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SARDAR PATEL UNIVERSITY  
S.Y.B.Sc.4th SEMESTER EXAMINATION

9<sup>th</sup> April 2016, Saturday

10.30 AM to 1.30 PM

Concepts of Biology, US04CBIO 01

Total Marks-70

- Q.1 Multiple Choice Questions (one mark each) 10
- DNA is compacted to form \_\_\_\_\_.  
(a) chromosome (b) nucleus (c) gene (d) none
  - \_\_\_\_\_ is a giant chromosome.  
(a) Y chromosome (b) X chromosome (c) polytene chromosome  
(d) none
  - Centromere lies in \_\_\_\_\_ on telocentric chromosome.  
(a) one side (b) centre (c) top (d) bottom
  - Deoxyribose sugar is present in \_\_\_\_\_.  
(a) DNA (b) RNA (c) both (d) none
  - The four nucleotide bases are present in \_\_\_\_\_ proportions in DNA.  
(a) equal (b) unequal (c) specific (d) none
  - \_\_\_\_\_ enzyme unwinds the DNA in replication.  
(a) polymerase (b) helicase (c) ligase (d) topoisomerase
  - \_\_\_\_\_ joins the okazaki fragments.  
(a) polymerase (b) DNA helicase (c) ligase (d) topoisomerase
  - \_\_\_\_\_ enzymes carry out all forms of DNA replication.  
(a) DNA polymerase (b) helicase (c) ligase (d) topoisomerase
  - \_\_\_\_\_ transcribes the copy of DNA.  
(a) m RNA (b) t RNA (c) r RNA (d) none
  - Translation occurs in \_\_\_\_\_.  
(a) nucleus (b) cytoplasm (c) mitochondria (d) golgi body

Q.2 Answer any ten

- Write a note on acrocentric chromosome.
- What is a giant chromosome.
- What are sex chromosomes.
- Write down four nitrogenous bases present in DNA.
- Which are the four nitrogenous bases present in RNA?

20

- 6 What is RNA?
- 7 Discuss function of polymerase.
- 8 Write down function of DNA ligase.
- 9 Define leading strand.
- 10 What is role of m RNA in protein synthesis?
- 11 Explain role of tRNA in protein synthesis .
- 12 What is active amino acid?
- Q.3a. Write about polytene chromosome. 5
- b. Explain structure of chromosome. 5
- OR**
- Q.3a. Explain metacentric and telocentric chromosome. 5
- b. Write about the function of chromosome in detail. 5
- Q.4a. Explain Watson and Cricks model of DNA. 5
- b. Write a note on DNA. 5
- OR**
- Q.4a. Write a note on ribosomal RNA. 5
- b. Give structural formula of nitrogenous bases in DNA. 5
- Q.5a. Write a note on Okazaki fragments. 5
- b. Write about RNA polymerase and primase. 5
- OR**
- Q.5a. Give a detail note on lagging strand. 5
- b. Discuss role of DNA polymerase and single stranded binding proteins. 5
- Q.6. Write about Transcription of Protein synthesis in detail. 10
- OR**
- Q.6 . Explain Translation of protein synthesis in detail. 10

$$X = X = X$$

(2)