene

A. Controls only one phenotype

B. Controls more than one phenotype

C. Does not control any phenotype

D. None of these

Answer: b

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205. In lac operon , the genes a, I, y and z code respectively for

A. Repressor protein, permease,β - galactosidase,

B. Transacetylase, permease, β- galactosidase , repressor proteion

C. Permease, transacetyase , repressor Protein,β - galactosidase

D. Transacetylase, repressor protein, permease, β - galactosidase

Answer: D

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206. In Operon concept, regulator gene functions as

A. Repressor

B. Regulator

C. Inhibitor

D. All of these

Answer: a

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207. Genes that are involved in turning on or off the transcription of set of structural genes are called Or Functioning of structural genes is controlled by

A. Polymorphic genes

B. Operator genes

C. Redundant genes

D. Regulatory genes

Answer: b

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208. The codon AUG has dual function. It is an initiation codon and also codons for

A. Phenylalanine

B. Formaldehyde

C. Serine

D. Methionine

Answer: D

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209. Whobble hypothesis was given by

A. R. W Holley

B. H. G Khorana

C. M.Nirenberg

D. F. H. Crick

Answer: d

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210. Out of 64 codons , 61 codons code for 20 types of amino acid. It is called

A. Wobbling of codon

B. Overlapping of gene

C. Universility of codons

D. Degeneracy of genetic code

Answer: d

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211. The regulatory genes are located

A. Along with the structural genes

B. In between operator and the structural genes

C. In the middle of structural genes

D. At the end of structural genes

Answer: d

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212. Which one of the following codes for the same information as UGC

A. UGU

B. UGA

C. UAG

D. UGG

Answer: a

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213. Identify the correct match between the codons and coding functions

	Column-I	Column-II
A.	AUG	1. Phenylalnine
B.	UAA	2. Methionine
C.	UUU	3. Tryptophan
D.	UGG	4. Termination

A. A-1, B-4, C-2,D-3

B. A-2,B-4, C-1, D-3

C. A-4, B-3,C-4,D-1

D. A-4,B-1,C-3,D-2

Answer: b

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214. Which one the following pairs is correctly matched

A. Ribosomal RNA - carries aminoacids to the site of protein synthesis

B. Transcription - process by which mRNA carrise the information from nucleus to the ribosome

C. Translation -Process by which mRNA carries the information from nucleus to the ribosome

D. Anticondon -site of tRNA molecule that contains complementeary bases to the triple code on the mRNA

Answer: d

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215. naturally occurring coding strand composed of alternating C and U residues would result in the formation of

A. A polypeptide containing containing alternating leu and ser residues

B. A polypeptide containing either leu or ser residues

C. A polypeptide containning only ser residues

D. A polypeptide containing only ser resdues

Answer: a

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216. Which one of the following pairs is correctiy matched with regard to the codon and the amino acid coded by it

A. UUA- Valine

B. AAA-Lysine

C. AUG - Cysteine

D. CCC -Alanine

Answer: b

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217. A sequence of how many nucleotides in messenger RNA makes a for an amino acid

A. One

B. Two

C. Three

D. Four

Answer: c

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218. In E. coli an operator gene combine with

A. Inducer gene to switch on structural gene action

B. Inducer gene to switch off structral gene action

C. Regulator protein (repressor) to switch off structural gene action

D. Regulator protein to swith on gene action

Answer: c

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219. Operon is

A. A set of closely linked genes regulating a metabolic pathways in prokaryotes

B. The sequence of three nitrogen bases determining a single amino acid

C. The sequeace of nitrogen bases in mRNA which codes for s single amino acid

D. A gene responsible for switching on or off other genes

Answer: a

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220. Code of m- RNA and proteins are

A. Coplanar

B. Colinear

C. Nonlinear

D. Irregular

Answer: b

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221. Which of the following cartoon characters does not share its name with that of a gene

A. Tintin

B. Popeye

C. Asterix

D. Obelix

Answer: a

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222. Which of the following is the simplest amino acid

A. Tyrosine

B. Asparagine

C. Glycine

D. Alanine

Answer: c

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223. 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 protsin prevents trenscription

C. Feedback inhibition decause excess of ~beta`- galactosidase can switch off transcripyion

D. Positive and inducible because it can be induced by lactose

Answer: a

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224. Terminator gene

A. Help in terminating flowering

B. Help in terminating seed germination

C. Used in hybridisation

D. None of these

Answer: b

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225. In the lac operon, the structural genes are switched off when

A. Repressor binds to poerator

B. Repressor binds to promotor

C. Repressor binds to regular

D. Repressor binds to inducer

Answer: a

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226. In a given DNA segment ATACC AGG ACC CCA ACA the first base gets mutated. The affect of this on coding by this DNA segment will result in

A. Complete change in the type as well as sequence of amino acids

B. Change in the first amino acid only

C. No change in the sequence

D. One amino acid less in the protein

Answer: b

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227. Which one the following is common is to both prokaryotes and eukaryotes

A. Mitotic apparaus

B. Histones

C. Mitochondria

D. Genetic code

Answer: d

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228. Triplet codon in genetics is

A. Fixed

B. Degennerate

C. Ambiguous

D. Non -wobbly

Answer: b

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229. The lac operon is turned on when allolactose molecules bind to

A. Promoter site

B. Operator site

C. mRNA

D. Repressor protein

Answer: d

Watch Video Solution

230. Jacob and Monad studied lactose metabolism in E. coli and Proposed operon concept , which is appplicable for

A. Prokaryotes

B. Eukaryotes

C. Protozoanes

D. All of these

Answer: a

Watch Video Solution

231. Anticodon is

A. Paired triplet of bases on messenger RNA

B. Unpaired triplet of bases on rRNA

C. Paired triplet of bases on rRNA

D. An unpaired triplet of bases in a exposition of tRNA

Answer: d

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232. A triplet codon means :

A. A sequence of three nitrogen bases on mRNA

B. A sequence of three nitrogen bases in tRNA

C. A sequence of three bases in rRNA

D. The presence of only three bases in mRNA

Answer: A

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233. Two or more codons coding for one amino acid

A. Non -ambiguous

B. Degeneracy of codon

C. Non - overlapping of codon

D. Non- sense codon

Answer: b

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234. 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

Answer: d

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235. In regulation of gene expression in prokaryotes

Lactose acts as the suppreessor for gene expression

Tryptophan acts as the inducer for gene expression

Regulator gene is the one that produces the repressor molecule

A. A alone correct

B. B alone correct

C. C alone correct

D. B and A are correct

Answer: c

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236. Which of the following group of codons code for amino acid serne

A. CUU, CUC, CUA and CUG

B. UAU , UAC , UGU and UGC

C. UCU, UCC, UCA and UCG

D. UGU ,UGC, UGA and UAG

Answer: c

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237. Which conserverd motifs are found in E.coli genes

A. TATA box

B. CAAT box

C. Prinbow box

D. All of these

Answer: c

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238. Differentiation of organs and tissues in a develping organism, is assoiated with

A. Developmental mutations

B. Differential expression of genes

C. Lethal mutations

D. Deletion of genes

Answer: b

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239. Select the incorect statemetn(s)

A. Six codons do not ocde for any amino acid

B. Codon is read in m RNA in a contiguos fashion

C. Three codons function as stop codons

D. The initiator condon AUG codes for methionine

Answer: e

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240. Out of 64 condon, the number of condns with GGG is

A. 1

B. 2

C. 4

D. 6

Answer: a

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241. Select the correct bases of DNA,RNA and amino acid of beta chain resulting in sickle cell anaemia

	DNA	RNA	Amino acid
(a)	CTC/GAG	GUG	Glutamic acid
(b)	CAC/GTG	GUG	Valine
(c)	CAC/GTG	GAG	Valine
(d)	CTC/GAG	GUG	Valine
(e)	CAC/GUG	GAG	Glutamic acid

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242. Which of the following amino acid has hydroxyl methyl gruop as its group

A. Serine

B. Proline

C. Alanie

D. Arginine

Answer: a

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243. The lac operon consists of

A. Four regulartory genes only

B. One regulatory gene and two structural genes

C. Three regulatroy genes and two structural genes

D. Three regualatory genes and three structural genes

Answer: b

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244. Which one is diaminodiacrboxlic amino acid

A. Cystine

B. Lysine

C. Cysteine

D. Aspartic acid

Answer: a

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245. Whihc one of the following statement is not correct

A. Cysteine is coded by UGU and UCC codons

B. Tyrosine is coded by UGU and UAC codons

C. UAA codon condes for lysine

D. UGG codon for trytophan

Answer: c

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246. Select the two statements out of the four (A-D) given below about lac operon

A. Glucose or galactose may bind with the repressor and inactivate it

B. In the absence of lactose the repressor binds with the operator region

C. The z-gene codes of permease

D. This was elucidated by Francios Jacob and Jacque Monod

Answer: d

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247. The one aspect whihc ins not a salient feature of genetic code, is its being

A. Specific Degenerate

B. Ambigous

C. Universal

D.

Answer: c

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248. How many effective codons are there for the synthesis of twenty amino acids

A. 64

B. 32

C. 60

D. 61

Answer: d

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249. Dr. Hargovind Khorana deuced the code for which of the following amino acids

A. Serine and leucine

B. Phenylalanine and methionine

C. Isoleucine and leucine

D. Valine and glutamic acid

Answer: a

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250. Given below is a sample of a portion of DNA strand giving the base sequence on the opposite strands. What is so special shown in it

A. Palindromic sequence of base pairs

B. Replication completed

C. Deletion mutation

D. Start codon at the '5' end

Answer: a

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251. The inducer for switching 'on' the lac operon in bacteria is

A. Presence of lactose

B. Number of bacteria

C. Presence of structural genes in the bacteria

D. Presence of sucrose

Answer: a

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252. Operon contains

A. Operator + Regulator genes

B. Operator + Regulator + Structural genes

C. Operator + Regulator + Repressor genes

D. Operator + Regulator + Structural + Repressor + Promoter genes

Answer: d

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253. Which enzyme/s will be produced in a cell in which there is a nonsese mutation in the lac Y gene

A. Lactose permease and transactylase

B. β galactosidase

C. Lactose permease

D. Tranacetylase

Answer: b

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254. In ans inclucible operon, the genes are

A. Usually not expressed unless a signal turns them "on"

B. Usually expressed unless a signal turns them "off"

C. Never expressed

D. Alaways expressed

Answer: a

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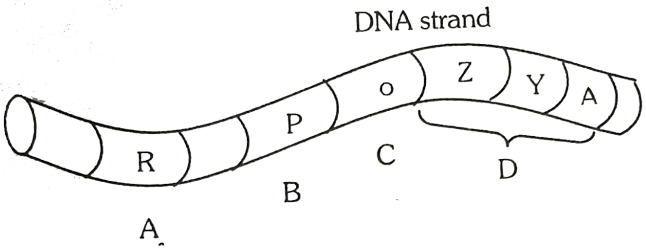
255. The figure of the lac from E. coli is shown below. Each alphabets indicates its components may be used more than once



Which of the following is corect in which all the alphabets are matched with their functions

A. D- the binding site of the repressore protein,C - the binding site for Rna polymers, B- the structural genes, A -the gene that codes for the repressor protein

B. A - the binding site of the repressore protein, D - the binding site for Rna polymers, B - the structural genes, C -the gene that codes

for the repressor protein

C. A - the binding site of the repressore protein, B - the binding site for Rna polymers, C - the structural genes, D -the gene that codes for the repressor protein

D. C - the binding site of the repressore protein, B - the binding site for Rna polymers, D - the structural genes, A -the gene that codes for the repressor protein

Answer: d

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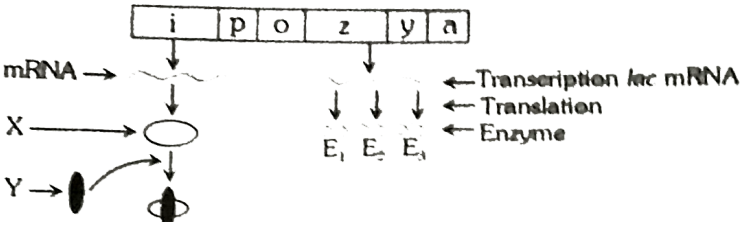
256. In the given figure of the lac operon,an for inducible enzymes, Identify components and enzymes



	X	Y	E_1	E_2	E_3
(a)	Repressor protein	Inducer (lactose)	Permease	Trans acetyl ase	β-Galacto sidase
(b)	Repressor protein	Inducer (lactose)	β-Galactosidase	Trans acetyl ase	Permea se
(c)	Inducer (lactose)	Repressor protein	β-Galactosidase	Perm ease	Transace tylase
(d)	Repressor protein	Inducer (lactose)	β-Galactosidase	Perm ease	Transace tylase

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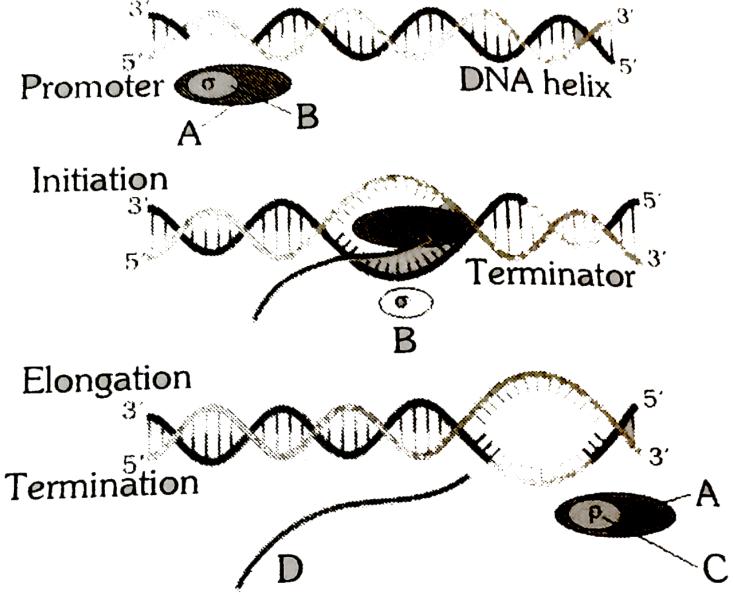
257. The following figure refers to transcirption in prokaryote Identify A,B,C and D



A. RNA polymerse, Sigma factor, Rho factor, RNA

B. DNA polymerse,Initiation factor, Rho factor, RNA

C. RNA polymerse, Rho factor, Sigma factor , RNA

D. DNA polymerse, Sigma factor, Rho factor, RNA

Answer: a

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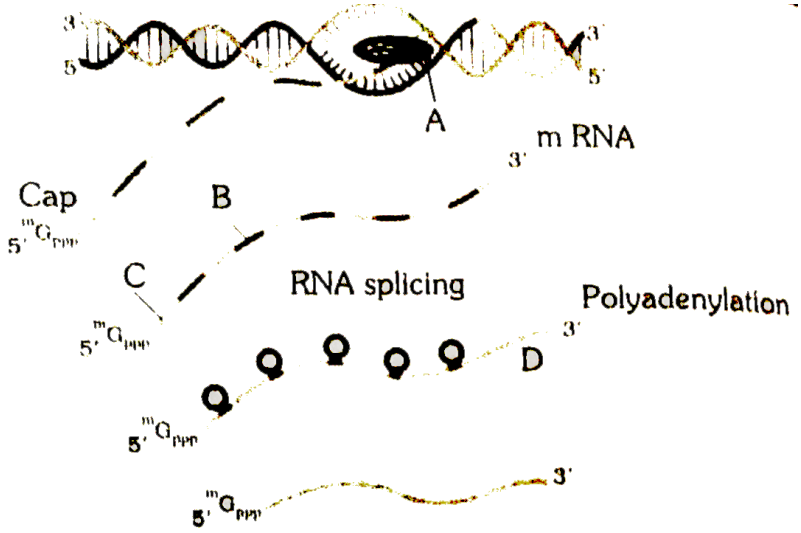
258. The given figure refers to the process of transcription in Eukaryotes, A,B,C and D are respectively



A. A - RNA polymerase II, B - Intron, C- Exon, D - Poly G tail

B. A - RNA polymerase II, B - Intron, C- Exon, D - Poly A tail

C. A - DNA polymerase II, B - Intron, C- Exon, D - Poly A tail

D. A - RNA polymerase II, B - Exon, C- Intron, D - Poly A tail

Answer: B

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259. Which one of the following is wrongly matched

A. Repressor protein- Binds to operator to stop enzyme synthesis

B. Operon - Structural genes, operator and promoter

C. Transcription -Writing information from DNA to t-RNA

D. Translation- Using information in m-RNA to make protein

Answer: C

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260. In lac- opeon if mutation occurs in the middle gene of the 'structural gene' then

A. Permease will not be synthesized

B. βGalactorsidase will by synethsized

C. Transacetylase will not be synthesized Lactose digestion will be rapid

D.

Answer: a

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261. Whihc option is corect for the aminoacid and the total number of their genetic code

A. Arg= 6, His= 6

B. Val = 6, Pro=6

C. Pro =4, Thr= 4

D. Thr =4, Arg =4

Answer: c

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262. Which amino acid determines by four gentic codes

A. Leucine (Leu)

B. Proline (Pro)

C. Seine (Ser)

D. Tyrosine (Tyr)

Answer: b

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263. Which of the following is required as inducer(s) for the expression of Lac operon

A. Glucose or galactose may bind with the repressor and inactivate it

B. Galactose

C. Lactose

D. Lactose and galactose

Answer: c

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264. The amino acid trytophan is the precursor for the synthesis of

A. Melatonin and Serotonin

B. Thyroxine and Triiodothyronine

C. Estorgen and Progestrerone

D. Cortisol and Cortisone

Answer: a

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265. Whihc of the following pair of amino acids are acidic

A. Glycine and glutamate

B. Aspartate and valine

C. Alanin and methionine

D. Glutamate and aspartate

Answer: d

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266. If there are 999 bases in RNA that codes for a protein with 333 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

Answer: c

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267. All of the following are part of an operon expect

A. An operator

B. Structural genes

C. An enthancer

D. A prometer

Answer: c

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268. The process by which DNA of nucleus passes genetci information of m RNA

OR

Which is transfer of DNA to RNA called

A. Tranlocation

B. Transcription

C. Translation

D. Transportation

Answer: b

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269. Tranlation is callled

A. Formation of RNA from DNA

B. Formation of DNA from DNA

C. Formation of DNA from RNA

D. Protein formation

Answer: d

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270. Who discovered "Reverse trancription"

A. Watson and Crick

B. Beadle and Tatum

C. Termin and Balimore

D. Khorana

Answer: c

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271. Repressor protein is produced by :

A. Repressor gene

B. Structural gene

C. Operator gene

D. Regulartory gene

Answer: d

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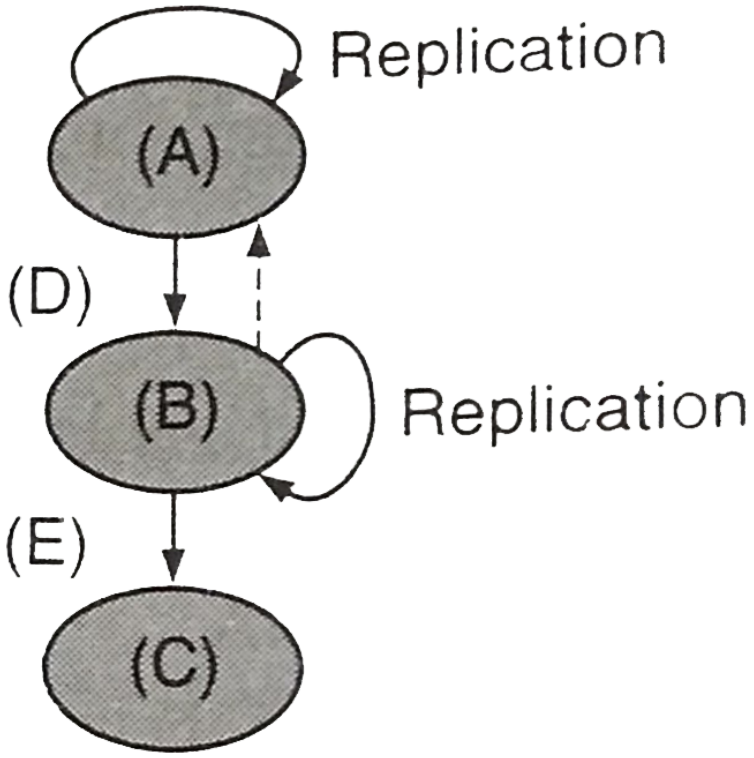
272. The diagram represents the "central dogma " of molecular biology .

Choose the correct combination of labelling :



A. (A) Protein (B) RNA (C) DNA (D) Translation (E) Trancription

B. (A) RNA (B) DNA (C) Protein (D) Trancription (E) Translation

C. (A) Trancription (B) Translation (C) Protein (D) DNA (E) RNA

D. (A) DNA (B) RNA (C) Protein (D) Translation (E) Trancription

Answer: e

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273. Which one of the following sequence represents m-RNA coded from a DNA segment with base pairs as :

GA GC GC ACA

CT CG CG TGT

A. GAGCGCACA

B. CUCCGCUGU

C. CTCGCGTGT

D. CUCCGCUCC

Answer: a

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274. In processing of eukaryotic hn-RNA, during protein synthesis tailing involves _ _ _ _ _ _ _ _ of RNA:

A. Addition of adentylate residuces at 3'end

B. Addition of methyl guanosine triphosphate at '3' end

C. Addition of mehtyl gusanosine triphosphate at '5' end

D. Removel of introns

Answer: a

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275. The sequence of nitrogen bases (triple) on t RNA is

A. Anticodon

B. Terminating codon

C. Degenerate codon

D. Initating codon

Answer: a

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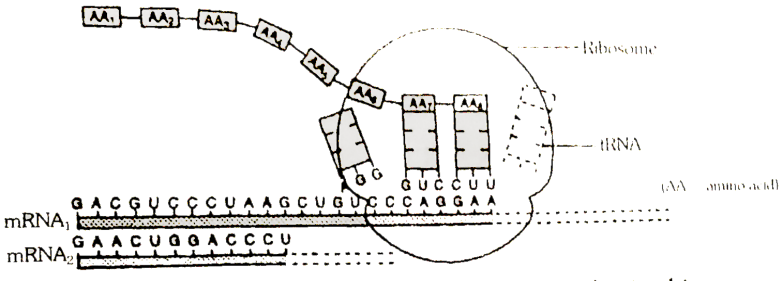
276. Study the following whihc shows the synthesis of part of a protein molecule



The DNA strand by which $Mrna_2$ was synthesised is

A. CUUGACCUGGGA

B. GAACUGGACCCU

C. CTTGACCTGGGA

D. GAACTGGACCCT

Answer: c

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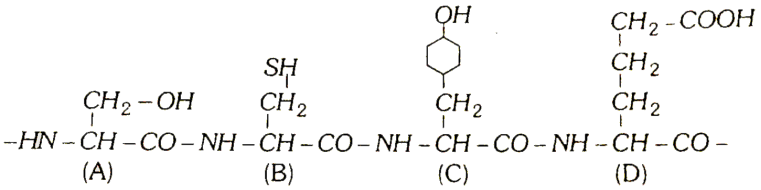
277. The figure shows a hypthetical tetrapeptide portion of a protein with parts labelled A-D. Which one of the following option is correct



A. D is the acidic amion acid - glutamic acid

B. C is an aromatic amino acid - trytophan

C. A is the C- terminal amino acid and D is N terminal amino acid

D. A is the sulphur containing amino acid - methionie

Answer: a

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278. The genes are responsible for growth and differentiation in an organism through regualtion of

A. Translocation

B. Transformation

C. Translation and translation

D. Translation and translation

Answer: d

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279. The transltation unit is

A. TATA box to start point

B. TATA box to stop codon

C. Start box to stop codon

D. 35 sequence to start point

Answer: b

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280. Terinium is also called as

A. Reverse trascription

B. Transcription

C. Translation

D. Replication

Answer: a

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281. RNA interference involves

A. Synthesis of $cRNA$ from RNA using reverse transcriptase

B. Silencing of specific $mRNA$ due to complementry RNA

C. Interference of RNA in synthesis of DNA

D. Synthesis of $mRNA$ from DNA

Answer: b

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282. Which one of the following is not a part of trasncription unit in DNA

A. The inducer

B. A termintor

C. A promoter

D. The sturctural gene

Answer: a

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283. Select the correct statement regarding protein synthesis :

A. When the small subunit of the ribosome encounters an $mRNA$ the process of traslation begins

B. Peptidase catalyes the formation of peptide bond

C. UTR_s are present between the codon binds to the initation codon

D. The comleted polypeptide is stored in the ribosome and relseased when required

Answer: a

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284. One strand of DNA (non template) has base sequence CAG, TCG, GAT. What will be the sequence of bases in m-RNA

A. AGC,CTA, CTA

B. GTA,AGC,CTC

C. CAG,UCG,GAU

D. GAC,TAG, CTA

Answer: c

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285. The Okazaki fragments in DNA chain growth

A. Result in trascription

B. Polymerize in the '3'-'5' direction and forms replication fork

C. Prove semi- conservative nature of DNA replication

D. Polymerize in the '5'-to'3' direction and explain '3'-to -'5' DNA replication.

Answer: D

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286. Moleuclar basis of organ differentiation depends on the modulation is transcription by

A. RNA polymerse

B. Ribosome

C. Transcription factor

D. Anticondon

Answer: c

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287. Lenght of $cRNA$ that carries information for complete polypeptide synthesis is

A. Muton

B. Codon

C. Operon

D. Cistron

Answer: d

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288. Central Dogma' was proposed by

A. Crick

B. Beadle and Tatum

C. Termin and Balimore

D. Klug

Answer: A

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289. Transcription is a process by which

A. Amino acids are joined to from polypeptides

B. An RNA moleucle is synethesized on a RNA temple

C. An RNA moleucle is synethesized within a ribosome

D.

Answer: b

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290. Balbiani rings are sites of

A. DNA replication

B. RNA and protein synthesis

C. Synthesis of lipids

D. Synthesis of polysaccharides

Answer: b

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291. The pressence and position of which one of the followihng defines the template and coding strands in a trasncription unit

A. Repressor

B. Operator

C. Sturctural gene

D. Promoter

Answer: d

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292. Which of the following step of translation does not consume a high energy phosphate bond

A. Translocation

B. Amino acid activation

C. Peptidyl transferase reaction

D. Aminoacyl $tRNA$ binding to A-site

Answer: a

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293. Post transcriptional modification in Eukaryotes is referred as

A. Translation

B. Splicing

C. Sequencing

D. Restriction

Answer: b

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294. The process by which $mRNA$ is made by DNA and protein by $mRNA$ are respectively called as

A. Trancription and translation

B. Translation and translation

C. Synthesis of $mRNA$ and protein

D. Replication of $mRNA$ and protein

Answer: a

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295. In protein synthesis the polymerization of amino acids involves three steps. Which of the following is not involved in protein synthesis

A. Elongation

B. Transcription

C. Temination

D. Initiation

Answer: b

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296. Who proposed the 'Signal hyothesis' meant for the biosynthesis of secretory type of proteins

A. Baltimore

B. Camillio Golgi

C. Blobel and Sabatini

D. Sheeler and Bianchi

Answer: c

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297. Which amino acids are present in histones

A. Lysine and histidine

B. Valine and Hishtidine

C. Arginine and lysine

D. Arginine and histidine

Answer: c

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298. After a mutation at a genetic locus the character of an organism chagnes due to the change in

A. Protein synthesis pattern

B. RNA transcription pattern

C. Protein structure

D. DNA replication

Answer: c

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299. DNA is not directly involved with the synthesis of the following

A. $m-RNA$

B. $r-RNA$

C. $t-RNA$

D. Protein

Answer: d

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300. Choose the wrong statement in the process of protein synthesis

A. After uncoiling of DNA moleucle, one strand acts as a tmeplete for the formation $m - RNA$

B. In the presence of DNA polymerase enzyme the m -RNA is formed based on the triplet codes

C. The m-RNA that leaves nucleus reaches cytoplasm and gets attached with 30S ribosomal subunit

D. The amino acids are transfered from the intracellular amino acid pool to the active ribosomes by the t-RNA

Answer: b

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301. During protein denaturation which of the following is disrupted

A. 2D structure

B. 3D structure

C. Peptide bond

D. AA sequence

Answer: b

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302. Protein synthesis in an animal cell occurs

A. Only on the ribosomes present in cytosol

B. On ribosomes present in cytoplasm as well as in mithochondira

C. Only ribosomes attached to the nuclear envelope and endoplasmic reticulum

D. On ribosomes present in the nucleolus as well as in cytoplasm

Answer: b

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303. Which antiotic inhibits interaction between t RNA and m RNA during bacterial synthesis

A. Streptomycin

B. Tetracyline

C. Erythromycin

D. Neomycin

Answer: d

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304. Which of the following is not correct about translation

A. It starts with AUG

B. Stopped at termination codon

C. Based on operon model

D. Occurs in nucleus

Answer: d

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305. Amino acid sequence, in protein synthesis is decided by the sequence of

A. $cDNA$

B. $r - RNA$

C. $t - RNA$

D. $m - RNA$

Answer: d

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306. Which of the following inhibits protein synthesis by binding to 50 S ribosome

A. Tetracycline

B. Streptomycin

C. Erythromycin

D. Penicillin

Answer: c

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307. Protein of gene which is transcribed but not translated is

A. Exon

B. Intron

C. Cistron

D. Codon

Answer: b

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308. The central dogma of protein synthesis in teminious is

A. $g.\ RNA \rightarrow DNA \rightarrow m - RNA \rightarrow prote \in$

B. $DNA \rightarrow G - RNA \rightarrow m - RNA \rightarrow prote \in$

C. $DNA \rightarrow DNA \rightarrow m - RNA \rightarrow prote \in$

D. $m - RNA \rightarrow g.\ RNA \rightarrow DNA \rightarrow Prote \in$

Answer: a

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309. The enzyme responsible for reverse transcription is

A. RNA polymerase

B. Reverse transcriptase

C. DNA polymerase

D. Transcriptase

Answer: b

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310. Select the incorrect statement

A. Protein are hetropolymers made of amino acids

B. Ribozymes are nucleic acids with catalytic power

C. Nucleic acids serve as genetic material

D. Proteins, nucleic acids and polyasccharides are the only three types

fo macromolecules found in the living system '

Answer: e

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311. The enzyme reverse trasncriptase is

A. RNA dependent RNA polymerase

B. RNA dependent DNA Polymerase

C. DNA dependent DNA Polymerase

D. DNA dependent RNA Polymerase

Answer: b

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312. Initiation of polypeptide chain in eukaryotic protein synthesis in incduced by

A. Methionine (AUG)

B. Leucine

C. Lysine

D. Glycine

Answer: a

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313. The most commonly used enzyme for polymerase chain reaction is

A. DNA polymerase -II

B. Reverse transcriptase

C.

D. Klenow fragement

Answer: d

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314. To which of the following factors, RNA polymerase binds transiently to initiate transcription

A. RHO

B. Beta

C. Gamma

D. Sigma

Answer: d

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315. In bacteria, the formation of peptide bond during translation is effected by

A. Lysoztyme

B. Ribozyme

C. Nucleosome

D. Microsome

Answer: b

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316. What will be the corect gene expression pathway

A. Gene - m RNA -transcripation - translation -protein

B. Trancription -Gene -translation -m RNA -protein

C. Gene -translation -m RNA -transcription- protein

D. Gene -translation -m RNA - transcription -protein

Answer: c

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317. In eukaryotic cell transcription, RNA splicing and RNA capping take place inside the

OR

Messenger RNA is produced in

A. Ribosomes

B. Nucleus

C. Dictyosomes

D. ER

Answer: b

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318. Hargovind Khorana is known for

A. Discovery of DNA structure

B. Synthesis of protein

C. Discovery of DNA ligase enzyme

D. Discovery of $tRNA$

Answer: c

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319. AGGTATCGCAT is a sequence from the coding strand of a gene. What will be the corresponding sequence of the transcribed m RNA.

A. AGGUAUCGCAU

B. UGGTUTCGCAT

C. ACCUAUGCGAU

D. UCCAUAGCGUA

Answer: a

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320. Transfer of DNA bands from an agrose gel to a nitrocellulose or nylon membrane is referred to as

OR

DNA finger printing is done by a technique called

A. Western transfer

B. Northern transfer

C. Eastern transfer

D. Gene transfer

Answer: e

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321. The main aim of the human genome project is.....

A. To introduce new gene into humans

B. To identify and sequence all the genes present in human DNA

C. To identify better techiques for comparing two different human DNA samples

D. To remove disease causing genes from human DNA

Answer: B

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322. Human genome project was discoverd by

A. Francis Collins and Roderick

B. Watson and Crick

C. Beadle and Tatum

D. Paul Berg and Wollman

Answer: a

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323. Polyethylene glycol method is used for

A. Gene transfer without a vector

B. Biodiesel prodcution

C. Seedless fruit production

D. Energy production from sewage

Answer: a

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324. The Human Genome Project (HGP) was initiated in

A. 1988

B. 1990

C. 1992

D. 1994

Answer: B

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325. EcoRI is an example of

A. Exonuclease

B. Endonulease

C. Specific site of restriction endonuclese

D. RNA polymerase

Answer: b

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326. Which of the following is used to select genes of interest from a genomic liberary

A. Restriction enzymes

B. Cloning vectors

C. Gene targets

D. DNA probs

Answer: d

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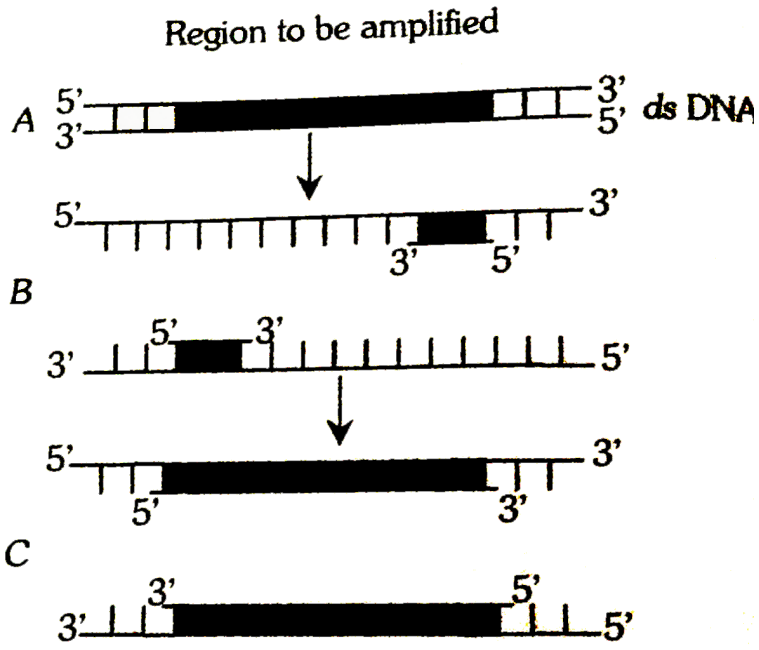
327. The figure below shows three steps (A,B,C) of Polymerase Chain Reaction (PCR). Select the option giving correct identification togather

with what it represents



A. B-Denaturation at a temperature of about $98^\circ C$ separating the two DNA strands

B. A- Denaturation at a temperature of about $50^\circ C$

C. C- Extension in the presence of heat stable DNA polymerase

D. A- Annealing with two sets of primers

Answer: c

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328. What is it that forms the basis of DNA Fingerprinting

A. The relative proportions of purines and pyrimidines in DNA

B. The relative difference in the DNA occurrence in blood, skin and saliva

C. The relative amount of DNA in the ridges and grooves of the fingerprints

D. Satellite DNA occurring as highly repeated short DNA segments

Answer: d

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329. The enzyme (s) responsible for the transcription of snRNA in eukaryotes is/are

A. RNA polymerase-I

B. RNA polymerase-I and II

C. RNA polymerase -II

D. RNA polymerase-III

Answer: d

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330. Biolistics (gene-gun) is suitable for

A. Disarming pathogen vectors

B. Transformation of plant cells

C. Constructing recombinant DNA by joinging with vectors

D. DNA finger printing

Answer: c

Watch Video Solution

331. What is the first step in the Southern Blot technique

A. Denaturation of DNA on the gel for hybridization with specific prode

B. Production of a group of genetically idenatial 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

Answer: d

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332. Cohen and Boyer isolated an antibiotic resistance gene, by cutting out a piece of DNA from a plasmid which was responsible for conferring antibiotic resistance, in the year

A. 1962

B. 1965

C. 1972

D. 1982

Answer: c

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333. The pioneer contributor towards the use of human DNA figerprinting in forensic science in India is

A. Lalji

B. H.Khorana

C. Swaminathan

D. J.C. Bose

Answer: a

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334. Nobel prize to Kornberg and Ochoa was givenfor

A. Artificial synthesis of genes

B. Chemistry of DNA and RNA

C. One gene one enzyme' hypothesis

D. Artifical synthesis of DNA

Answer: d

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335. Which one is a true statement regarding DNA polymerase used in PCR

A. It is used to ligate introduced DNA in recipient cells

B. It serves as a selectable marker

C. It is isolated from a virus

D. It remains active at high temperature

Answer: d

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336. DNA finger printing technique was first developed by

A. Jeffreys, Wilson and Thien

B. Boysen and Jensen

C. Sleiden and Schwann

D. Edward and Steptoe

Answer: a

Watch Video Solution

337. Amplification of gene of interest by using DNA polymerase may go upto

A. 0.1 million times

B. 1.0 million times

C. 1.0 billion times

D. 1.0 trillion times

Answer: c

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338. cDNA probes are copied from the messenger RNA molecules with the help of

A. Restriction enzymes

B. Reverse transcriptase

C. DNA polymerase

D. Adenosine diaminase

Answer: b

Watch Video Solution

339. Gene synthesis is related to

A. V.Baer

B. H.G. Khorana

C. L. Pasteur

D. C.Linnaeus

Answer: b

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340. Which one of the following techniques is employed in human genetic counselling

A. Serological technique

B. Polyploidy

C. Genetic engineering

D. Amniocentesis

Answer: e

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341. Choose the wrong statement

A. VNTR belong to a class of mini-satellite DNA

B. DNA seuencers work on the principle developed by Frederick Sanger

C. HGP was coordinated by US Deparment of energy and the National institude of Health

D. DNA finger printing involves identifying similarities in repetitive DNA

Answer: d

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342. These is a restriction endonuclease called EcoRI. What does "co" part in it stand for

A. Coli

B. Colon

C. Coelom

D. Coenzyme

Answer: a

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343. GAATTC is the recognization site for which of the following restriction endonuclease

A. Hind III

B. EcoR I

C. Bam I

D. Hae III

Answer: b

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344. DNA fingerprintuing method is very useful for

A. DNA tests for identity and relationships

B. Forensic studies

C. Polymorphism

D. All of the above

Answer: D

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345. Which of the following discoveries resulted in a Nobel Prize

A. Genetic engineering

B. X-rays induce sex-linked recessive lethal mutations

C. Cytoplasmic inheritance

D. Recombination of linked genes

Answer: b

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346. The enzyme needed in biological system for joining two molecules is called

A. Lyases

B. Diastases

C. Polymerase

D. Hydrolase

Answer: c

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347. Which one of the following pairs of terms/names mean one and the same thing

A. Gene pool-Genome

B. Codon-gene

C. Cistron-Triplet

D. DNA fingerprinting-DNA profiling

Answer: d

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348. Genetic drift operates only in

A. Island populations

B. Smaller populations

C. Larger populations

D. Mendelian populations

Answer: b

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349. Probes used in DNA finger-printing initially

A. Single stranded RNA

B. Mini satellite

C. 19 base long oligonucleotide

D. All of the above

Answer: b

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350. A distinct mechanism that usually involves a short segment of DNA with remarkable capacity to move from one location in a chromosome to another, this is called

A. DNA replication

B. DNA transposition

C. DNA hybridization

D. DNA recombination

Answer: b

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351. Restriction endonucleases

A. Are used for in utro DNA synthesis

B. Are synthesized by bacteria as part of defense mechanism

C. Are present in mammalian cells for degradation of DNA when the cells dies

D. Are used in genetic engineering

Answer: bd

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352. Polymerase chain reaction is most useful in

A. DNA synthesis

B. DNA amplification

C. Protein synthesis

D. Amino acid synthesis

Answer: b

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353. The frequency of an allele in an isolated population may change due to

A. Gene flow

B. Mutation

C. Genetic drift

D. Natural selection

Answer: c

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354. DNA fingerprinting refers to

A. Techniques used for molecular analysis of different specimens of DNA

B. Techniques used for identification of fingerprints of individuals

C. Molecular analysis of profile of DNA samples

D. Analysis of DNA samples using imprinting devices

Answer: C

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355. In genetic fingerprinting, the 'probe' refers to ....

A. A radioactively labelled single stranded DNA molecule

B. A radioactively labelled single stranded RNA molecule

C. A radioactively labelled single stranded RNA molecule

D. A radioactively labelled double stranded DNA molecule

Answer: a

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356. The best HLA (Human Leucocyte Antigen) match for trans- plants in order to preference is:

A. Parent $>$ sibling $>$ twin $>$ unrelated donor

B. Sibling $>$ twin $>$ parent $>$ unrelated donor

C. Twin $>$ sibling $>$ parent $>$ unrelated donor

D. Twin $>$ unrelated donor $>$ parent $>$ sibling

Answer: c

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357. Production of a human protein in bacteria by genetic engineering is possible because

A. Bacterial cell can carry out the RNA splicing reactions

B. The human chromosome can replicate bacterial cell

C. The mechansim of gene regulation is identical in human and bacteria

D. The genetic code is universal

Answer: d

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358. To confirm ELISA for AIDS we used

A. Western blotting

B. Northern blotting

C. Southern blotting

D. Eastern blotting

Answer: a

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359. The transfer of protein from electophoretic gel to nitrocellulose membrane is known as

A. Transferase

B. Northern blotting

C. Western blotting

D. Southern blotting

Answer: c

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360. Which of the following is not required for any of the techniques of DNA fingerprinting available at present

A. Polymerase chain reaction

B. Zinc finger analysis

C. Restriction enzymes

D. DNA-DNA hybridization

Answer: B

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361. Select the correct combination of statements for DNA fingerprinting

It is an ELISA based technique

It is a PCR based technique

It is used by forensic scientists

It is based on the fingerprint of an individual

It is test for paternity

A. I,ii,iii

B. ii,iii,v

C. I,iv,v

D. I,iii,iv

Answer: b

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362. In a DNA strand the nucleotides are linked together by

A. Glycosidic bonds

B. Phosphodiester bonds

C. Peptide bonds

D. Hydrogen bonds

Answer: b

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363. A nucleoside differs from a nucleotide. It lacks the

A. Base

B. Sugar

C. Phosphate group

D. Hydroxyl group

Answer: c

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364. Both deoxyribose and ribose belong to a class of sugars called

A. Trioses

B. Hexoses

C. Pentoses

D. Polyaccharides

Answer: c

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365. the fact that a purine base always pairs through hydrogen bonds with a pyrimidine base in the DNA double helix leads to

A. The antiparallel nature

B. the semiconductors nature

C. Uniform width throughout DNA

D. uniform length in all DNA

Answer: c

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366. The net electric charge on DNA and histones is

A. Both positive

B. Both negative

C. Negative and positive respectively

D. zero

Answer: c

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367. The promoter site and the terminator site for transciption are located at

A. 3 (downstream) end and 5 (upstream) end, respectively of the transcription unit

B. 5 (upstream) end and 5 (downstream) end, respectively of the transcription unit

C. The 5 upstream end

D. The 3 downstream end

Answer: b

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368. 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

Answer: d

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369. Which of the following is true with respect of AUG

A. it codes for methionine only

B. It is an initiation codon

C. It codes for methionine in both prokaryotes and eukaryotes

D. All of the above

Answer: d

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370. The first genetic material could be

A. Protein

B. Carbohydrates

C. DNA

D. RNA

Answer: d

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371. With regard to mature mRNA in eukaryotes

A. Exons and introns do not appear in the mature RNA

B. exons appear but introns do not appear in the mature RNA

C. Introns appear but exons do not appear in the mature RNA

D. Both exons and introns appear in the mature RNA

Answer: b

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372. The human chromoses scientists had no contribution in the development of the double helix model for the structure of DNA

A. Chromosome 21 and Y

B. Chromosome 1 and X

C. Chromosome 1 and Y

D. Chromosome X and Y

Answer: c

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373. 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

Answer: d

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374. 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 purine 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

Answer: b

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375. Discontinuous synthesis of DNA occurs in one strand, because

A. DNA molecule being synthesised is very ogn

B. DNA dependent DNA polymerase catalyse polymerization only in one direction ($5' \rightarrow 3'$

C. It is more efficient process

D. DNA ligase joins the short stretches of DNA

Answer: b

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376. Which of the following steps in transcription is catalysed by RNA polymerase?

A. Initation

B. Elongation

C. Terminationi

D. All of the above

Answer: b

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377. Control of gene experssion takes place at the level of

A. DNA -replication

B. Transcription

C. Translation

D. None of the above

Answer: b

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378. Regulatory proteins are the accessory proteins that interact with RNA polymerase and affect its role in transcription. Which of the following statements is correct about regulatory protein ?

A. They only increase expression

B. They only decrease expression

C. They interact with RNA polymerase but do not affect the expression

D. They can act both as activators and as repressors

Answer: d

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379. Which was the last human chromosome to be completely sequenced ?

A. Chromose 1

B. Chromosome 11

C. Chromosome 21

D. Chromosome X

Answer: a

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380. Which of the following are the functions of RNA

A. It is carrier of genetic information from DNA to ribosomes synthesizing component of ribosoms

B. It carries amino acids to ribosomes

C. It is constituent component of ribosomes

D. all of the above

Answer: d

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381. While analysing the DNA of an organism a total number of 5386 nucleotides were found out of which the proportion of different bases were: Adenine=29 %, Guanine= 17%, Cytosine=32%, Thymine=17 %, Considering the Chargaff's rule it can be concluded that

A. It is a double stranded circular DNA

B. It is single stranded DNA

C. It is a double stranded linear DNA

D. No conclusion can be drawn

Answer: b

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382. 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

Answer: c

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383. If Meselson and Stahl's experiment is continued for four generations in bacteria, the ratio of $^{15}N/^{15}N:^{15}N/:^{14}/^{14}N$ containing DNA in the fourth generation would be

A. $1:1:10$

B. $1:4:0$

C. $0:1:30:1:7$

D.

Answer: d

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384. If the sequence of nitrogen bases of the coding strand of DNA in a transcription unit is $5'ATGATG-3'$

The sequences of bases in its RNA transcript would be

A. $5'$ -AUGAAUG-3^(')`

B. $5'$ -UACUUAC-3^(')`

C. $5'$ -UACUUAC-3^(')`

D. $5'$ -GUAAGUA-3^(')`

Answer: a

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385. The RNA polymerase holoenzyme transcribes

A. The promoter structrual gene and the terminator region

B. The promoter and the termination region

C. The structrual gene and the terminatioin region

D. The structural gene only

Answer: c

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386. If the base sequence of a codon in mRNA is $5' - AUG - 3'$, the sequence of tRNA pairing with it must be

A. $5'$ -UAC-3^(')`

B. $5'$ -CAU-3^(')`

C. $5'$ -AUG-3^(')`

D. $5'$ -GUA-3^(')`

Answer: b

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387. The amino acids attaches to the tRNA at its

A. 5 -end

B. 3 end

C. anti codon site

D. DHU loop

Answer: b

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388. To initaite 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

Answer: a

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389. In E.coli, the lac operono gets switched on when

A. Lactose is present and it bins to the repressor

B. Represor binds to opeator

C. RNA polymerase binds to the operator

D. lactose is present and it binds to RNA polymerase

Answer: a

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390. Match the following

A.	VNTR	P.	Largest gene
B.	Introns and Exons	Q.	DNA fingerprinting
C.	Dystrophin	R.	Bulk DNA
D.	Satellite DNA	S.	Splicing

A. A-R, B-S, C-P, D-Q

B. A-Q, B-S, C-P, D-R

C. A-Q, B-P, C-S, D-R

D. A-S, B=P, C-Q, D-R

Answer: b

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391. Gel electrophoresis is used for

A. Construction of recombinant DNA by joining with cloning vectors

B. Isolation of DNA molecule

C. Cutting of DNA into fragments

D. Separation of DNA fragments accordint to their size

Answer: d

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392. Palaeontologista uarthed a human skull during excavation. A small fragment of the scalp tissue was still attached to it. Only little DNA could be extracted from it. It the genes of the ancient man need to be analysed, the best way of sufficient amount DNA from this extract is

A. Hybridising the DNA with a DNA probe

B. Subjecting the DNA to polymerase chain reaction

C. Subjecting the DNA to gel electrophoresis

D. Treating the DNA with restriction endonucleases

Answer: b

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393. A sequential expression of a set of human genes occurs when a steroid molecule binds to the

A. Transfer RNA

B. Messenger RNA

C. DNA sequence

D. Ribosome

Answer: c

Watch Video Solution

394. In the nomenclauter of enzyme restriction endonuclease the Roman numerical indicates

A. Number of times it is used

B. The order of discovery from source

C. Number of cuts on DNA

D. Number of recombination formed

Answer: b

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395. Bacteria were grown in a medium containing heavy isotope of nitrogen $\left(N^{15}\right)$ for many generations and all their DNA contained many heavy nitrogen only. A bacterium of this type was transferred to nomal medium and allowed to duplicate . After two divisions of heavy DNA is likely to be that

A. Only one daughter cell will have heavy DNA

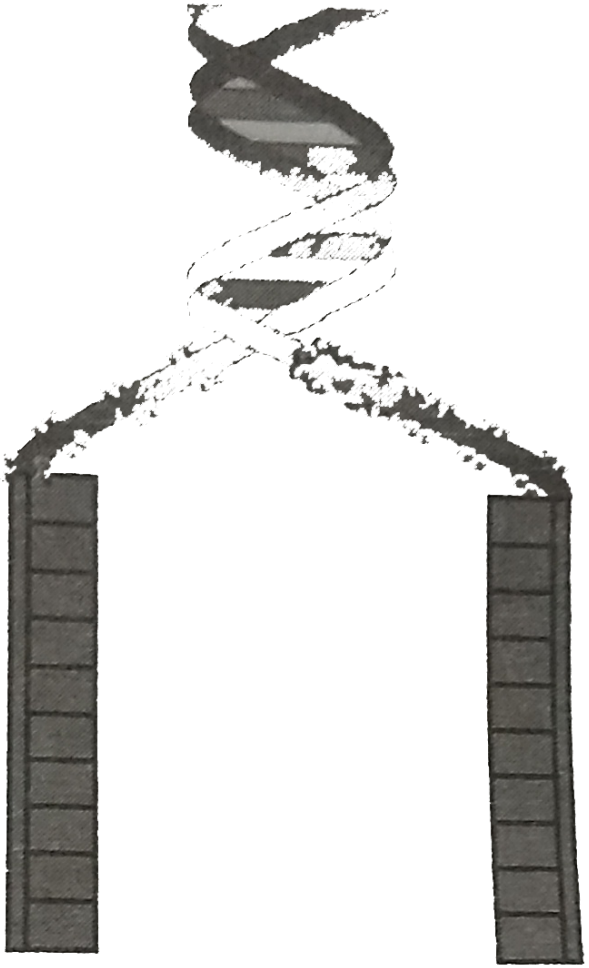
B. Two daughter cells have normal DNA and other two have both normal and heavy DNA

C. All daughter cells have heavy DNA

D. Half daughter cells have DNA and other hald have normal DNA

Answer: b

396. What is "A" and "B" in given diagram



A. A=RNA Primer

B=RNA Helicase

B. A=RNA Primer

B=DNA Helicase

C. A=single strand Binding Protein

B=DNA Helicase

D. A=lagging strand

B=Movement of Helicase

Answer: b

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397. Which RNA is having least age

A. m RNA

B. t RNA

C. r RNA

D. None of the above

Answer: a

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398. Which of the following RNAs should be most abundant in animal cell

A. m RNA

B. t RNA

C. r RNA

D. catalytic RNA

Answer: c

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399. Which of the character is not applicable to t-RNA

A. It is the smallest of the RNAs

B. It acts as an adapter for amino acids

C. It has a clover leaf like structure

D. It is the largest of the RNAs

Answer: d

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400. Satellite DNA is important because it

A. Shows high degree of polymorphism in population and also the same degree of polymorphism in an individual, which is heritable from parents to children

B. Does not code for proteins and is same in all members of the population

C. Codes for enzymes needed for DNA replication

D. Codes for protein needed in cell cycle

Answer: a

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401. Which one of the following pairs is correctly matched

A. Ribosomal RNA Carries amino acids to the side of protein sysnthesis

B. Transcription Process by which protein is sysnthesized

C. Translation Process by which m-RNA carries the information from the nucleus to ribosomes

D. Anticodon Site of a t-RNA molecules hydrogen bond that binds to the m-RNA molecule

Answer: d

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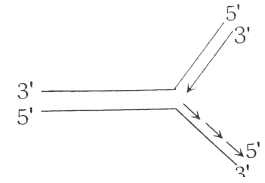
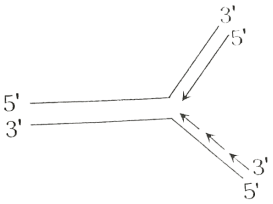
402. Which one of the following correctly represents the manner of replication of DNA

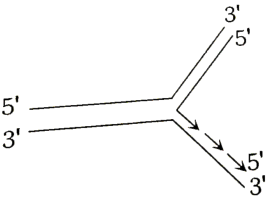
A.



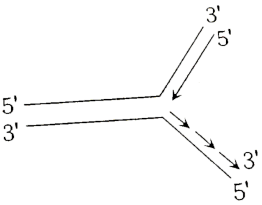
B.



C.



D.



Answer: d

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403. Centre of DNA Fingerprinting and Diagnostics (CDED) is located at

A. Delhi

B. Chennai

C. Kolkata

D. hyderabad

Answer: d

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404. Which of the following is a sulphur containing amino acid

A. Alanine

B. Glyciene

C. Methionie

D. Valine

Answer: c

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405. The source of Taq polymerase used in PCR is a :

A. Thermophilic fungus

B. Mesophilic fungus

C. Thermophilic bacterium

D. halophilic bacterium

Answer: C

Watch Video Solution

406. The deflection of pitch angle between two successive steps (rungs) of DNA is

A. 72°

B. 54°

C. 36°

D. 18°

Answer: c

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407. Match the following in column I with column II and choose the correct combination

Column I		Column II	
A.	Termination	1.	Aminoacyl tRNA synthetase
B.	Translation	2.	Okazaki fragments
C.	Transcription	3.	GTP dependent release factor
D.	DNA replication	4.	RNA polymerase

A. A-2, B-3 , C-1 , D-4

B. A-1, B-4, C-2, D-3

C. A-3,B-1, C-4, D-2

D. A-4, B-2,C-1, D-3

Answer: c

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408. Triplet for inhibitting process of translation is

A. UAG

B. UAA

C. UAC

D. UGG

Answer: B

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409. E.Coli cells with a mutated z gene of the lac operon cannot grow in medium containing only lactose as the source energy because

A. In the presence of glucose, E.coli cells do not utilize lactose

B. They cannot transport lactose from the medium into the cell

C. The lac operon is constitutively active in these cells

D. They cannot sysnthesize functional betagalactosidase

Answer: d

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410. During transcription holoenzyme RNA polymerase binds to a DNA sequence and the DNA assumes a saddle like structure at that point. What is that sequence called ?

A. CAAT box

B. CGTT box

C. AAAT box

D. TATA box

Answer: d

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411. The codon for the initiation of protein synthesis in eukaryotes is :

A. AUG

B. GUG

C. UGA

D. UAG

Answer: b

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412. Enzyme 'Taq polymerase' used in PCR, has been isolated from bacterium

A. Thermous aquaticus

B. Thibacillus ferroxidans

C. Bacillus subtilis

D. Pseudomonas putida

Answer: d

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413. Who among the following was awarded the Nobal Prize for the development of PCR technique ?

A. Karry Mullis

B. Cohen

C. Boyer

D. Sanger

Answer: a

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414. Match the enzymes in column I and column II with its function in coulmn II and select the correct option

Column I		Column II	
A.	Termination	1.	Aminoacyl tRNA synthetase
B.	Translation	2.	Okazaki fragments
C.	Transcription	3.	GTP dependent release factor
D.	DNA replication	4.	RNA polymerase

A. A-2,B-1,C-4,D-3

B. A-3,B-4,C-1,D-2

C. A-2,B-4,C-1,D-3

D. A-1,B-2,C-4D-3

Answer: b

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415. Satellite DNA is useful tool in

A. Genetic engineering

B. Organ transplantation

C. Sex determination

D. Forensic science

Answer: d

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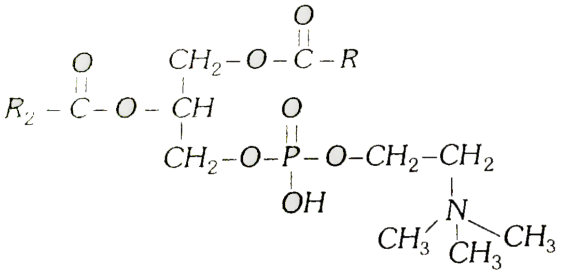
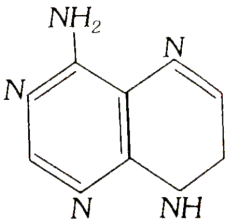
416. Which one of the following structural formulae of two organic compounds is correctly identified along with its related function



A



B

A. A:Lecithin -a component of cell membrane

B. B: Adenine-a nucleotide that makes up nucleic acids

C. A: Triglyceride -major source of energy

D. B: Uracil -a componenet of DNA

Answer: a

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417. Which one of the following does not follow the central dogma of molecular biology

A. HIV

B. Pea

C. Mucor

D. Chlamydomonas

Answer: a

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418. Genes of interest can be selected form a genomic library by using

A. Cloning vectors

B. DNA probes

C. Gene targets

D. Restriction enzymes

Answer: b

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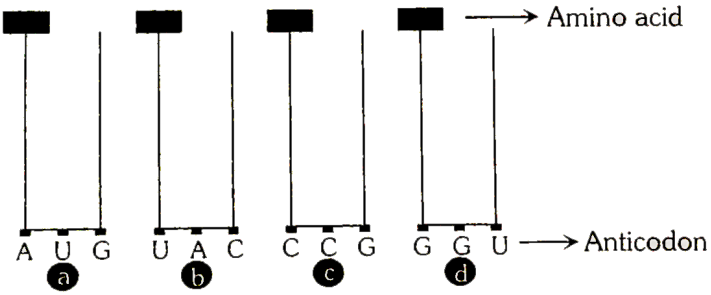
419. Find the sequence of binding of the following amino acyltRNA complexes during translation to a mRNA transcribed by a DNA segment having the base seqeucne 3' TACATGGGTCCG5'



Choose the right answer in which the correct order of alphabets is showing

A. b,a,c,d

B. a,b,d,c

C. b,a,c,d

D. a,b,c,d

Answer: a

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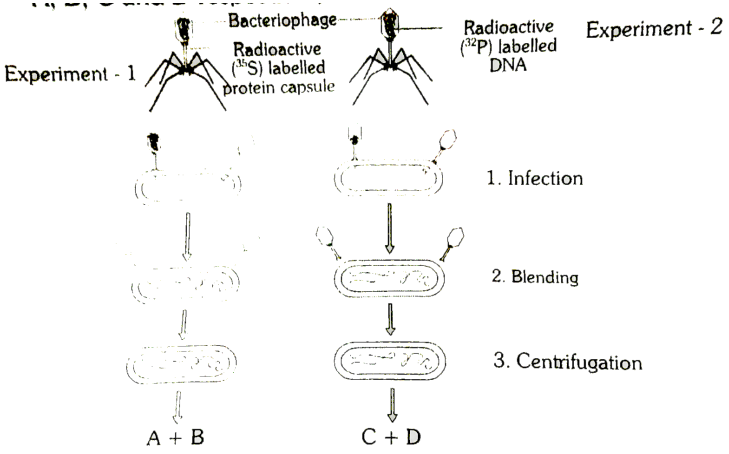
420. Alfred Hershey and Martha Chase made a big contribution in providing DNA role as the hereditary molecules. The experiment is shown in the figure. A and C are the presence or absence of radioactivity detected in cells . B and D are the presence or absence of radioactivity detected in supernatants cells. Identify A,B,C and D respectively



A. A-No Radioactivity $\left(.^{35}S\right)$ detected in cells, B-Radioactivity $\left(.^{35}S\right)$ detected in supernatant , C-No $\left(.^{32}S\right)$ detected in cells, D - Radioactivity $\left(.^{32}P\right)$ detected in supernatant

B. A-No Radioactivity $\left(.^{35}S\right)$ detected in cells , B -Radioactivity $\left(.^{35}S\right)$ detected in supernatant , C -Radioactivity $\left(.^{32}P\right)$ detected in cells, D-No Radioactivity $\left(.^{32}P\right)$ detected in supernatant

C. A-Radioactivity $\left(.^{35}S\right)$ detected in cells , B-No Radioactivity $\left(.^{32}S\right)$ detected in supernatant , C-Radioactivity $\left(.^{32}P\right)$ detected in cells, D-No Radioactivity $\left(.^{32}P\right)$ detected in supernatant

D. A-Radioactivity $\left(.^{35}S\right)$ detected in cells , B-No Radioactivity $\left(.^{32}P\right)$ detected in supernatant , C-Radioactivity $\left(.^{35}S\right)$ detected in cells, D-No Radioactivity $\left(.^{32}P\right)$ detected in supernatant

Answer: b

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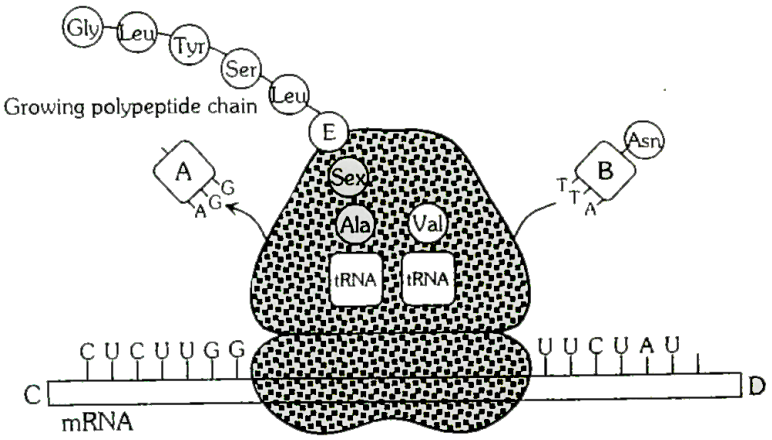
421.



The above figure refers to translation. In which of the four options A, B, C, D

and E are correctly identified

	A	B	C	D	E
(a)	Uncharged tRNA	Charged/ Aminoacylated tRNA	5' end	3' end	Lysine
(b)	Uncharged tRNA	Charged/ Aminoacylated tRNA	3' end	5' end	Glycine
(c)	Uncharged tRNA	Charged/ Aminoacylated tRNA	5' end	3' end	Glycine
(d)	Charged/ Aminoacylated tRNA	Uncharged tRNA	5' end	3' end	Glycine

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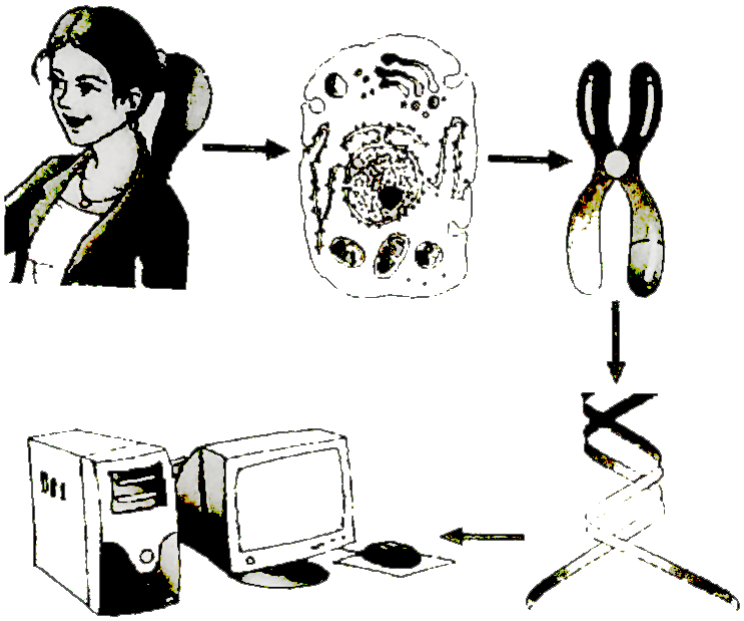
422. The given diagram illustrates



A. Chromosome walking

B. Homoral Analysis

C. Human Genome Project

D. Method of DNA fingerprinting

Answer: c

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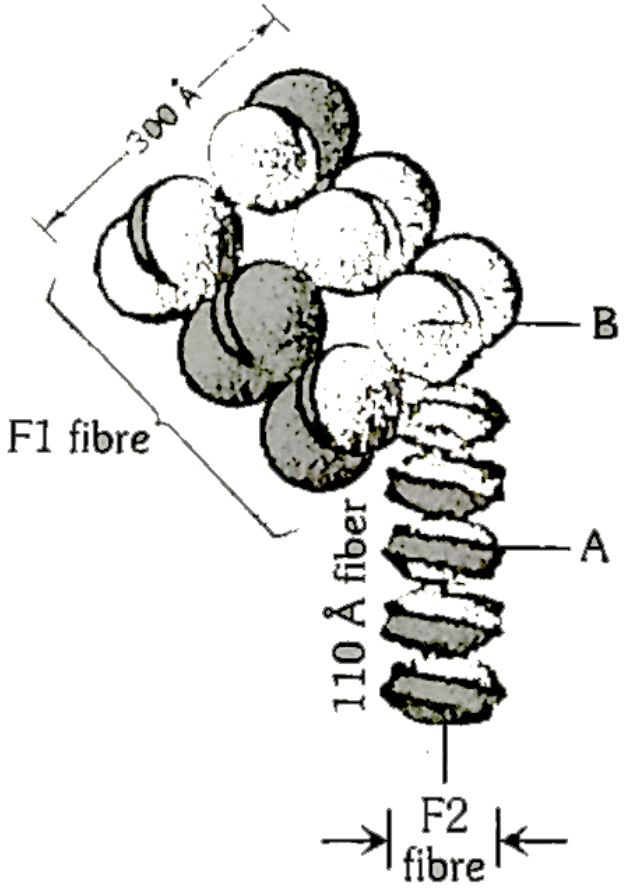
423. The adjacent figure represents the structure of basic 30 min fibre of chormosome of eukaryotes . Choose the correct option in which F1, F2 A and B are correctly identified



	F1	F2	A	B
(a)	Nucleosome	Solenoid	DNA	Histone octamer
(b)	Solenoid	Nucleosome	DNA	Nonhistone octamer
(c)	Solenoid	Nucleosome	RNA	Histone octamer
(d)	Solenoid	Nucleosome	DNA	Histone octamer

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424. Commonly used vectors for human genome sequencing are

A. Expression Vectors

B. T/A Cloning Vectors

C. T-DNA

D. BAC and YAC

Answer: d

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425. Match the items in Column I with those in Column II and choose the correct answer

Column-I		Column-II	
P.	PCR	i.	Insertion of a vector into target cell
Q.	Transformation	ii.	Post-transcriptional modification of protein
R.	DNA ligation	iii.	Replication of DNA
S.	Ribozyme action	iv.	Creation of recombinant DNA

A. P-ii, Q-iv, R-I,S-ii

B. P-iii, Q-I, R-iv, S-ii

C. P-iii, Q-I, R-ii, S-iv

D. P-iv, Q-iii, R-I, S-ii

Answer: b

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426. What is the criterion for DNA fragment movement on agarose gel during gel electrophoesis

A. the larger the fragment size, the farther it moves

B. The smaller the fragment size, the farther it moves

C. Positive charged fragment moves to farther end

D. Negatively charged fragments do not move

Answer: b

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427. Select the correct match

A. Alec Jeffreys - Streptococcus penumoniae

B. Alec Hershey and Martha chase - TMV

C. Mathew Meselson and F. Stahl - Pisum sativum

D. Francois Jacob and Jacques Monad- Lac operon

Answer: d

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428. Select the correct match

A. Ribozyme - Nucleic acid

B. $F_2 \times$ Recessive parent- Dihybrid Cross

C. T.H. Morgan- Transduction

D. G. Mendel - Tranformation

Answer: a

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429. Assertion : The uptake of DNA during transformation is an acitve, energy requiring process.

Reason: Transformation occurs in only those bacteria, which posses the enzymatic machinery involved in the active uptake and recombination.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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430. Assertion : A monocistronic mRNA can produce several types of polypepitude chains .

Reason : The terminator codon is present on the mRNA.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the assertion is false but reason is true.

Answer: e

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431. Assertion : Regulator and operator genes are not associated with contitutive genes.

Reason : Constitutive genes need not be repressed.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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432. Assertion : Initiation step of protein synthesis in prokaryotes and eukaryotes has several differneces.

Reason : They both form mRNA -tRNA complex with smaller subunit of ribosome.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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433. Assertion : Agrobacterium tumefaciens is popular in genetic engineering because this bacterium is associated with the roots of all cereal and pulse crops.

Reason : A gene incorporated in the bacterial chromosomal genome gets automatically transferred to the crop with which the bacterium is associated .

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: d

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434. Assertion : mRNA attaches to ribosome through its 3 end.

Reason The mRNA has F- capsular nucleoitide and bases of lagging sequence.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: d

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435. Assertion : Histones are basic proteins of major importance in packaging of eukaryotic DNA, DNA and histones comprise chromatin

forming the bulk of eukaryotic chromosome .

Reason : Histones are five major types H_1, H_2A, H_2B, H_{30} and H_4

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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436. Assertion : The tRNA molecules posses anticondons.

Reason It needs the message in form of codon.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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437. Assertion : in recombinant DNA technology, human genes are often transferred into bacteria (prokaryotes) or yeast (eukaryote).

Reason: Both bacteria and yeast multiply very fast to form huge population which express the desired gene.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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438. Assertion : Gel electrophoresis and elution are two important processes.

Reason : After staining with ethidium bromide it has to be exposed to U.V light.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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439. Assertion : The nitrogen bases of the two chains of DNA are held together by hydrogen bonds.

Reason : Both chains of DNA are anitparallel.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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440. Assertion : One of the two strands of DNA is called sense strand and other is called antisense strand.

Reason : Sense strand of DNA forms complementary RNA.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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441. Assertion : Plasmids are extrachromosomal DNA.

Plasmids are found in bacteria and are useful in genetic engineering

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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442. Assertion : DNA polymerase -I acts as proofreader.

Reason : DNA polymerase-I removes mismatched nucleotides.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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443. Assertion :rRNA is a constituent of ribosomes.

Reason : rRNA is a constituent of ribosomes.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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444. Assertion : An mRNA has both initiation codon and termination codon.

Reason : It specifies only a single polypeptide or number of them.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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445. Assertion : DNA fingerprinting involves identifying difference is some specific regions in DNA sequence.

Reason: In repetitive DNA sequences , a small stretch of DNA is repeated many times.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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446. Assertion : Ribosomes protect rRNA form ribonuclease.

Reason rRNA is located in the gap between the two ribosomal subunits.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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447. Assertion : In prokaryotes, there are three initiation factors used for protein synthesis.

Reason : All the initiation factors have their own function.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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448. Asseration : The bacteria and other prokaryotes show high adaptability to the changing environent.

Reason : Member of kingdom Monera are efficient in regulating gene expression.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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449. Asseration : Replication and trasncription occur in the nucleus but transfering occurs in the cytoplasm.

Reason : m RNA is transfered form the nucleus into the cytoplasm where riberosomes and amino acids are available for protein synthesis.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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450. Asseration : DNA found in mitochondria and chloroplast are called prochromosome.

Reason : They are similar to prokaryotic chromosome.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: a

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451. Asseration : Killer strain of Paramecium aurelia can kill sensitive strain.

Reason : It sensitive strain is provided kappa particle, it becomes killer.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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452. Asseration : Scaffold proteins are nonhistone chromosomal proteins

Reason : They are rich in lysine and argine.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: c

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453. Asseration: RNA produced during transcription in eukaryotic cells cannot be straight away used in photosynethsis.

Resson : RNA splicing phenomena helps in the removel of exons.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: c

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454. Assertion : Recognition site should be perfectly single and reponsive to commonly used restriction enzymes.

Reason: In pNR 322 Alien DNA is ligated generally in the area of Bam-HI site of tetracycline resistance gene.

A. If both the assertion and the reason are true and the reason is a correct explanation of the assertion.

B. If both the assertion and reason are true but the reason is not a correct explanation of the assetion

C. If the assertion is true but the reason is false

D. If the both the assertion and reason are false

Answer: b

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455. During lytic life cell of a virulent DNA phage which of the following does not occur

A. Host cell produce large number virions

B. The host cell lyse

C. New Phages are released

D. The phage DNA integrated into the host chromosomes

Answer: d

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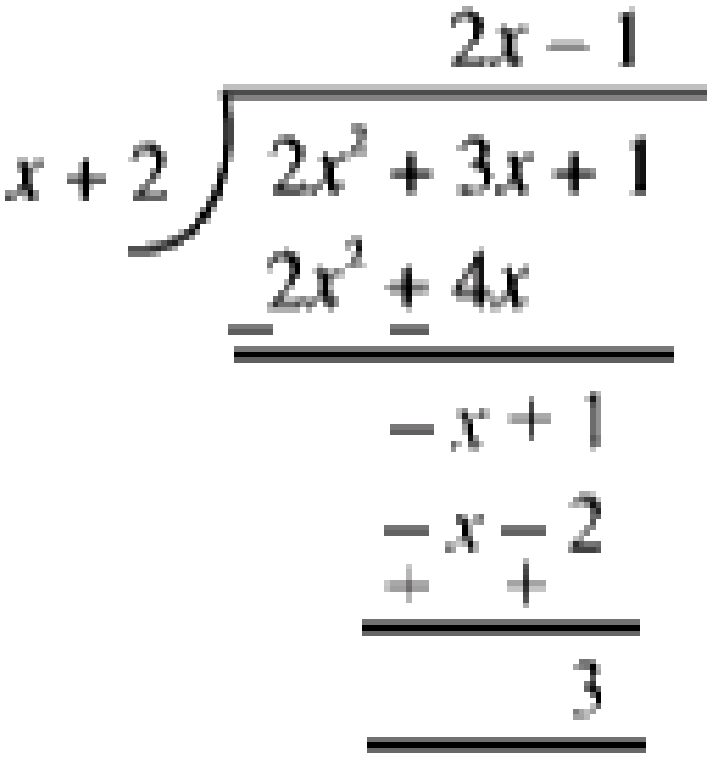
456. Match the names of the scientists with their contributions and choose the correct answer



A. A-2, B-1, C-4, D-3, E-5

B. A-3, B-4, C-1, D-2, E-5

C. A-1, B-3, C-2, D-4, E-5

D. A-4, B-3, C-2, D-1, E-5

Answer: b

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457. Amino acid binding site of t-RNA is :

A. 5 end

B. Anticodon loop

C. DHU loop

D. $\mathbb{C}A3'$ end

Answer: d

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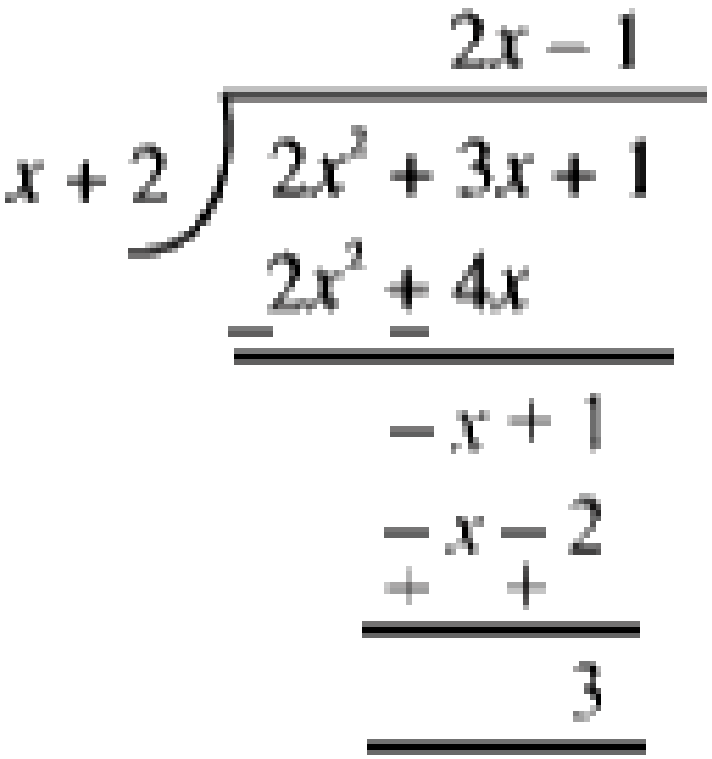
458. Match list I and II and select the answer using the code given below the lists.



A. 1,2 and 3 are correct

B. 1 and 2 are correct, 3 is false

C. 1 is correct, 2 and 3 are false

D. 1 and 3 are correct, 2 is false

Answer: a

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459. Genetic code of nucleic acid depends upon

A. Number of nucleic acid

B. Position of nucliec acid

C. Sequence of nucleic acid

D. all the above

Answer: c

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460. What is the best way to test the relatedness of two species.

A. RNA and proteins

B. DNA & proteins

C. Antibodies and transposons

D. None of these

Answer: b

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461. Which of the following types of RNA molecule can be described as soluble, relatively small nd having a folded compact shape

A. rRNA

B. tRNA

C. mRNA

D. Nucleolar RNA

Answer: b

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462. If the sequences of bases in DNA is ATTCGATG, then the sequence of bases in its transcript will be

A. GUAGCUUA

B. UAAGCUAC

C. CAUCGAAU

D. AUUCGAUG

Answer: b

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463. DNA has four different types of nucleotides. These are

A. Adenine, Uracil, Thymine, Alanine

B. Adeline, Thymine, Guanine, Cytosine,

C. Adeline, Thymine, Uracil, Cytosine

D.

Answer: b

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464. A unit composed of a sugar and base linked by β glycosidic bond is known as a

A. Nucleotide

B. Nucleoside

C. Glycoside

D. Purine

Answer: b

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465. 3-D structure of RNA is called

A. Clover leaf model

B. Hair pin model

C. Helical model

D. Plate model

Answer: a

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466. In agarose gel electrophoresis, DNA molecules are separated on the basic of their

A. Charge

B. Concentration

C. pH

D. Size

Answer: d

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467. In which of the following combinations, the compouns in ascending order based on their molecular weights are arranged.

A. DNA, RNA, AMP, ADP, ATP

B. DNA, RNA, ATP, ADP, AMP

C. AMP, ATP, RNA, DNA

D. AMP, ATP, ADP, DNA, RNA

Answer: c

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468. The term, genetic RNA refers to

A. Genetic material of RNA virusses

B. RNA that carries genetic message

C. RNA that helps gene regulation in lac-operon

D. RNA present in mitochondria

Answer: a

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469. Which is correct match the phenomenon and its explanation

A. Central dogma $\rightarrow$ RNA $\rightarrow$ DNA $\rightarrow$ Protein $\rightarrow$ RNA

B. Reverse transcription - PCR - Many copies of DNA sequence

C. Transcription- Formation of RNA and proteins

D. RNA silencing- Use of dsRNA

Answer: b

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