

INTERNAL EXAMINATION  
SUBJECT - BIOTECHNOLOGY  
SUBJECT CODE -CC-I-8(502)  
PAPER 502 : MOLECULAR GENETICS

17/09/2017

[Marks 40

[1.45 to 3.45

**Q-1 MCQ**

**10 marks**

1. The X-ray diffraction studies conducted by \_\_\_\_\_ were key to the discovery of the structure of DNA  
A). McClintock B). Franklin C). Meselson and Stahl D). Chargaff
2. What do
3. Which of the followings does NOT telomeres do?  
A). They protects the chromosomes from degradation by nucleases.  
B). They prevents the ends of chromosomes from fusing with one another.  
C). They are required for complete chromosomal replication.  
D). All of these are correct
4. \_\_\_\_\_ need a primer in order to function?  
A) DNA Pol I B) DNA Pol II C) DNA Pol III D) RNA polymerase
4. Which of the following subunits of the bacterial RNA polymerase is responsible for promoter recognition?  
A) Alpha B) beta B) B' D) Sigma
5. Which of the followings is required for end to end joining of DNA  
A) DNA Pol I B) DNA ligase C) DNA Pol III D) RNA polymerase
6. What are the repeating units of nucleic acids?  
A). phosphate molecules B). Nucleotides C). bases D). Sugar molecules
7. The enzyme which builds a mRNA strand complimentary to the DNA transcription unit is called:  
A). DNA polymerase B). RNA polymerase C). Helicase D). DNA ligase
- 8)- Which of the following enzyme(s) can remove or insert supercoil twists into circular DNA?  
A) Topoisomerases B) DNA Pol II C) Spliceosomes D) Helicase
9. Nucleosomes

- A) Bind to RNA pol II
  - B) Package prokaryotic DNA
  - C) Are only present in prokaryotes
  - D) Are composed on an octamer of histones and ~150 bp of DNA
10. Which bond present in Nitrogen base and sugar linkage is
- A) Hydrogen
  - B) Glycosidic bond
  - C) Peptide
  - D) Covalent bond

**Q - 2 ANSWER THE FOLLOWING. (ANY FIVE) (30)**

- 1 Explain the Semi-conservative mode of replication
- 2 Explain Difference between prokaryotic and Eukaryotic DNA Replication
- 3 Explain Telomerase Replication
- 4 Explain the initiation of transcription in Eukaryotic cell
- 5 Describe the of Roll prokaryotic DNA polymerase
- 6 Explain the structure and forms of DNA