



BIOLOGY

BOOKS - PSEB

MOLECULAR BASIS OF INTERITANCE

Exercise

1. Group the following as nitrogenous bases and nucleosides: Adenine



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2. Group the following as nitrogenous bases and nucleosides: Cytidine



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3. Group the following as nitrogenous bases and nucleosides: Thymine



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4. Group the following as nitrogenous bases and nucleosides: Guanosine



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5. Group the following as nitrogenous bases and nucleosides: Uracil and Cytosine



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



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





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8. If the sequence of the coding strand in a transcription unit is written as follows: 5'-ATGCATGCATGCATGCATGCATGC-3' Write down the sequence of mRNA.



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9. Which property of DNA double helix led Watson and Crick to hypothesize semi-

conservative mode of DNA replication?

Explain.



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10. Differentiate between the followings:

mRNA and tRNA



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11. Differentiate between the followings:

Template strand and Coding strand



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12. List two essential roles of ribosome during translation.



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13. 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 to the medium?



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14. Explain [in one or two lines] the function of the followings: Promoter



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15. Explain [in one or two lines] the function of the followings: tRNA



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



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



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18. What Is DNA fingerprinting? MenUon its application.



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19. Define transcription.



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20. Briefly describe the following:

Polymorphism





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21. Briefly describe the following: Translation



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22. Briefly describe the following:

Bioinformatics



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