M.Sc.-Biotech.-IVS-(4.2)

2015

Full Marks : **40**

Time : **2** Hours

*Answer any **four** questions from any one Group as per your Syllabus*
All questions carry equal marks

Group-A *(New Syllabus)*

(MEDICAL BIOTECHNOLOGY)

1. (a) Explain briefly the molecular process of muscle movement.

(b) What are free radicals ? Discuss briefly free radical biology.

2. (a) How does environment influence gene expression ? Explain briefly.

(b) Describe the molecular mechanism of erythropoesis.

3. (a) What is Hardy Weinberg's principle ? Elucidate its applications for auto somal genes.

(b) Describe the functional organization of centromers Add a note on application of centromere in Biotechnology.

4. (a) What are stem cells ? Explain the importance of stem cells in Medical Biotechnology.

(b) What are vaccines ? Discuss various approaches for development of vaccine.

5. (a) Write about different methods for development/Production of recombinant antigens ? Add a note on their application.

(b) What is AIDS ? Discuss the mode of infection of HIV.

(Turn over)

6. (a) What is Nanotechnology ? Discuss its applications in molecular medicine.
   (b) Discuss the social and ethical aspects of Medical biotechnology.

Group-A *(Old Syllabus)*

(ENVIRONMENTAL BIOTECHNOLOGY)

1. What is Pollution ? Write briefly on biotechnological monitoring of pollution.
2. Write short notes on the following :
   (a) Global Warming
   (b) Ecosystem
3. Briefly describe the anaerobic treatment of waste water and sewage sludge.
4. Write short notes on the following :
   (a) Bio-indicators of pollution
   (b) Green House Gas
5. What is Biosensor ? Write concise on the role of biosensor in environment monitoring.
6. Write short notes on the following :
   (a) Biogas
   (b) Xenobiotic compounds
7. What is bioremediation ? Write detailed account on the strategies and process of removal of heavy metalx and organic waste by this method.
8. Write short notes on the following :
   (a) IPR
   (b) Genetic resources.