

Code No: 09A1BS06

**R09**

**Set No. 2**

I B.Tech Regular Examinations, JUNE 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. Write short notes on:-
  - (a) binary fission
  - (b) endospore
  - (c) transformation
  - (d) conjugation. [15]
2. Bacterial and Plant Photosynthesis- Differentiate between them and discuss. [15]
3. (a) Describe the basic characteristics of nerve tissues.  
(b) How does a tissue can be classified? Discuss each one in briefly. [7+8]
4. Systematically describe on the main events occurring during DNA replication in a eukaryote. [15]
5. Describe in detail the structure and functions of ecosystem. [15]
6. 'Will the development and use of genetically engineered organisms reduce natural genetic diversity'- discuss. [15]
7. What are the living organisms that are classified under division Eumycota? Explain the uses of the species falling under this division in industrial biotechnology? [15]
8. Describe the olfactory area in the nose with the help of a diagram and explain the mechanism of olfaction. [15]

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Max Marks: 75

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1. Compare and contrast CO<sub>2</sub> fixation in C<sub>3</sub> and C<sub>4</sub> plants. [15]
2. Explain the term 'Alternation of generation' and discuss about it in Funaria. [15]
3. Discuss action potential in detail. [15]
4. Describe the kingdom Monera and give its characteristic features. [15]
5. Explain the structure of phylum vertebrata and dwell on the role of different skeleton found in these animals. [15]
6. Classify the blood cells and indicate their cells functions with neat diagram. [15]
7. How can transgenic animals be used to produce drugs and chemicals of importance? [15]
8. What is meant by the term "Transcription of DNA"? Describe the step-wise process involved in this process. [15]

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1. Write about Vertebrate classification. Citing important characteristics. [15]
2. Explain the semi-conservative model of replication process of DNA supported by the classical experimental evidence. [15]
3. Elucidate the salient features of Bryophyta and briefly explain the life cycle of these organisms with an example. [15]
4. Write short notes on
  - (a) Retina
  - (b) mechanism of hearing
  - (c) Microscopic feature and anatomy of smell
  - (d) Functional anatomy of tongue for taste. [15]
5. What is a virus? Explain the structure and function of virus with an example. [15]
6. Write short notes on any TWO of the following:
  - (a) GM foods
  - (b) Biosensors
  - (c) Plantibodies. [7+8]
7. Describe the mechanism of coagulation of blood. What are anticoagulants and name the few of them. [15]
8. Enumerate on the main parts of the aerobic respiration pathway. Which of these three parts yields the most ATP? [15]

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1. Discuss the following
  - (a) Factors influencing the speed of impulse conduction
  - (b) RMP. [7+8]
2. What is SCP? How is it produced? What are the advantages of SCP? [15]
3. What are antagonistic hormones? Enumerate on the glands that are responsible for homeostasis. [15]
4. Describe the following
  - (a) Effect of internal factors on the rate of photosynthesis
  - (b) Effect of temperature on photosynthesis.
  - (c) Explain assimilatory power. [ 7+4+4 ]
5. Write short notes on:-
  - (a) Binomial Nomenclature
  - (b) Trinomial Nomenclature
  - (c) Prokaryotes
  - (d) Unicellular and multicellular organisms. [15]
6. "The DNA molecule is found in different forms" -Explain the types of DNA with neat diagrams. [15]
7. Explain classification of plant kingdom and their characteristics features. [15]
8. How different is an aquatic ecosystem from terrestrial ecosystem? What are the characteristic features of the aquatic ecosystem? [15]

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