(25)

No. of Printed Pages: 2

B.Sc V Sem -

SARDAR PATEL UNIVERSITY

MICROBIOLOGY(US05CMIC01)

Fundamentals of molecular biology

Date : 12/ 11/2013

Time : 10:30 a.m to 1:30 p.m

TOTAL MARKS : 70

Note: Figures on the right indicate marks

Que –(1) Attempt the following multiple choice questions. **(10)**

1) Ribosome recognition site on tRNA is present on this arm.
   (a) DHU arm
   (b) T ΨC arm
   c) Acceptor arm
   d) None of these
2) 23S rRNA is present on this bacterial component.
   (a) Ribosome
   (b) Cell wall
   c) Cell membrane
   d) All of these
3) This is a left handed form of DNA.
   (a) A - form
   (b) B - form
   c) D- form
   d) Z - form
4) This subunit of RNA Polymerase binds DNA template.
   (a) β
   (b) β'
   c) σ
   d) ω
5) Reverse transcriptase mediates –
   (a) DNA dependent DNA synthesis
   (b) DNA dependent RNA synthesis
   c) RNA dependent DNA synthesis
   d) RNA dependent RNA synthesis
6) Lac repressor has the affinity for –
   (a) Lac promoter
   (b) RNA polymerase
   c) Lac operator
   d) None of these
7) DNA replication follows this mode.
   (a) Semiconservative
   (b) Conservative
   c) Dispersive
   d) All of these
8) Methionine is coded for by-
   (a) AUG
   (b) UGA
   c) UAG
   d) UAA
9) This is not a termination codon.
   (a) AUG
   (b) UGA
   c) UAG
   d) UAA
10) The DNA Polymerase/s present in *E.coli* is/are-
   (a) Polymerase I
   (b) Polymerase II
   c) Polymerase III
   d) All of these

Que 2- Attempt the following questions . (Any 10) **(20)**

1) **Draw the structure of Adenine & Thymine.**
2) **Write any two features of A- form of DNA.**
3) **Mention the auxillary proteins required by λ pI promoter & *E.coli* lac Promoter.**
4) **Give the contribution of :**
   a) Howard Temin b) Arthur Kornberg
5) **Define : a) Genetic code b) Nucleosome**
6) **Write the functions of :**
   a) DNA ligase b) Rho protein
7) **Name the structural genes of lactose operon.**
8) **Mention any one type of post translational modification.**
9) **Write the role of :**
   a) Transformylase b) Reverse gyrase
10) **Name the termination factors of protein synthesis in bacteria.**
11) **Write the full form of :**
   a) PCNA b) ATP
12) **What is klenow fragment?**

Que: 3 Discuss different types of RNAs. **(10)**

OR

Que: 3 (A) Discuss the experiments which were the basis in proving DNA as a genetic material. (06)

(B) Explain Watson & Crick's model of DNA. **(04)**

Que: 4 (A) Explain initiation of DNA replication in *E.coli*. **(05)**

(B) Discuss Meselson & Stahl's experiment. **(05)**

OR

Que: 4 (A) Discuss elongation of DNA synthesis in *E.coli* . **(06)**

(B) Explain rolling circle model of DNA synthesis. **(04)**

Que: 5 Explain initiation & elongation of transcription in *E.coli*. **(10)**

OR

Que: 5 Write notes on:

a) **RNA Splicing** **(07)**
b) **RNA dependent RNA synthesis** **(03)**

Que: 6 Discuss initiation & elongation of protein synthesis in prokaryotes. **(10)**

OR

Que: 6 Discuss the salient features of genetic code. **(10)**

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