**I Semester B.Sc. Examination, November/December 2014
(CBCS/NS) (70 – 2011-12 and Onwards) (60 – 2010-11 Only)
GENETICS – I
Fundamentals of Cell Biology**

Time : 3 Hours   Max. Marks : 70/60

Instructions : 1) Answers should be written **completely** either in **English** or **Kannada**.
2) Draw diagrams **wherever** necessary.
3) Section **A, B, C** and **D** : 70 marks for students of **CBCS – 2014** and **NS – 2011-12** and Onwards.
4) Section **A, B** and **C** : 60 marks for **repeaters** students of **2010-11 only**.

SECTION – A

I. Answer **any five** of the following :   (5×3=15)

   1) Write a note on working principle of fluorescent microscopy.

   2) Draw a neat labelled diagram of nucleus.

   3) Define cell senescence. Mention its causes.

   4) What are microvilli ? Mention their location and function.

   5) Differentiate dark field microscopy from bright field microscopy.

   6) Give a brief account of various components of Endoplasmic reticulum.

   7) With a neat labelled diagram explain metaphase of mitosis.

SECTION – B

II. Answer **any five** of the following :   (5×5=25)

   1) Describe the life cycle of neurospora.

   2) What is meiosis ? Summarise the major events of meiotic prophase.

   3) Give a brief account of synaptonemal complex.

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4) With reference to mitochondria, write a note on :

   a) Racker's particles.

   b) Enzymes of inner membrane.

5) Explain the various chemical components of plasma membrane.

6) "Drosophila is considered as cynderella of genetics". Justify.

7) With a neat labelled diagram describe the structure of centriole.

SECTION – C

III. Answer **any two** of the following :   (2×10=20)

1) Write an explanatory notes on :

   a) Principle of phase contrast microscope.

   b) Differences between Glass lenses and Electromagnetic lenses.

2) Write an explanatory notes on Kreb's cycle.

3) Explain :

   a) Genetic significance of Tobacco mosaic virus.

   b) Lysogenic cycle of E.Coli.

4) Give a detailed account of cytoskeletal structures.

SECTION – D
(Compulsory for CBCS - 2014 and NS – 2011-12 and Onwards students)

IV. Answer **any one** of the following :   (1×10=10)

1) Write notes on :

   a) Mitotic apparatus.

   b) Differences between mitosis and meiosis.

2) Explain :

   a) Structure of Golgi complex.

   b) Enzymes of lysosomes.