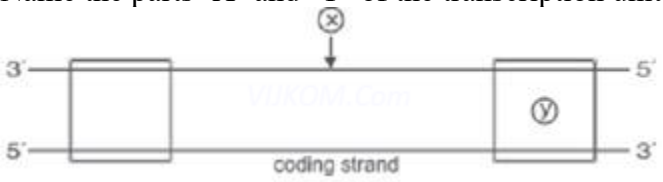
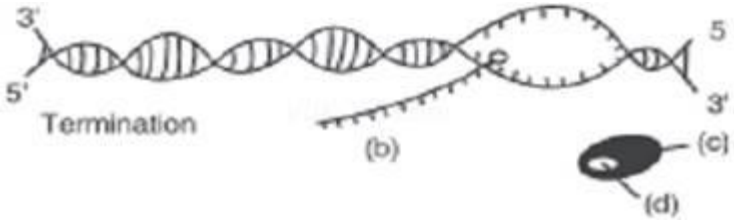
# INDIAN SCHOOL NIZWA - WORKSHEET

| | BIOLOGY | |
|---|---|---|
| CH-5 MOLECULAR BASIS OF INHERETANCE<br>CH 9 BIOTECHNOLOGY: PRINCIPLES AND PROCESSES<br>CH 10 BIOTECHNOLOGY: APPLICATIONS (BOARD QUESTIONS-Revision) | | |
| | | |
| Name: _____ | Date:_____ | Class: XII-A |
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| | **Answer the following** |
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| 1. | Name the parts 'X' and 'Y' of the transcription unit given below.<br> |
| 2. | The process of termination during transcription in a prokaryotic cell is being represented here. Name the label a, b, c and d.<br> |
| 3. | A tRNA is charged with the amino acid methionine.<br>(i) Give the anti-codon of this tRNA.<br>(ii) Write the Codon for methionine.<br>(iii) Name the enzyme responsible for binding of amino acid to tRNA. |
| 4. | The base sequence on one strand of DNA is ATGTCTATA<br>(i) Give the base sequence of its complementary strand.<br>(ii) If an RNA strand is transcribed from this strand what would be the base sequence of RNA?<br>(iii) What holds these base pairs together? |
| 5. | Two claimant fathers filed a case against a lady claiming to be the father of her only daughter. How could this case be settled identifying the real biological father? |
| 6. | A selectable marker is used in the section of recombinants on the basis of their ability to produce colour in presence of chromogenic substrate.<br>(a) Mention the name of mechanism involved.<br>(b) Which enzyme is involved in production of colour?<br>(c) How is it advantageous over using antibiotic resistant gene as a selectable marker? |
| 7. | (i) Explain the significance of palindromic nucleotide sequences in the formation of recombinant DNA.<br>(ii) Write the use of restriction endonuclease in the above process. |

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| 8. | A recombinant DNA is formed when sticky ends of vector DNA and foreign DNA join. Explain how the sticky ends are formed and get joined? |
| 9. | Diagrammatically represent the experimental steps in cloning and expressing a human gene (Eg: gene for growth hormone) into a bacterium like E. coli. |
| 10. | In recombinant DNA technology, vectors are used to transfer a gene of interest in the host cells. Mention any three features of vectors that are most suitable for this purpose. |
| 11. | How is "Rosie" considered different from a normal cow? Explain. |
| 12 | (a) Tobacco plants are damaged severely when infested with Meloidogyne incognita. Name and explain the strategy that is adopted to stop this infestation.<br>(b) Name the vector used for introducing nematode specific gene in Tobacco plant. |