

**M. Sc. Bioinformatics Sem.-I (C.B.C.S.) (2013 Course) / Advanced  
Diploma in Bioinformatics Sem.-I (C.B.C.S.) (2013 Course) :  
WINTER - 2018  
SUBJECT: BASIC BIOSCIENCES**

Day : Saturday  
Date : 20/10/2018

**W-2018-1250**

Time: 10.00 AM TO 01.00 PM  
Max. Marks: 60

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**N. B. :**

- 1) **Q. No. 1 and Q. No. 5 are COMPULSORY.** Out of remaining attempt **ANY TWO** questions from each section.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Answers to both the sections should be written in **SEPARATE** answer books.
  - 4) Draw neat and labeled diagram **WHEREVER** necessary.
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**SECTION - I**

**Q. 1** Answer the following: **(10)**

- a) What is ligand gated channel?
- b) Define apoptosis and necrosis.
- c) What is role of S phase in cell cycle?
- d) Enlist different types of plastids with their role in plant.
- e) Enlist different forms of DNA with their respective functions.

**Q. 2** Answer **ANY TWO** of the following: **(10)**

- a) In brief describe the structure of endoplasmic reticulum.
- b) Give an overview of cytoskeleton and its functions during cell division.
- c) Explain the concept of repetitive sequences.

**Q. 3** Differentiate between **ANY TWO** of the following: **(10)**

- a) Prokaryotic cell and Eukaryotic cell
- b) Passive transport and Active transport
- c) DNA and RNA

**Q. 4** Describe in detail genetic code. **(10)**

**OR**

Give an account on all repetitive sequences present in human genome.

**P. T. O.**

## SECTION - II

**Q. 5** Answer the following: **(10)**

- a) Mention the types of DNA sequences present at Ori C region.
- b) What are leading and lagging strands?
- c) Define Non-sense mutation.
- d) Define Twisting number.
- e) Give two examples of structural distortions of DNA.

**Q. 6** Answer **ANY TWO** of the following: **(10)**

- a) Role of Okazaki fragment in DNA replication.
- b) Explain in brief types of mutation.
- c) Explain post-transcriptional modifications of mRNA in eukaryotes.

**Q. 7** Answer **ANY TWO** of the following: **(10)**

- a) Explain the Holiday model for homologous recombination.
- b) Explain the role of Cyclic-AMP and CAP in prokaryotic transcription regulation.
- c) Describe the mechanism of termination of replication in prokaryotes.

**Q. 8** Explain in detail DNA repair mechanism and their types. **(10)**

**OR**

Write a note on help of DNA polymerase and their role in replication.

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