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First Year M. Pharm Degree Examination - Oct/Nov 2014

[Time: 3 Hours] [Max. Marks: 100]

Molecular Biology

(Revised Scheme 4)

Q.P. CODE: 9351

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

LONG ESSAY (Answer any TWO) **2 X 20 = 40 Marks**

1. Explain the different phases of cell cycle and factors regulating progression of cells at checkpoints.
2. a) Explain the extrinsic or death receptor pathway of apoptosis and factors simulating this pathway.
   b) Explain the medical applications of adult stem cells and embryonic stem cells.
3. a) Explain the mechanism of drug transport across the plasma cell membrane.
   b) Describe biosensors and their applications.

SHORT ESSAY (Answer any FIVE) **5 X 10 = 50 Marks**

4. Explain the principles and applications of MTT assay.
5. Explain gene therapy.
6. Explain the applications of flow cytometer and western blot unit in molecular studies.
7. Explain DNA based diagnosis of genetic diseases.
8. Explain the formation and uses of restriction fragment length polymorphism.
9. Explain applications of nucleic acid technologies and catalytic antibodies in molecular pharmacology.

SHORT NOTES **2 X 5 = 10 Marks**

10. Applications of microarray technology
11. Enzymes used in molecular cloning

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