M. SC. BIOINFORMATICS SEM.-I (C.B.C.S.) (2013 COURSE) / ADVANCED DIPLOMA IN BIOINFORMATICS SEM.-I (C.B.C.S.) (2013 COURSE) : WINTER - 2017

SUBJECT: BASIC BIOSCIENCES

Day : Friday
Date : 27/10/2017

W-2017-1006

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

N.B.:

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

SECTION – I

Q.1 Explain why? **[10]**

a) Mitochondria are known as power-house of a cell.
b) Signal IP is very useful for proteins.
c) Chargaff's rule could not be followed by many organisms.
d) Cytoskeleton is called as backbone of a cell.
e) Eukaryotic mRNAs are mostly polycistronic.

Q.2 Draw neat labeled diagrams of the following: **(ANY TWO)**: **[10]**

a) Prokaryotic and Eukaryotic cells **b)** Cytoskeleton types **c)** tRNA

Q.3 Write short notes on **ANY TWO** of the following: **[10]**

a) Cell cycle regulation
b) Eukaryotic cell structure
c) Prokaryotic cell structure

Q.4 Answer **ANY TWO** of the following: **[10]**

a) Explain in brief the discoveries related to hereditary material.
b) Explain different types of repetitive sequences with example.
c) What are interrupted, uninterrupted and overlapping genes? Explain their functions.

SECTION – II

Q.5 Define: **[10]**

a) Mendel's law of independent assortment
b) Twisting number
c) Euchromatin
d) Telomere
e) Genome

Q.6 Write short notes on **ANY TWO** of the following: **[10]**

a) Extra chromosomal inheritance
b) Chromosome banding
c) Histone proteins

Q.7 Answer **ANY TWO** in brief: **[10]**

a) Explain Holiday model of recombination with diagram.
b) Describe prokaryotic DNA replication process in brief.
c) State the molecular mechanisms of mutations with example.

Q.8 Explain in detail prokaryotic transcription. **[10]**

OR

Explain in detail Eukaryotic transcription.

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