

Code No: 09A1BS06

R09

Set No. 2

I B.Tech Examinations, December 2010
FUNDAMENTALS OF BIOLOGY
Bio-Technology

Time: 3 hours

Max Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1. Draw the life cycle of Plasmodium sps. in humans and explain the pathology of infection from this parotozoan. [15]
2. Explain photochemical reaction centres in photosynthesis. [15]
3. What are the most significant differences between prokaryotic and eukaryotic cells? [15]
4. Give an account of microbial enzymes and biotransformation. [15]
5. Describe the ear in general terms and elaborate on the structural components of the outer ear and inner ear and their functions. [15]
6. What are endocrine glands of our body and give their functions in brief. [15]
7. When an RNA virus infects its host whose genome is made of DNA, explain how the infection is possible? What are the mechanisms involved in successfully integrating the viral genome into host. [15]
8. Explain the general structure and life cycle of Bryophytes. [15]

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Time: 3 hours

Max Marks: 75

Answer any FIVE Questions
All Questions carry equal marks
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1. Discuss action potential in detail. [15]
2. Compare and contrast cyclic and non cyclic electron transport. [15]
3. What are the factors affecting population density in an ecosystem? Explain. [15]
4. (a) Write about the medicinal importance of plants.
(b) Discuss the industrial products derived from plants. [8+7]
5. Give the composition of blood and describe its function. [15]
6. Write short notes on the following:
 - (a) Microbial enzymes
 - (b) SCP
 - (c) Gene therapy. [5+5+5]
7. Explain about the processes taking place during an mRNA synthesis from a dsDNA. [15]
8. Give a list of harmful microorganisms and briefly write about some of the common diseases they cause in other organisms. [15]

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1. (a) Give a brief account on kingdom fungi.
(b) Write briefly about Kingdom plantae. [7+8]
2. Discuss the mechanism of CO₂ fixation in C₃ plants. [15]
3. Explain the structure and function of adrenal glands. [15]
4. Define growth? Explain in detail how the plants attain proportionate growth of all its parts? [15]
5. Explain the structure of phylum vertebra and dwell on the role of different skeleton found in these animals. [15]
6. Give an account on physiology of vision. [15]
7. How are recombinant organism developed? Describe the techniques involved in successfully producing one. [15]
8. What are biopesticides? What is their mechanism of action on pests? Discuss citing suitable bacterial and fungal examples. [15]

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1. (a) Differentiate Allopatric and Sympatric speciation.
(b) What are pre- and post-zygotic mechanisms of reproductive barrier? [8+7]
2. Describe the mechanism of CO₂ fixation in CAM plants. [15]
3. Write short notes on the division:-
(a) Eumycota
(b) Cyanophyta
(c) Bryophyta
(d) Pteridophyta. [15]
4. Explain
(a) Nuclear membrane
(b) Plasma membrane. [8+7]
5. Enumerate on
(a) Functional anatomy of cochlea
(b) Transmission of sound waves in cochlea. [7+8]
6. "The DNA molecule is found in different forms" -Explain the types of DNA with neat diagrams. [15]
7. Write in detail about the five-kingdom classification. What was the basis for its classification? [15]
8. Discuss in detail about Monoclonal antibody therapy. [15]

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