

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY: PATIALA

B. Tech. (Biotechnology) 2nd Year

End-Semester Examination, December 2006

BT- 001 : BIOLOGY

Time : 3 hrs.

Instructor : Dr. M. Anand

MM : 36

Note:

- First & Second questions are compulsory. Do any three out of the remaining five questions.
- All parts of the same question should be strictly at the same place.
- The evaluated answer sheets can be seen on 14.12.2006 in DBTES at 12.00 noon.

- Make a list of 7 pairs of contrasting traits selected by Mendel for breeding experiments. 1.75
 - Define & Discuss the Mendel's law of segregation & independent assortment. 6.0
- Along with suitable diagrams, explain the 3 basic body plans in animals. 3.0
 - Give reasons for the dominance of seed plants on earth's surface. 2.5
 - Why are bryophytes called the amphibians of plant kingdom? 1.75
- Tabulate the differences between green, brown and red algae. 3.0
 - Differentiate between vegetative and reproductive phases of fungi. 1.5
 - Give the scientific names of species of algae which (i) is rich in proteins (ii) is edible (iii) source of Agar-2 (iv) source of bromine or iodine (v) is parasite on tea and coffee 2.5
- Differentiate between eukaryotic and prokaryotic cells. 2.0
 - With the help of a series of neat and well labelled diagrams, explain the process of mitosis. 5.0
- Why are arthropods the most successful land animals? 2.0
 - What are the main differences between dicots and monocots? 2.0
 - Name two animal like characters of fungi. 1.0
 - Distinguish between oviparous and viviparous animals. 2.0
- Name the various components of xylem & phloem tissues. Give an illustrative account of vessels and sieve tubes. 4.5
 - What is collenchyma? Explain its structure and functions in a plant body. 2.5
- Give the importance of sodium chloride in a living system. 2.0
 - With the help of a diagram, describe different types of lysosomes and their functions. 3.0
 - Match the following cellular organelles with their functions. 2.0

Organelles	Functions
A) RER	1. _____ Synthesize proteins to be used inside the cell.
B) SER	2. _____ Synthesize proteins to be used outside the cell.
C) Golgi complex	3. _____ Assembles ribosomes
D) Lysosomes	4. _____ synthesize lipids
E) Free ribosomes	5. _____ moves materials out of the cell.
F) Bound ribosomes	6. _____ makes ATP
G) Nucleolus	7. _____ converts cellular polymers to monomers
H) Mitochondria	8. _____ seats of proteins synthesis.
