Q II. (A) State whether the following statements are true or false. (any two). (2)

1. The 5' to 3' DNA strand complementary to template strand is known as non-template strand.
2. The stop codons are used to specify the end of translation of a polypeptide chian.
3. In prokaryotes, the initiator methionine is a modified form of methionine known as formylmethionine.
4. The enzyme transformylase adds the formyl group to the methionine resulting in fMet-tRNA.fMet.

Q II. (B) Explain the following terms. (any three) (6)

1. Translation.
2. Non Template Strand.
3. Promoter proximal elements.
4. Degeneracy of Code.
5. Aminoacylation.
6. Reverse Transcription.

Q II. (C) Answer (any two) of the following. (12)

1. Explain the process of Initiation of Translation in *E.coli*.
2. Explain the process of Elongation, Termination of Transcription in prokaryotes.
3. Write in brief about the production of aminoacyl-tRNA with diagram.
4. Describe the action of RNA dependent DNA polymerase.

Q III(A) Fill in the blanks (Any four). (4)

1. ..... is known as sexual differences which are clearly evident from external observation. (Generic control, sexual dimorphism, sex determination, autosomes)
2. X and Y chromosomes are called as .....(Autosomes, sex chromosomes, defective chromosomes, useless chromosomes).
3. Mitochondrial ribosomes consist of..... Subunits. (Four, one, two, eight).
4. For protein synthesis, only..... Mitochondria use the "universal" nuclear genetic code. (Plant, animal, fungi, archaebacterial).
5. The XO method of sex determination is similar to the XY method but the absence of ..... chromosome. (X, O,Y,XX)

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