BIOLOGY

BOOKS - SUPER COMPANION 5 IN 1

MOLECULAR BASIS OF INHERITANCE

One Marks Question

1. Define point mutation ?give an example for point mutation?

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2. Name the purines of DNA?

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3. Name the pyrimidines of DNA?

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4. Who proposed the double helix model for DNA?

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5. Name the types of RNA.

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6. Mention the nitrogen base present in RNA but not in DNA.

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7. Mention the nitrogen base present in DNA but not in RNA

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8. Who discovered nucleic acids?

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9. Who discovered the semi conservative nature of DNA replication?

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10. What is polycistronic mRNA?

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11. Who gave the name "Nucleic Acid"?

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12. What are the two components of adenosine?

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13. Define Gene?

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14. Define Cistron?

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15. Define Muton.

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16. Define recon.

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17. Define genetic code.

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18. Define triplet code?

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19. Define transcription?

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20. Define Translation?

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21. Who proposed the" Operon concept"?

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22. Name the initiator triplet cordon of protein synthesis?

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23. Define genetic code.

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24. What is translation.

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25. Define transcription.

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26. Explain (in one or two lines the functions of following: (a) Promoter

(b) tRNA

(c) Exons.

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27. Give the initiation codon for protein synthesis. Name the amino acid it codes for?

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28. In which direction, is the new strand of DNA synthesised during DNA replication.

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

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30. Name the enzyme which helps in the formation of peptide bond?

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31. Name the three non-sense codon?

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32. Mention the dual functions of AUG?

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33. Heterochromatin is transcriptionally inactive when compared to euchromatin. Give reason.

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Two Marks Questions

1. What are "nonsense codons" name them.

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2. What is a nucleotide? Give an example.

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3. Name the different nucleotides of DNA.

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4. Mention 4 differences between RNA and DNA.

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5. During translation, if the codon on mRNA is AUG, then

(i) What is the sequence of anticodon presenlapon corresponding (RNA)?

(ii) Name the amino acid carried by this tRNA.

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6. List any four characters of genetic code?

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7. Give an account of mRNA.

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8. Differentiate between sense and antisense strands of DNA.

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9. Mention any three applications of DNA finger printing technique.

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10. Name the enzyme that catalyses

(a) replication of DNA and

(b) formation of RNA

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11. Differentiate between Exons and Introns.

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12. Group the following an nitrogenous bases and nucleosides: Adenine, Cytidine, Thymine, Guanosine, Uracil, and Cytosine

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13. If a double stranded DNA hu 20% of cytokines, calculate the percent of dentate DNA.

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14. If the sequence of one strand of DNA is written as follows: S'ATGCATGCATGCATGCA TGCATGCA TGC-3' Write down the sequence of complementary strands in 5' to 3' direction.

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15. If the sequence of Coding strands in a transcription unit is written as follows:S'-ATGCATGTCA ATGC ATGC ATGC-3' Write down the sequence of mRNA.

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16. Define the terms a) Transcription b) Translation

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Three Marks Question

1. How is nucleosome formed? Draw a diagram of the nucleosome.

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2. Explain the post transcriptional events in eukaryotes .

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Five Marks Question

1. Describe the regulation of lac-operon in E.coli.

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2. Describe the Semiconservative method of DNA replication.

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3. Describe any five properties of genetic code.

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4. Explain the experiment of Aveny to show DNA acts as genetic material.

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5. Describe double helical model of DNA.

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6. Briefly explain the steps involved in DNA finger printing?

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7. Enlist the goals and applications of Human Genome project.

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8. Briefly explain the process of Translation during protein synthesis?

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9. Differentiate between continuous and discontinuous synthesis of DNA.

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10. Describe the process of transcription of mRNA in an Eukaryotic cell.

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11. List any four salient features of human genome project.

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12. Represent diagrammatically hershey-Chase experiment. What did this experiment prove?

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13. Draw the schematic structure and explain the different regions of a transcription unit.

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14. Explain the different steps involved in translation.

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