BIOLOGY

BOOKS - SARAS PUBLICATION

MOLECULAR GENETICS

Example

1. Why tRNA is called an adapter mol-ecule?

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2. What is nuclein?

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3. Define phosphodiester bond.

Watch Video Solution

4. Define nucleoid.

Watch Video Solution

5. Define Genophore.

Watch Video Solution

6. What is replication of DNA?

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7. What is 'ori site'?

Watch Video Solution

8. What are Okazaki fragments?

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9. Define replication fork.

Watch Video Solution

10. Define transcripition.

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11. What are exons?

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12. Write about introns?

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13. What is a genetic code?

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14. The "non-sense" codons refer to.

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15. Define base substitutions.

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16. What is meant by ribozyme?

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17. What is rule of base pairing and complementary state?

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18. Define pharmacogenomics and give its importance.

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19. What is a solenoid?

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20. What is HGT?

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21. What are nitrogenous bases?

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22. Give any three difference between DNA and RNA.

Watch Video Solution

23. Differentiate - Leading strand and lagging strand.

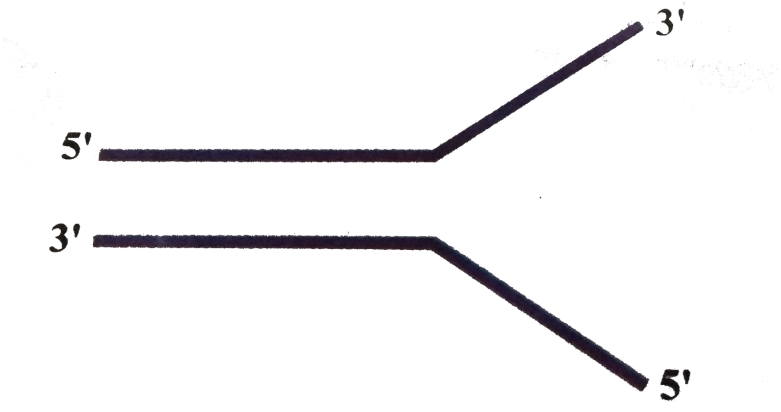
Watch Video Solution

24. Differentiate - Template strand and coding strand.

25. Distinguish between structural gene, regulatory gene and operator gene.

26. a) Identify the figure given below

b) Redraw the structure as a replicating fork and label the parts



(c) Write the source of energy for this replication and name the enzyme involved in this process.

(d) Mention the differences in the synthesis of

protein, based on the polarity of the two template strands.

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27. How is DNA different from RNA based on nitrogenous bases?

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28. How do adenine and guanine differ from cytosine and uracil?

Watch Video Solution

29. Differentiate nucleoside and nucleotide.

Watch Video Solution

30. Differentiate euchromation and heterochromatin.

Watch Video Solution

31. What is meant by capping and tailing?

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32. Give reasons: Genetic code is 'universal'.

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33. Name the parts marked 'A' and 'B' in the given transcription unit.

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34. Mention any two ways in which single nucleotide polymorphism (SNP_S) identified in human genome can bring revolutionary change in biological and medical science.

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35. State any three goals of the human genome project.

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36. Why is the Human Genome Project called a mega project?

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37. Why tRNA is called an adapter molecule?

Watch Video Solution

38. Name the anticodon required to recognize the following codons: AAU, CGA, UAU, and GCA.

Watch Video Solution

39. If the coding sequence in a transcription unit is written as follows:

5'TGCATGCATGCATGCATGCATGCATGC 3'

Write down the sequence of mRNA.

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40. What are the three structural differences between RNA and DNA?

Watch Video Solution

41. Differentiate - Leading strand and lagging strand.

Watch Video Solution

42. Differentiate - Template strand and coding strand.

Watch Video Solution

43. In E.coli, there enzymes galactosidase, permease and transacetylase are produced in the presence of lactose. Explain why the enzymes are not synthesized in the absence of lactose.

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44. Distinguish between structural gene, regulatory gene and operator gene.

Watch Video Solution

45. A low level of expression of lac operon occurs at all the time in E.coli Justify the statement .

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46. How is the two stage process of protein synthesis advantageous?

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47. Why did Hershey and Chase use radioactively labelled phosphorous and sulphur only? Would they have got the same result if they use radiolabelled carobon and nitrogen?

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48. From their examination of the structure of DNA, What did Watson and Crick infer about the probable mechanism of DNA replication, coding capability and mutation?

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49. Explain the formation of a nucleosome.

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50. It is established that RNA is the first genetic material. Justify by giving reasons.

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51. Identify the figures given below and comment

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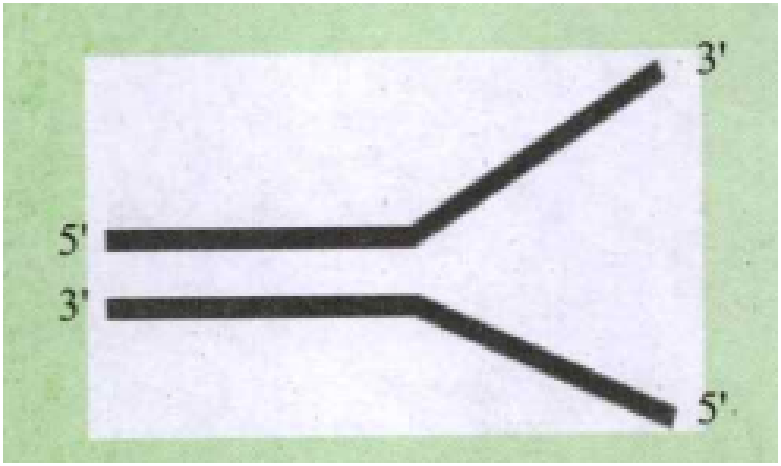
52. Redraw the structure as a replicating fork and label the parts.



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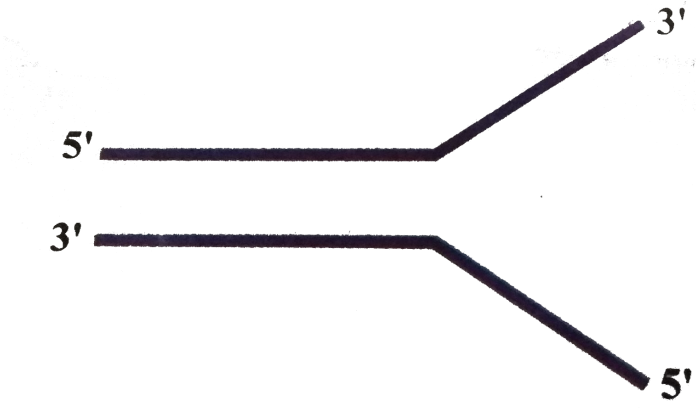
53. a) Identify the figure given below

b) Redraw the structure as a replicating fork

and label the parts



(c) Write the source of energy for this replication and name the enzyme involved in this process.

(d) Mention the differences in the synthesis of protein, based on the polarity of the two template strands.

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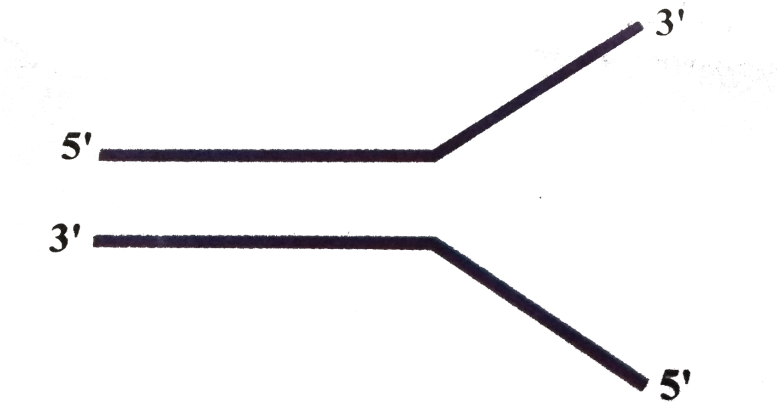
54. a) Identify the figure given below

b) Redraw the structure as a replicating fork and label the parts



(c) Write the source of energy for this replication and name the enzyme involved in this process.

(d) Mention the differences in the synthesis of

protein, based on the polarity of the two template strands.

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55. What does the hypothesis proposed by Beadle and Tatum state?

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56. What does one gene-one polypep-tide hypothesis state?

Watch Video Solution

57. What is nuclein?

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58. Griffith's experiments proved that _____

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59. Name the biologists who repeated Griffith's experiment.

Watch Video Solution

60. Describe the experiment of Avery, MacLeod and McCarty to determine the biochemical nature of genetic material.

Watch Video Solution

61. What did Avery, MacLeod and McCarty observe through their experiment?

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62. Define gene based on the classical concept of gene.

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63. What chemicals did Hershey-Chase use to track viral protein and nucleic acids sperately durig their experiment?

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64. Write the composition of nucleotides.

Watch Video Solution

65. How do adenine and guanine differ from cytosine and uracil?

Watch Video Solution

66. How is DNA different from RNA based on nitrogenous bases?

Watch Video Solution

67. Why are DNA and RNA referred to as nucleic acid?

Watch Video Solution

68. How is the nucleic acid retained within the nuclear membrane?

Watch Video Solution

69. Define phosphodiester bond.

Watch Video Solution

70. Differentiate nucleoside and nucleotide.

Watch Video Solution

71. Give the observations of Erwin Chargaff.

Watch Video Solution

72. Differentiate nucleoside and nucleotide.

Watch Video Solution

73. What makes RNA virus to evolve at a faster rate?

Watch Video Solution

74. Give the formula to calculate the total of a double helical DNA.

Watch Video Solution

75. If the length of E.coli DNA is 1.36 mm, find the number of base pairs.

Watch Video Solution

76. Define nucleoid.

Watch Video Solution

77. Define Genophore.

Watch Video Solution

78. What are NHC?

Watch Video Solution

79. Differentiate euchromation and heterochromatin.

Watch Video Solution

80. Define replication of DNA.

Watch Video Solution

81. List the three hypothesis of DNA replication.

Watch Video Solution

82. How does a DNA replicate as per conservative replication hypothesis?

Watch Video Solution

83. What does dispersive replicating hypothesis state?

Watch Video Solution

84. Technique used for distinguishing heavy DNA from light DNA in Meselson and Stahl's experiment is

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85. Name the various types of prokaryotic DNA polymerase. State their role in replication process.

Watch Video Solution

86. What is the function of DNA polymerases in eukaryotes?

Watch Video Solution

87. What happens if errors occur during replication?

Watch Video Solution

88. What is 'ori site'?

Watch Video Solution

89. What happens when DNA helicase acts on the DNA strands?

Watch Video Solution

90. Okazaki fragments are

Watch Video Solution

91. Define replication fork.

Watch Video Solution

92. Which of the following represents the "central dogma" in molecular biology?

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93. Transcription

Watch Video Solution

94. Explain the flow of genetic information in retroviruses like HIV?

Watch Video Solution

95. How are the promoter regions called in prokaryotes and eukaryotes.

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96. What are the major types of RNAs? Give their roles in the synthesis of proteins.

Watch Video Solution

97. Name the enzyme that catalyses transcription of all types of RNA in prokaryotes.

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98. What are exons?

Watch Video Solution

99. Write about introns?

Watch Video Solution

100. Differentiate capping and tailing.

Watch Video Solution

101. What is a genetic code?

Watch Video Solution

102. Why is genetic code said to be nonoverlapping?

Watch Video Solution

103. What are non-sense codons?

Watch Video Solution

104. Define base substitutions.

Watch Video Solution

105. What is meant by ribozyme?

Watch Video Solution

106. What is rule of base pairing and complementary state?

Watch Video Solution

107. What does information storage as a property of genetic material convey?

Watch Video Solution

108. Define the process by which charged tRNA is formed.

Watch Video Solution

109. Write briefly about S-D sequence.

Watch Video Solution

110. At what levels are gene expression regulated in E.coli?

Watch Video Solution

111. What were the major approaches involved in Human Genome Project?

Watch Video Solution

112. What is meant by Expressed Sequence Tags?

Watch Video Solution

113. Commonly used vectors for human genome sequencing are

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114. Write about the method that replaced the traditional sequencing method.

Watch Video Solution

115. Define pharmacogenomics and give its importance.

Watch Video Solution

116. What are short repetitive sequences of DNAs called as? What are its benefits?

Watch Video Solution

117. Which codon has dual functions? State its functions.

Watch Video Solution

118. What are microsatellites?

Watch Video Solution

119. Write about purines.

Watch Video Solution

120. Write about pyrimidines.

Watch Video Solution

121. What are the enzymes involved in DNA replication in eukaryotes?

Watch Video Solution

122. List the functions of DNA polymerase in eukaryotes.

Watch Video Solution

123. What is a solenoid?

Watch Video Solution

124. What is HGT?

Watch Video Solution

125. State the properties of gene according to classical concept.

Watch Video Solution

126. What are nitorgenous bases? What are the types?

Watch Video Solution

127. Explain the replication hypothesis proposed by Watson and Crick.

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128. List the enzymes required for the metabolism of lactose in E.coli. Give their functions.

Watch Video Solution

129. What is a transcription unit in DNA? What are its components? State their functions?

Watch Video Solution

130. Explain the structural genes of prokaryotes with a diagram.

Watch Video Solution

131. Explain the type of stuctural gene in eukaryotes with a diagram?

Watch Video Solution

132. A single DNA-dependent RNA polymerase catalyzes transcription of all types of RNA in prokaryotes. Does RNA polymerase really catalyze all the steps of transcription. Explain.

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133. Explain the role of RNA polymerase in bacterial transcription of a gene?

Watch Video Solution

134. What are the enzymes involved in eukaryotic transcription? State their functions.

Watch Video Solution

135. What are the proteinaceous initiation factors in E. coil? Write their functions.

Watch Video Solution

136. Explain the third phase of translation.

Watch Video Solution

137. Write short notes on the sturcture of operon.

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138. How is mapping of human chromosomes useful to humans?

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139. Write about the possible demerits of mapping human chromosomes.

Watch Video Solution

140. Explain the properties of genetic material.

Watch Video Solution

141. Humans have 23 pairs of chromosomes. But, human genome project has stated that genes are distributed over .

Watch Video Solution

142. Give an example of a human disease, caused due to base substitution. Explain.

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143. Give reasons why both the strands of DNA are not copied during transcription. Explain it.

Watch Video Solution

144. Write about the hypothesis that overcomes the effects of code degeneracy?

Watch Video Solution

145. Name the cellular factory responsible for protein synthesis. How does it exists in inactive state? What are the types?

Watch Video Solution

146. Explain the type of ribosome in prokaryotes.

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147. Describe the experiment of Avery, MacLeod and McCarty to determine the biochemical nature of genetic material.

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148. Name the experiment that provided convincing evidence that DNA is the genetic material. Explain it.

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149. Explain the experiment that supports semiconservative mode of DNA replication.

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150. Explain the process of replication with a diagram.

Watch Video Solution

151. List the salient features of genetic code.

Watch Video Solution

152. Which isthe adapter molecule? Explain its structure.

Watch Video Solution

153. Describe the first step of translation in E.coli

Watch Video Solution

154. Explain the elongation phase of translation.

Watch Video Solution

155. Explain the metabolism of lactose in E.coli.

Watch Video Solution

156. Write the salient features of Human Genome Project.

Watch Video Solution

157. Write short notes on DNA fingerprinting.

Watch Video Solution

158. How are satellite DNA classified? Give the applications of DNA finger printing.

Watch Video Solution

159. What is transformation? Name the bacteriologist who described it.

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160. Who performed transformation experiment?

Watch Video Solution

161. Whose experiment wasrepeated in transformation experiment?

Watch Video Solution

162. Explain the tranformation experiment pf Avery et.al.,

Watch Video Solution

163. What is the significance of transformation experiment?

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164. What is the sugar present in DNA and RNA?

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165. What is the difference between the sugars of DNA and RNA?

Watch Video Solution

166. What are the bases which are unique for DNA and for RNA?

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167. DNA is an acid which component gives the acidic property to DNA?

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168. How nitrogenous base is linked to sugar and mention the product form?

Watch Video Solution

169. How phosphate group is linked to the same sugar and mention the product formed?

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170. Name the bond which binds the nucleotides in a DNA

Watch Video Solution

171. What is the highlight of the double helix model of DNA? Explain.

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172. In Tobacco Mosaic Virus (TMV) RNA is the genetic material, but the experiment of Hershey and Chase indicates that DNA is the genetic material. However DNA is more stable and is preferred for storage of genetic information-Justify.

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173. What do you mean by charging of tRNA? Name the enzyme involved in this process.

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174. Expand and define ORF .

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175. What is UTR?

Watch Video Solution

176. How many sites are present on the ribosome?

Watch Video Solution

177. Bt crops - What are they?

Watch Video Solution

178. Draw a diagram of ribosome to show the sites.

Watch Video Solution

179. Where are leaf bladders found and what are their functions?

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180. What is HGP?

Watch Video Solution

181. How many genes and bases are present in human genome. \

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182. Which chromosome has the highest density of genes and which chromosome has the lowest density of genes?

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183. List the gene counts of chromosome number 1 and Y chromosome.

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184. Which is the largest human gene and how many bases are in it?

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185. How much nucleotide bases are different between you and me.

Watch Video Solution

186. How can we create a 'perfect human race' in future.

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Exercise

1. Which of the following statements is not true about DNA replication in eukaryotes?

A. Replication begins at a single origin of replaction

B. Replication is bidirectional from theorigins

C. Replication occurs at about 1 millionbase pairs per minute

D. There are numerous different bacterial chromosomes, with replication occurring

in each at the same time

Answer:

Watch Video Solution

2. Hershey and Chase experiment with bacteriophage showed that

A. Protein gets into the bacterial cells

B. DNA is the genetic material

C. DNA contains redioactive sulphur

D. Viruses undergo transformation

Answer:

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3. The total number of nitrogenous bases in human genome is estimated to be about

A. 3.5 million

B. 35000

C. 35 million

D. 3.1 billion

Answer:

Watch Video Solution

4. Choose the correct statement.

A. DNA does not depend on RNA for synthesis of protein

B. RNA is more chemcially stable than DNA

C. Proteins do not have the ability to direct duplications

D. DNA mutates at a faster rate than RNA

Answer:

Watch Video Solution

5. Which enzyme is not used in prokarytic replication?

A. DNA polymerse I

B. DNA polymerase II

C. DNA polymerase III

D. DNA dependent RNA polymerase

Answer:

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6. If the coding sequence in a transcription unit is written as follows:

5'TGCATGCATGCATGCATGCATGCATGC 3'

Write down the sequence of mRNA.

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Watch Video Solution

17. State their functions?

Watch Video Solution

18. A single DNA-dependent RNA polymerase catalyzes transcription of all types of RNA in prokaryotes. Does RNA polymerase really catalyze all the steps of transcription. Explain.

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19. From their examination of the structure of DNA, What did Watson and Crick infer about the probable mechanism of DNA replication, coding capability and mutation?

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20. During the eukaryotic transcription, the genetic information encoded in the DNA will be transferred to m-RNA. The m-RNA thus formed will be processed and utilized to

synthesize a protein.

a. Both the DNA strands are not copied during transcription. Why?

b. What do template and coding DNA strands represent?

c. What will be the result, if RNA is not spliced before translation?

Watch Video Solution

21. Hershey and Chase experiment with bacteriophage showed that

A. Protein gets into bacterial cells

B. DNA is the genetic material

C. DNA contains radiocative sulphur

D. Viruses undergo transformation

Answer:

Watch Video Solution

22. DNA and RNA are similar with respect to

A. Thymine as a nitrogen base

B. A single-stranded helix shape

C. Nucleotide containing sugar, nitrogen bases and phosphates

D. The same sequence of nucleotides for the amino acid phenyl alanine

Answer:

Watch Video Solution

23. A mRNA molecule is produced by

A. Replication

B. Transcription

C. Duplication

D. Translation

Answer:

24. The total number of nitrogenous bases in human genome is estimated to be about

A. 3.5 million

B. 35000

C. 35 million

D. 3.1 billion

Answer:

Watch Video Solution

25. E. coli cell grown on ^{15}N medium are transferred to ^{14}N medium and allowed to grow for two generations. DNA extracted from

these cells is ultracentrifuged in a cesium chloride ensity gradient. What density distribution of DNA would you expect in this experiment?

A. One high and one low density band.

B. One intermediate density band.

C. One high and one intermediate density band.

D. One low and one intermediate density band.

Answer:

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26. What is the basis for the difference in the synthesis of the leading and lagging strand of DNA molecules?

A. Origin of replication occurs only at the 5' end of the molecules?

B. DNA ligase works only in the $3' \rightarrow 5'$ direction.

C. DNA polymerase cacn jooin new nucleotides only to the 3' end of the growing strand .

D. Helicases and single-strand binding proteins that work at the 5' end.

Answer:

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27. Which of the following is the correct sequence of event with reference to the central dogma?

A. Transcription, Translation, Replication

B. Transcriptyion, Replication, Translation

C. Duplication, Translation, Transcription

D. Replication, Tanscription, Translation

Answer:

Watch Video Solution

28. Which of the following statements about DNA replication is not correct?

A. Unwinding of DNA molecule occures as hydrogen bonds break.

B. Replicationi occurs as each base is paired with another exactly like it/

C. Process is known as semi-conservative replication because one old strand is conserved in the new molecule.

D. Complementry base are held together with hydrogen bonds.

Answer:

29. Which of the following statements is not true about DNA replication in eukaryotes?

A. Replication begins at a single origin of replication.

B. Replication is bidirectional from the origins

C. Replication occurs at about I million base pairs per minute.

D. There are numerous different bacterial chromosomes. With replication occurring in each at the same time.

Answer:

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30. The first codon to be deciphered was _____ which codes for _____.

A. AAA, proline

B. GGG, alanine

C. UUU, phenylalanine

D. TTT. Arginine

Answer:

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31. Meselson and Stahl's experiment proved .....

A. Transduction

B. Transformation

C. DNA is the genetic material

D. Semi-conservative nature of DNA replication.

Answer:

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32. Ribosomes are composed of two subunits, the smaller subunit of a ribosome has a binding site for _____ and the larger subunit has two binding sites for two _____.

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33. An operon is a:

A. Protein that supppresses gene expression

B. Protein that accelerates gene expression

C. Cluster of structural genes with related function

D. Gene that switches other genes ono or off.

Answer:

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34. When lactose is present in the culture medium:

A. Transcription of lac y, lac z, lac a genes occurs.

B. Repressor is unable to bind to the operator.

C. Repressor is able to bind to the operator.

D. Both (a) and (b) are correct.

Answer:

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35. Who coined the term 'gene'?

A. Gregor Mendel

B. W. Johannsen

C. Watson

D. Hershey

Answer:

Watch Video Solution

36. Radiocative isotopes used in Hershey and Chase experiment.

A. Sodium and phosphorus

B. Sulphur and phosphorus

C. Carbon and phosphorus

D. Uranium and phosphorus

Answer:

Watch Video Solution

37. Who proposed one gene-one enzyme hypothesis?

A. Beadle and Tatum

B. Watson and Crick

C. Hershey and Chase

D. MacLeod and McCarty

Answer:

Watch Video Solution

38. Name the person who isolated nucleic acid from cell nuclei

A. Altmann

B. Griffith

C. Friedrich Mischer

D. oswald Avery

Answer:

 Watch Video Solution

39. Who introduced the classical concept of gene?

A. Mendel

B. Avery

C. Hofmeister

D. Sutton

Answer:

 Watch Video Solution

40. Nucleotide is composed of

A. a nitrogen base, pentose sugar and phosphate

B. nitrogen base and hexose sugar

C. nitrogen base, hexose sugar and phosporic acid

D. nitrogen base and pentose sugar

Answer:

Watch Video Solution

41. Double helix model for DNA was proposed by

A. Wilkins and Franklin

B. Watson and Crick

C. Jacob and Monod

D. Conrat and Singer

Answer:

Watch Video Solution

42. _____ demonstrated that RNA is the genetic material in RNA containing viruses.

A. Watson and Crick

B. Wilkins and Franklin

C. Jacob and Monod

D. Conrat and Singer

Answer:

 Watch Video Solution

43. Which biologist did not propose the RNA World' as the first stage in the evolution of life?

A. Craig Mellow

B. Orgel

C. Francis Crick

D. Carl Woese

Answer:

Watch Video Solution

44. Watson and Crick proposed their double helical DNA model based on the X-ray diffraction analysis of .....

A. Jacob and Monod

B. Meselon and Stahl

C. Andrew and Craig

D. Maurice and Rosalind

Answer:

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45. Choose the correct statement :

A. DNA does not depend on RNA for synthesis of protein

B. RNA is more chemically stable than DNA

C. Proteins do not have the ability to direct duplication

D. DNA mutates at a faster rate than RNA.

Answer:

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46. In which phase of cell cycle, does replication of DNA take place?

A. G_1 phase

B. S phase

C. G_2 phase

D. M phase

Answer:

Watch Video Solution

47. Who first proposed semi-conservative replication in 1953?

A. Meselson and Stahl

B. Jacob and Monod

C. Andrew and Craig

D. Watson and Crick

Answer:

Watch Video Solution

48. Meselson and Stahl experiment proved

A. E. coli

B. S. pneumoniae

C. S. aurus

D. B. subtilis

Answer:

Watch Video Solution

49. Technique used for distinguishing heavy DNA from light DNA in Meselson and Stahl's experiment is

A. Sucrose density gradient ultracentrifugation

B. Differential centrifugation

C. Ultracentrifugation

D. CsCl density gradient centrifugation

Answer:

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50. Which enzyme is not used in prokarytic replication?

A. DNA polymerase I

B. DNA polymerase II

C. DNA polymerase III

D. DNA dependent RNA polymerase

Answer:

Watch Video Solution

51. Which enzyme is also known as Kornberg enzyme?

A. DNA helecase

B. DNA ligase

C. DNA polymerase I

D. DNA polymerase III

Answer:

Watch Video Solution

52. Name the enzyme that is involved in the unwinding of the DNA strands?

A. DNA ligase

B. DNA polymerase

C. Nuclease

D. DNA gyrase

Answer:

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53. Which is the correct sequence of flow of genetic information.

A. $RNA \rightarrow DNA \rightarrow Prote \in s$

B. $DNA \rightarrow RNA \rightarrow Prote \in s$

C.

$$DNA \rightarrow mRNA \rightarrow cDNA \rightarrow prote \in s$$

D. $DNA \rightarrow cDNA \rightarrow Prote \in s$

Answer:

Watch Video Solution

54. Promoter region in prokaryotes is called

A. Pribnow box

B. Goldberg-Hogness box

C. TATA box

D. CAAT box

Answer:

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55. Which one of the following nitrogenous base is seen only in RNA?

A. Guanine

B. Thymine

C. Uracil

D. Cytosine

Answer:

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56. The type of structurl gene in prokarytoes is

A. Monocistronic

B. Dicistronic

C. Tricistronic

D. Polycistronic

Answer:

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57. RNA that is essential for synthesis of a protein

A. mRNA

B. tRNA

C. rRNA

D. All of the above

Answer:

Watch Video Solution

58. Identify the wrong statement

A. RNA polymerase II transcribes hnRNA

B. RNA polymerase I transcribes snRNA

C. RNA polymerase III transcribes tRNA

D. RNA polymerase III transcribes 5srRNA.

Answer:

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59. Horizontal gene transfer does not occur

A. Between lineages of prokaryotic cells

B. From prokarytic to eukaryotic cells

C. From eukaryotic to prokaryotic cells

D. Between eukaryotic cells

Answer:

Watch Video Solution

60. Who has not contributed to decipher the genetic code?

A. Nirenberg

B. Rosalind Franklin

C. Severo Ochoa

D. Crick

Answer:

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61. Which codon does not code for valine?

A. GCU

B. GUU

C. GUA

D. GUG

Answer:

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62. Which is a termination codon?

A. AUG

B. UGA

C. UGG

D. UGC

Answer:

Watch Video Solution

63. Wobble hypothesis was proposed by

A. Nirenberg

B. jacob

C. Khorana

D. Crick

Answer:

Watch Video Solution

64. Colver leaf model of tRNA was proposed by

A. Holley

B. Francis Crick

C. Nirenberg

D. Khorana

Answer:

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65. The process of adding amino acid to tRNA is called

A. Base substitution

B. Capping

C. Tailing

D. Aminoacylation

Answer:

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66. Aminoacylation is

A. an endothermic reaction

B. an exothermic reaction

C. base substitution reaction

D. condensation reaction

Answer:

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67. How many aminoacyl-tRNA synthetases are known?

A. 10

B. 20

C. 30

D. 40

Answer:

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68. Identify the wrong statement

A. tRNA charged with amino acid decodes the information on mRNA

B. There are tRNAs for stop codons

C. tRNA picks up amino acids scattered throughout the cytoplasm

D. There is specific tRNA for initiation.

Answer:

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69. What is the unit for sedimentaion co-efficient?

A. Siemens unit

B. Sievert unit

C. Svedberg unit

D. Scoville unit

Answer:

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70. Which antibiotic inhibits binding between tRNA and mRNA

A. Tetracycline

B. Neomycin

C. Chloramphenicol

D. Erythromycin

Answer:

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71. The clusters of gene with related functions are called _____

A. Operon

B. Cistron

C. Recon

D. Muton

Answer:

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72. List the enzymes required for the metabolism of lactose in E.coli. Give their functions.

A. Lactase

B. Permerase

C. β-galactosidase

D. Transacetylase

Answer:

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73. _____ proposed the classical model of lac operon.

A. Maurice and Franklin

B. Jacob and Monod

C. Conrat and Singer

D. Hershey and Chase

Answer:

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74. Match the following :

A) Streptomycin	-	1. Inhibits the interaction between tRNA and mRNA
B) Neomycin	-	2. Inhibits the translocation of mRNA along the ribosome
C) Chloramphenicol	-	3. Inhibits the initiation of translation and causes misreading
D) Erythromycin	-	4. Inhibits peptidyl transferase and formation of peptide bonds

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

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

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

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

Answer:

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75. Lac operon consists of

A. Three structural genes and one regualtor gene

B. One regulator gene and one structural gene

C. four structural genes

D. One regulator gene and two structural genes

Answer:

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76. Lac 'Z' gene codes for

A. Permease

B. β-galactosidase

C. Transacetylase

D. Aminoacyl synthetase

Answer:

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77. Automated DNA sequences are developed by.....

A. Alec Jeffreys

B. Goldberg

C. Colin MacLeod

D. Frederick Sanger

Answer:

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78. In prokaryotes, RNA polymerase is capable of catalyzing the process of

A. Termination

B. Initiation

C. Elongation

D. All of the above

Answer:

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79. Pharmacogenomic deals with the study of

A. finding chromosomal locations for disease associated sequences

B. tracing human history

C. identify people at genetic risk

D. how genes affect a person's response to drugs

Answer:

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80. The DNA finger printing technique was developed by

A. Frederick Sanger

B. Robert Holley

C. Alec jeffreys

D. Du Praw

Answer:

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81. Assertion: Viruses having RNA genome can mutate faster.

Reason: RNA is stable than DNA.

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

B. If both assertion and reason are correct, but reason is not the correct explanation of the assertion

C. If assertion is correct, but reason is incorrect

D. If both assertion and reason are incorrect

Answer:

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82. The questions below consists of statements of an Assertion and Reason. Use the following key to choose appropriate

answer.

If both assertion and reason are correct and reason is the correct explanation of the assertion

If both assertion and reason are correct, but reason is not the correct explanation of the assertion

If assertion is correct, but reason is incorrect

If both assertion and reason are incorrect:

Assertion : In prokaryotes. DNA is not scattered throughout the cell. Reason : DNA is help with some proteins in the nucleoid.

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83. The questions below consists of statements of an Assertion and Reason. Use the following key to choose appropriate answer.

If both assertion and reason are correct and reason is the correct explanation of the assertion

If both assertion and reason are correct, but reason is not the correct explanation of the assertion

If assertion is correct, but reason is incorrect

If both assertion and reason are incorrect: Assertin : Both the strands of DNA can be copied during transcription. Reason : The two strands of the DNA in the structural gene of a transcription unit have same polarity.

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84. The questions below consists of statements of an Assertion and Reason. Use the following key to choose appropriate answer.

If both assertion and reason are correct and reason is the correct explanation of the assertion

If both assertion and reason are correct, but reason is not the correct explanation of the assertion

If assertion is correct, but reason is incorrect

If both assertion and reason are incorrect:

Assertion : In bacteria, mRNA does not require any processing to become acitve. Reason : Transcription and translation can take place simultaneously in the same compartment.

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