

**P. S. SCIENCE & H. D. PATEL ARTS COLLEGE, KADI**

Internal Examination

B. Sc. Semester - V

[Mark : 40

24-9-2016]

Biotechnology - 502

[2 Hours

Molecular Genetics

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Q-1. Answer the Following Question.

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- (1) Rifampicin antibiotics inhibit which process in tuberculosis treatment.
- (a) DNA Replication                      (b) Transcription  
(c) Translation                              (d) None
- (2) Enhancer regions in eukaryotic DNA are -
- (a) DNA Pol I binding sites  
(b) Inhibit the binding of repressor  
(c) Enhance the frequency of transcription  
(d) Specific for given set of genes.
- (3) In contrast of DNA polymerase, RNA polymerase
- (a) Fills in the gap between Okazaki fragments  
(b) Works only in 5' to 3' direction  
(c) Edits as it synthesizes  
(d) Synthesizes RNA primer to initiate DNA synthesis
- (4) DNA is replicated.
- (a) Conservatively                              (b) Distributively  
(c) Semi-conservatively                      (d) Dispersively
- (5) Telomerase does which of the following.
- (a) Joins Okazaki fragments on the lagging strand  
(b) Catalyzes DNA replication at the ends of chromosome  
(c) Enhances transcription  
(d) Requires dCTP

[P.T.O.]

(1)

- (6) Eukaryotic RNA polymerase I is specialized to transcribe which of the following ?  
(a) mRNA (b) tRNA  
(c) Ribosomal RNA (d) Mitochondrial RNA
- (7) The melting temperature of DNA is the temperature where :  
(a) DNA anneals to RNA (b) DNA denatures into single strands  
(c) DNA is degraded (d) RNA binds to the ribosome
- (8) DNA pol b is not involved in DNA replication (False/True)
- (9) Amanitin inhibit which type of RNA polymerase-  
(a) RNA polymerase (b) RNA polymerase II  
(c) RNA polymerase (d) All of the above
- (10) Synthesis of histones occurs during the G2 phase of Cell Cycle. (False/True)

**Q-2. ANSWER THE FOLLOWING. (ANY FOUR)**

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- (1) Explain Eukaryotic DNA polymerase and RNA polymerase Difference
- (2) Explain the Griffith Experiment
- (3) Explain Promoter region of Transcription process.
- (4) Write a note on Topoisomerase
- (5) Write the difference between prokaryotic and Eukaryotic DNA Replication.

**Q-3. ANSWER THE FOLLOWING. (ANY ONE)**

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- (1) Explain Telomerase Replication process in Eukaryotic cell with Diagram.
  - (2) Explain Replication process in Prokaryotic cell.
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