



BIOLOGY

BOOKS - MBD

MOLECULAR BASIS OF INHERITANCE

Example

1. Name the components in a nucleoside.



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2. Name the pentose sugar found in RNA.



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3. Name the nitrogen base that replaces thymine in RNA.



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4. What makes a nucleoside turn into a nucleotide?



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5. How is a phosphate attached to the nucleoside?



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6. How are the consecutive nucleotides linked together in a polynucleotide strand?



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7. What forms the backbone of a polynucleotide strand of a nucleic acid?



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8. How many base pairs are present in a typical nucleosome?



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9. What is meant by origin of replication?





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10. What is replication fork in DNA?



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11. Mention the role of DNA-polymerase I during DNA replication of RNA primer with deoxyribo-nucleotides.



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12. Specify the direction in which DNA polymerase synthesises the polynucleotides.



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13. What is base pairing?



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14. What is function of RNA primer?



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15. Name the enzyme that joins the short pieces in the lagging strand during synthesis of DNA.



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16. Write central dogma of molecular biology.



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17. Define transcription.



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18. Name the property of DNA that governs transcription.



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19. What is genetic code?



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20. What is a Codon?



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21. How many codons are possible with the 4 letter language U, C, A, G?



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22. What is meant by unambiguous code?



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23. What do the triplets AUG and UGA respectively code for during protein synthesis?



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24. Define translation.



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25. What is meant by charging or amino acylation of tRNA?



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26. What is the function of amino-acyl-tRNA synthetase?



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27. Name the site of translation in cells.



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28. What in anticodon?



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29. What function does the enzyme β -galactosidase carry out in a Bacterial cell/*E. coli*?



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30. How is the accessibility of promoter region to RNA-polymerase regulated in prokaryotic cells?



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31. Who proposed the operon concept?



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32. Name the inducer of lac operon in E-coli.





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33. What is the function of permease coded by *y* gene?



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34. Why is lactose called the inducer of lac operon?



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35. Can you think, for how long would the lac operon be expressed in the presence of lactose?



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36. Who developed the principle or method of automated DNA sequences?



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37. Which chromosome was the last to be sequenced in HGP?



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38. When was the sequencing of chromosome No. 1 completed?



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39. Name the human chromosome that has:
the most maximum number of genes.



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40. Name the human chromosome that has:
the least number of genes.



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41. What is the greatest impact of Human genome sequencing?



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42. What term is given to single base DNA differences?



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43. Group the following as nitrogenous bases and nucleosides:

Adenine, Cytidine, Thymine, Guanosine, Uracil and cytosine.



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44. If a double stranded DNA has 20 per cent of cytosine, calculate the per cent of adenine in the DNA.



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45. If the sequence of one strand of DNA is written as follows: 5' ATGCATGCATGCATGCATGCATGCATGC-3' Write down the sequence of complementary strand in 5-3' direction.



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46. If the sequence of the coding strand in a transcription unit is written as follows: 5'-

ATGCATGCATGCATGCATGCATGCATGC-3' Write

down the sequence of mRNA.



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47. Which property of DNA double helix led Watson and Crick to hypothesise semi-conservative mode of DNA replication? Explain.



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48. Depending upon the chemical nature of template (DNA or RNA) and the nature of nucleic acids synthesized from it (DNA or RNA), list the types of nucleic acid polymerases.



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49. How did Hershey and Chase differentiate between DNA and protein in their experiment while proving that DNA is the genetic material?





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50. Differentiate between repetitive DNA and satellite DNA.



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51. Differentiate between the followings:
mRNA and tRNA



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52. Differentiate between the followings:

Templale strand and Coding strand



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53. List two essential roles of ribosome during translation.



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54. In the medium where E. coli was growing, lactose was added, which induced the lac

operon. Then, why does lac operon shut down some time after addition of lactose in the medium?



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55. Explain (in one or two lines) the function of following: Promoter



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56. Explain (in one or two lines) the function of following: Exons



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57. Why is human genome project called a mega project ?



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58. What is DNA fingerprinting ? Mention its applications.



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59. Define transcription.



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60. Briefly describe the following:

Polymorphism



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61. Briefly describe the following: Translation



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62. Briefly describe the following:
Bioinformatics



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63. What is the function of histones in DNA packing?



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64. Distinguish between heterochromatin and euchromatin. which of the two is transcriptionally active?



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65. The enzyme DNA polymerase in E.coli is a DNA dependent polymerase and also has the ability to proof read the DNA strand being synthesised.Explain.

Discuss the dual polymerase.



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66. What is the cause of discontinuous synthesis of DNA on one of the parental

strands of DNA? What happens to these short stretches of synthesised DNA?



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67. Given below is the sequence of coding strand of DNA in a transcription unit 3' A A T G C A G C T A T T A G G - 5' write the sequence of: its complementary strand



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68. Given below is the sequence of coding strand of DNA in a transcription unit 3' A A T G C A G C T A T T A G G - 5' write the sequence of: the mRNA



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69. What is DNA polymorphism?

Why is it important to study it?



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70. Based on your understanding of genetic code, explain the formation of any abnormal haemoglobin molecule. What are the known consequences of such a change ?



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71. Sometimes cattle or even human beings give birth to their young ones that are having extremely different sets of organs like limbs/position of eye(s), etc. Comment.



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72. In a nucleus, the number of ribonucleoside triphosphate is 10 times the number of deoxyribonucleoside triphosphates but only deoxyribonucleotides are added during the DNA replication. Suggest a mechanism.



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73. Name a few enzymes involved in DNA replication other than DNA polymerase and

ligase. Name the key functions for each of them.



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74. Name any three viruses which have RNA as the genetic material.



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75. Define transformation in Griffith's experiment. Discuss how it helps in the

identification of DNA as the genetic material.



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76. Who revealed biochemical nature of transforming principle? How was it done?



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77. Discuss the significance of heavy isotope of nitrogen in Meselson and Stahl's experiment.



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78. Differentiate polycistronic mRNA and monocistronic mRNA.



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79. What is Human genome project ? Briefly write about the salient features of Human Genome project.



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80. During DNA replication, why is it that the entire molecule does not open in one go ?
Explain replication fork.



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81. Retroviruses do not follow central dogma.
Comment.



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82. In an experiment, DNA is treated with the compound which tends to place itself amongst the stacks of nitrogenous base pairs. As a result of this, the distance between two consecutive base increases. From 0.34 - 0.44 nm calculate the length of DNA double helix (which has 2×10^9 bp) in the presence of saturating of this compound.



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83. What would happen if histones were to be mutated and made rich in acidic amino acids such as aspartic acid and glutamic acid in place of basic amino acids such as lysine and arginine?



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84. Recall the experiments done by Frederick Griffith, Avery, MacLeod and McCarty, where DNA was speculated to be the genetic

material. If RNA, instead of DNA was the genetic material, would the heat killed strain of *Pneumococcus* have transformed the R-strain into virulent strain? Explain.



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85. You are repeating the Hershey-Chase experiment and are provided with two isotopes ^{32}P and ^{15}N (in place of ^{35}S in the original experiment). How do you expect your results to be different?



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86. There is only one possible sequence of amino acids when deduced from a given nucleotides. But multiple nucleotides sequence can be deduced from a single amino acid sequence. Explain this phenomena.



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87. A single base mutation in a gene may not always result in loss or gain of function. Do

you think the statement is correct? Define your answer.



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88. A low level of expression of lac operon occur at all tissues. Can you explain the logic behind this phenomenon?



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89. How has the sequencing of human genome opened new windows of treatment of various genetic disorders. Discuss amongst your classmates.



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90. The total number of genes in humans is far less (<25000) than the previous estimate (up to 140000 gene). Comment.



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91. Now, sequencing of total genome is getting less expensive day by day. Soon it may be affordable for a common man to get his genome sequenced. What in your opinion could be advantage and disadvantage of this development?



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92. Would it be appropriate to use DNA probes such as VNTR in DNA fingerprinting of a

bacteriophage?



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93. During in vitro synthesis of DNA, a researcher used 2', 3'-di-deoxycytidine triphosphate as raw material in place of 2'-deoxycytidine triphosphate. What would be the consequence.



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94. What background information did Watson and Crick had with them for developing a model of DNA? What was their own contribution?



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95. What are the functions of:
methylated guanine cap?



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96. What are the functions of:

poly-A 'tail' in a mature mRNA?



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97. Do you think that alternative splicing of exons mainly enable a structural gene to code for several isoprotein from one and same gene? If yes ,how? If not,why so?



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98. Comment on the utility of variability in the number of tandem repeats during DNA fingerprinting.



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99. Give an account of Hershey and Chase experiment. What did it conclusively prove? If both DNA and proteins contained phosphorus and sulphur do you think the result would have been the same?



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100. Give an account of post transcriptional modifications of a eukaryotic mRNA.



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101. Define and explain the process of translation with suitable diagrams.



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102. Define an operon, Giving an example to explain inducible Operon.



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103. There is a paternity dispute for a child'. Which technique can solve the problem? Discuss the principle involved.



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104. Give an account of the methods used in sequencing the human genome.



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105. Who proved semiconservative mode of DNA replication for the first time in *E. Coli* with the help of N^{15} heavy nitrogen isotope?

A. Watson and Crick

B. Kornberg and Ochova

C. Messelson and Stahl

D. Luria and Delbruck

Answer:



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106. A nucleoside differs from a nucleotide. It lacks the:

A. base

B. sugar

C. phosphate group

D. hydroxyl group

Answer:



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

A. trioses

B. hexoses

C. pentoses

D. polysaccharides

Answer:



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108. The net electric charge on DNA and histones is:

A. both positive

B. both negative

C. negative and positive, respectively

D. zero

Answer:



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109. The promoter site and the terminator site for transcription are located at:

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

unit

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

C. the 5' (upstream) end

D. the 3' (downstream) end

Answer:



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110. 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 of acquiring malaria
- D. All of the above

Answer:



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111. One of the following is true with respect to AUG

- A. It codes for methionine only
- B. It is also an initiation codon
- C. It codes for methionine in both prokaryotes and eukaryotes
- D. All of the above

Answer:



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112. The first genetic material could be

A. protein

B. carbohydrates

C. DNA

D. RNA

Answer:



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113. 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:



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114. The human chromosome with the highest and least number of genes in them are respectively.

- A. Chromosome 21 and Y
- B. Chromosome 1 and X
- C. Chromosome 1 and Y
- D. Chromosome X and Y

Answer:



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115. 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:



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116. DNA is a polymer of nucleotides which are lined to each other by 3'-5' phosphodiester bond. To prevent polymerisation of nucleotides, which of the following modification 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:



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117. Discontinuous synthesis of DNA occurs in one strand, because:

A. DNA molecule being synthesised is very

long

B. DNA dependent DNA polymerase

catalyses polymerisation only in one

direction ($5' \rightarrow 3'$)

C. it is a more efficient process

D. DNA ligase has to have a role

Answer:



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

A. Initiation

B. Elongation

C. Termination

D. All of the above

Answer:



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119. Control of gene expression takes place at the level of:

- A. DNA - replication
- B. Transcription
- C. Translation
- D. None of the above

Answer:



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120. 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:



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121. Which was the last human chromosome to be completely sequenced:

A. Chromosome 1

B. Chromosome 11

C. Chromosome 21

D. Chromosome X

Answer:



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122. Which of the following are the functions of RNA?

- A. (a) It is a carrier of genetic information from DNA to ribosomes synthesized polypeptide
- B. (b) It carries amino acids to ribosomes
- C. (c) It is a constituent component of ribosomes
- D. (d) All of the above

Answer:



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123. 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 Chargaffs 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:



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124. In some viruses, DNA is synthesised by using RNA as template. Such a DNA is called:

A. A-DNA

B. B-DNA

C. c-DNA

D. r-DNA

Answer:



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

A. 1:1:0

B. 1:4:0

C. 0:1:3

D. 0:1:7

Answer:



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126. In the sequence of nitrogen bases of the coding strand of DNA in a transcription unit is: 5' - A T G A A T G - 3', the sequence of bases in its RNA transcript would be:

A. 5' - AUGAUG - 3'

B. 5' - UACUUAC - 3'

C. 5' - CAUUCAU - 3'

D. 5' - GUAAGUA - 3'

Answer:



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127. The RNA polymerase holoenzyme transcribes:

- A. (a) The promoter, structural gene and terminator region
- B. (b) The promoter and terminator region
- C. (c) The structural gene and terminator region
- D. (d) The structural gene only

Answer:



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128. If the base sequence of a codon mRNA is 5' - AUC - 3', the sequence of tRNA pairing with it must be:

- A. 5' - end
- B. 3' end
- C. Anticodon site
- D. DHU loop

Answer:



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129. The amino acid attaches to the tRNA at its:

A. 5- end

B. 3-end

C. Anticodon site

D. DHU loop

Answer:



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130. How many nucleotides are present in a bacteriophage $\phi \times 174$?



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131. List the number of base pairs in:

Lambda bacteriophage



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132. List the number of base pairs in:

E. coli



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133. List the number of base pairs in:
haploid content of human DNA.



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134. Comment two chains of DNA have
antiparallel polarity.



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135. What is length of DNA in a typical mammalian cell?



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136. If the length of E. Coli DNA is 1.36 mm, how many, base pairs are present in DNA.



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137. How is DNA held by some proteins of cytoplasm in E. coli?



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138. What is the difference between DNAs and DNAase?



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139. Suggest one evidence to prove that RNA was first genetic material.



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140. Why was RNA unstable?



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141. Expand UTR.



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142. Where are UTRs present in mRNA strand?



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143. Write significance of UTRs.



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144. Give an example of a codon having dual function.



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145. Write the dual purpose served by Deoxyribonucleoside triphosphates in polymerisation.



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146. Compare the primary structure of nucleic acid and protein.



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147. Why was it believed earlier that proteins could be genetic material?



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148. What is the contribution of Avery, MacCleod and McCarty?



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149. How did the transformation experiments of Griffith differ from those of Avery and MacCleod?



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150. Choose the correct alternative

A. tRNA is also known as Soluble RNA/rRNA

B. When S-type/ R-Type of Diplococcus is

injected into the mouse, the mouse will

die

C. The process of formation of m-RNA from DNA is called translation/transcription

D. Some amino acids are coded by more than one codon, hence code is Degenerate/Unambiguous

Answer:



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151. Describe transformation.



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152. What was the rationale of using ^{32}P and ^{35}S by Hershey and Chase? Instead, if we use radiolabelled C and N, will the results be any different?



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153. Make a table showing genetic material of different organisms.



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154. What is nucleic acid ?



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155. How is length of DNA defined? Illustrate with examples.



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156. Why is the DNA molecule compared to a spiralling staircase?



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157. Sketch a double helix of DNA.



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158. Write differences between prokaryotic DNA and Eukaryotic DNA.



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159. How is long DNA molecule adjusted in a nucleus.



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160. The first genetic material could be



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161. Write a note on semiconservative mode of DNA replication.



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162. Differentiate between DNA polymerase and RNA polymerase.



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163. Write two differences between leading strand and lagging strand.



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164. Write a note on DNA synthesis in vitro.



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165. Write a note on repair replication.



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166. Briefly discuss the enzymes and steps involved in repair replication.



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167. Describe the structure of a RNA polynucleotide chain having four different types of nucleotides.



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168. Write a note on messenger RNA.



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169. What is the role of m-RNA, t-RNA and Rrna in protein synthesis?



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170. RNA was first genetic material, DNA evolved later on. Explain.



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171. Write six differences between DNA and RNA.



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172. Explain Central Dogma of flow of information.



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173. What are the three types of RNA molecules? How is each related to concept of information flow?



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174. List the requirements for transcription.



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175. Give a schematic structure of transcription.



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176. Define transcription.



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177. Describe the initiation process of transcription in bacteria.



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178. Define Transcription. Explain the process of transcription in Eukaryotes with well label diagram.



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179. Write differences between replication and transcription.



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180. What is genetic code?



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181. What is genetic code?



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182. Briefly explain Wobble hypothesis.



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183. Differentiate between codon and anticodon.



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184. Explain initiation of polypeptide chain.



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185. Give a diagrammatic representation of translation.



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186. List two essential roles of ribosome during translation.



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187. Briefly describe termination of polypeptide chain.



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188. Differentiate translation and translocation.



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189. Differentiate

transformation and transduction.



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190. What is inducer in the lac operon? How does it ensure the "switching on" or of genes?



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191. Give the chief characteristic of Eukaryotic operon.



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192. Differentiate between Introns and Exons.



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193. Differentiate aporepressor and corepressor.



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194. Differentiate inducer and repressor.



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195. Differentiate

VNTR and probe



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196. What is the difference between DNAs and DNAase?



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197. List the application and future challenges of human genome project.



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198. In human genome which one of the chromosomes has the most genes and which one has the fewest?



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199. Scientists have identified about 1.4 million single nucleotide polymorphisms in human genome. How is the information of their existence going to help the scientists?



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200. What is satellite DNA? Name their two types. Mention the basis for their classification.



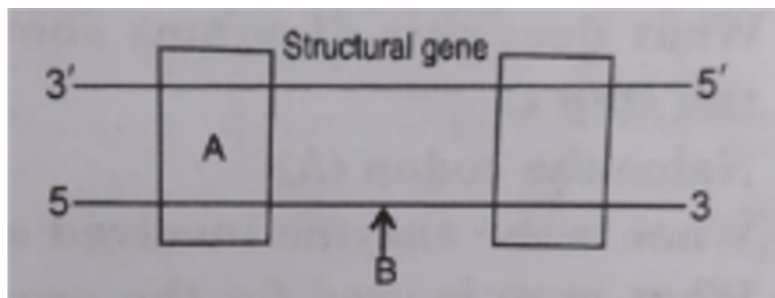
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201. What are aims of bioinformatics?



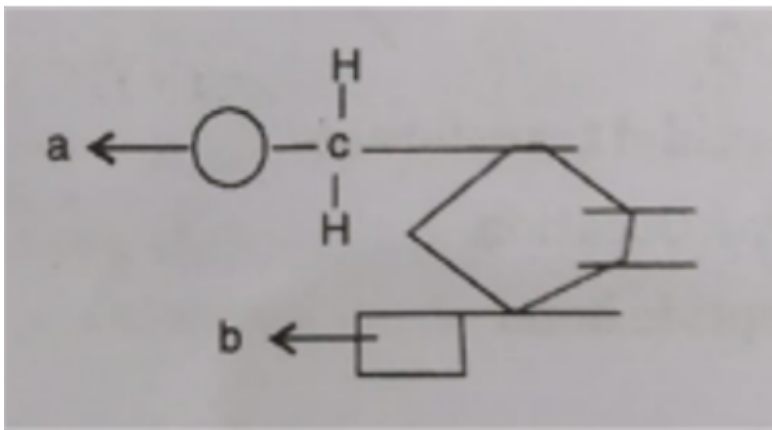
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202. Name the parts 'A' and 'B' of the transcription unit given below:



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203. Name the components 'a' and 'b' in the nucleotide with a purine, given below:



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204. Study the mRNA segment given below which is complete to be translated into a polypeptide chain.

Write the codons 'a' and 'b'?

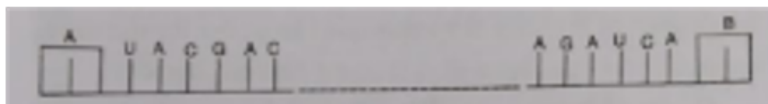




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205. Study the mRNA segment given below which is complete to be translated into a polypeptide chain.

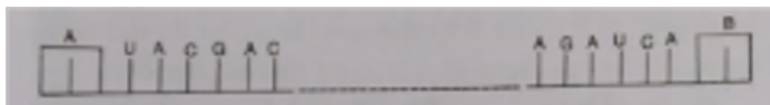
What do they code for?



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206. Study the mRNA segment given below which is complete to be translated into a polypeptide chain.

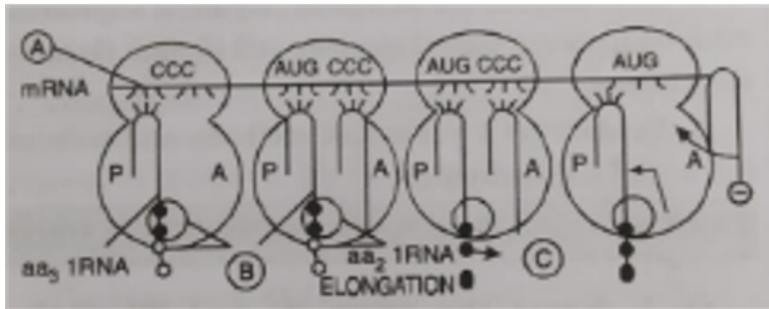
How is peptide bond formed between two amino acids in the ribosome?



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207. Study the diagram and answer the following questions:

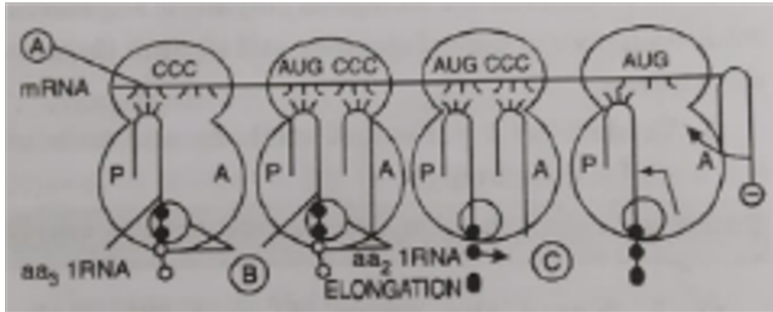
What does this diagrams shows? Name the step C.



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208. Study the diagram and answer the following questions:

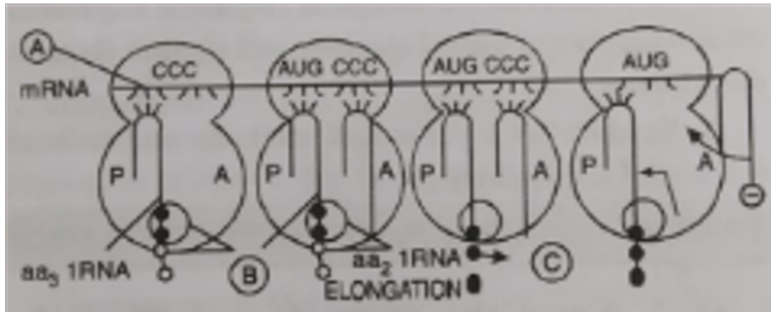
Name the codon (A).



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209. Study the diagram and answer the following questions:

What is the enzyme involved at (B)?

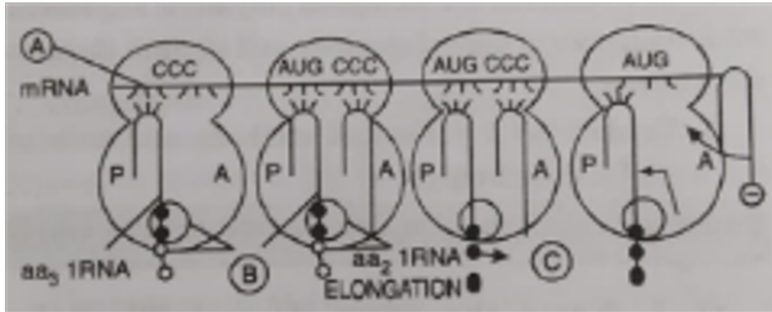


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210. Study the diagram and answer the following questions:

What term is used for the process when

Name the bond formed between amino acids.



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212. What are splint bones? How do they support organic evolution?



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213. Name the following who first: Deciphered the genetic code

A. Proved experimentally that DNA replication is semi-conservative

B. Double helical structure of DNA

C. Performed experiment on transformation

D. Suggested that an intermediate RNA is required to read the codon on mRNA.

Answer:



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214. In the eukaryotes the DNA molecules are organised within the nucleus. How is the DNA molecule organised in a bacterial cell in absence of a nucleus



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215. Write out the amino acid sequences that would be translated when the following mRNA molecules combine with a ribosome.

A-U-G-C-A-U-A-G-A-A-G-G-C-C-U-A-U-U-G-U-A



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216. Write out the amino acid sequences that would be translated when the following mRNA molecules combine with a ribosome.

C-A-U-G-U-U-U-C-U-U-U-A-A-A-G-G-U-C-G-U-U





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217. Write out the mRNA sequence that would be transcribed from the following strand of DNA, and the amino acid sequence that would be translated when the mRNA combines with a ribosome:

T-A-C-A-A-G-T-A-C-T-T-G-T-T-T-C-T-T



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218. Name the enzymes involved in DNA replication other than DNA polymerases and ligase? Name the key functions of each of them?



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219. A small stretch of DNA strand that codes for a polypeptide is shown below:

3'---CAT CAT AGA TGA AAC... ..5'

Which type of mutation could have occurred

in each type resulting in the following mistakes during replication of the above original sequence?

3'... ..CAT CAT AGA TGA ATC... ..5'



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220. A small stretch of DNA strand that codes for a polypeptide is shown below:

3'---CAT CAT AGA TGA ATC... ..5'

Which type of mutation could have occurred in each type resulting in the following

mistakes during replication of the above original sequence? 3' CAT ATA GAT GAA AC... .. 5'



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221. A small stretch of DNA strand that codes for a polypeptide is shown below:

3'---CAT CAT AGA TGA ATC... .. 5'

How many amino acids will be translated from each of the above strands (i) and (ii)?



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222. List the criteria that can act as genetic material must fulfill. Which one of the criteria are best fulfilled by DNA or RNA thus making one of them as better genetic material? Explain.



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223. Describe Griffith's experiment in brief to prove that DNA is a genetic material.



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224. What is the chemical that brings about bacterial transformation?



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225. Answer the following questions based on Hershey and Chase's experiments.

Name the kind of virus they worked with and why?



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226. Answer the following questions based on Hershey and Chase's experiments.

Why did they use two types of culture media to grow viruses in it? Explain.



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227. Answer the following questions based on Hershey and Chase's experiments.

What was the need for using a blender and later a centrifuge during their experiments?



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228. Answer the following questions based on Hershey and Chase's experiments.

State the conclusion drawn by them after the experiment.



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229. Differentiate DNA and RNA.



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230. How are the following formed and involved in DNA packaging in a nucleus of a cell?

Histone octamer



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231. How are the following formed and involved in DNA packaging in a nucleus of a cell?

Nucleosome



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232. How are the following formed and involved in DNA packaging in a nucleus of a cell?

Chromatin



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233. Differentiate between Euchromatin and Heterochromatin.



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234. Why is DNA molecule more stable genetic material than RNA? Explain.



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235. Unambiguous', 'degenerate' and 'universal' are some of the salient features of genetic code. Explain.



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236. Write a note on semiconservative mode of DNA replication.



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237. Make a table showing genetic codes and the corresponding amino acids coded by genetic codes.



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238. What is human genome project? Write down four goals of human genome project.



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239. What are the two main events of protein synthesis? Describe transcription.



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240. Define translation.



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241. Explain the process of charging of tRNA.



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242. Show the components of lac operon.



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243. What is Human Genome Project? Discuss the application and future challenges of Human Genome Project.



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244. What is principle of DNA fingerprinting.



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245. State the role of VNTRs in DNA fingerprinting.



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246. Explain in brief about the procedure of DNA fingerprinting.



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247. Name the enzyme and state its property that is responsible for continuous and discontinuous replication of the two strands of a DNA molecules.



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248. Give the significance of atavistic structure?



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249. How is the wrong base removed before proceeding to add new bases in 5' to 3' direction during replication of DNA?



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250. DNA polymerase I of E.coli is a single polypeptide of molecular weight 109,000 (a) What enzymatic activity other than polymerase activity does this polypeptide possess? (b) What are the in vivo functions of these activities?



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Exercise

1. To initiate translation, the mRNA first binds to :

- A. The smaller ribosomal sub-unit
- B. The large ribosomal sub-unit
- C. The whole ribosome
- D. No such specificity exists.

Answer:



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2. In E.coli, the lac operon gets switched on when :

A. lactose is present and it binds to the repressor

B. repressor binds to operator

C. RNA polymerase binds to the operator

D. lactose is present and it binds to RNA polymerase.

Answer:



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3. What is Human genome project ? Briefly write about the salient features of Human Genome project.



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4. Differentiate between monocistronic and polycistronic transcription unit.



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5. Where and when does replication occur?



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6. What is meant by term gene expression?



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7. Differentiate induction and repression.



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8. Sketch a "Clover Leaf Model of RNA". Write its role in translation.



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9. Name the enzymes involved during replication of DNA



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10. Name the enzymes involved during transcription of RNA.



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11. Discuss the mechanism of transduction as illustrated by Hershey and Chase.



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12. Comment on the utility of variability in the number of tandem repeats during DNA fingerprinting.



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13. Write pair of contrasting characters of:

A. Position of flowers

B. Colour of unripened pod

C. Shape of ripe pod

D. Colour of cotyledons

Answer:



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14. Name the type of inheritance in which genotype ratio is same as phenotype ratio?

Also give the ratio



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15. Name the 6 biogeographical realms?



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16. Draw a schematic representation of the structure of a transcription unit and show the following in it:

Direction in which the transcription occurs



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17. Draw a schematic representation of the structure of a transcription unit and show the following in it:

Polarity of the two strands involved





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18. Draw a schematic representation of the structure of a transcription unit and show the following in it:

Template strand



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19. Draw a schematic representation of the structure of a transcription unit and show

the following in it:

Terminator gene



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20. Mention the function of promoter gene in transcription.



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