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

Internal Examination

B. Sc. Semester - V **[Mark : 40**

7-10-2015] **Biotechnology - 502** **[1-30 to 3-00**

Molecular Genetics

Q-1. Attend all questions. **10**

(1) RNA polymerase responsible the :

(a) Primer (b) Rho protein

(c) DNA Pol II (d) sigma subunit

(2) Subunit of RNA polymerase.

(a) 3 (b) 4 (c) 5 (d) 2

(3) In contrast to DNA polymerase III, DNA polymerase I

(a) Fills in the gap between Okazaki fragments

(b) Works only in 3' to 5' direction

(c) repair mechanism

(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 replicationg at the eneds of chromosome

(c) Enhances trascription

(d) Requires dCTP

(6) Eukaryotic RNA polymerase I is specialized to transcribe which of the following ?

(a) mRNA (b) tRNA

(c) Ribosomal RNA (d) Mitochnodrial RNA

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(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) Find the template sequence 5' AAACCGATTTAAC 3' ?
(a) DNA (b) RNA (c) mRNA (d) rDNA

(9) Which forms of DNA is most common in organism.
(a) A form (b) Z form
(c) B form (d) All of the above

(10) All are true for DNA polymerase exept one
(a) Has exonuclease activity
(b) Works only in 5' to 3' direction
(c) Edits as it synthesizes
(d) Synthesizes RNA primer to initiate DNA synthesis

Q-2. ANSWER THE FOLLOWING. (ANY FOUR) **20**

(1) Explain DNA components
(2) Explain the Griffith Experiment
(3) Explain type of RNA.
(4) Write a note DNA polymerase
(5) Write the difference between prokaryotic and Eukaryotic DNA Replication.

Q-3. ANSWER THE FOLLOWING. (ANY ONE) **10**

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