

Code No: R07A12102

**R07**

**I B.Tech Examinations, May/June 2012**  
**FUNDAMENTALS OF BIOLOGY**  
**Bio-Technology**

**Time: 3 hours**

**Max Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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1. (a) Differentiate the mesonephric and metanephric kidneys.  
(b) What are the different types of development in Echinoderms?  
(c) Write short note on the external morphology of Asterias. [6+5+5]
2. Discuss on the transmission of smell signals into the central nervous system. [16]
3. How the endocrine system maintains homeostasis by the action of antagonistic hormones. Illustrate with an example. [16]
4. (a) Define systemic botany? What are the objectives of classification?  
(b) Discuss four types of classification and explain in detail.  
(c) What are the objectives, goals and aim of plant systematics? [6+5+5]
5. Explain the mechanisms of replication of DNA viruses. [16]
6. What is the precise role of oxygen in microorganisms? [16]
7. What is the Calvin cycle and what is its relationship to autotrophy? What is the key enzyme involved in autotrophic CO<sub>2</sub> fixation in most organisms? [16]
8. Plants as a source of drugs. Discuss in detail. [16]

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