



B.TECH DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2009)

Second Semester

BIOTECHNOLOGY

BTY101: Basic Biology and Genetics

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

- Which of the following is a correct sequence of levels in life's hierarchy, proceeding downward from an individual animal?
 - organ system, nervous tissue, brain
 - organism, organ system, tissue, cell, organ
 - nervous system, brain, nervous tissue, nerve cell
 - organ system, tissue, molecule, cell
- Which of the following is *not* an observation or inference on which Darwin's theory of natural selection is based?
 - Poorly adapted individuals never produce offspring.
 - There is heritable variation among individuals.
 - Because of overproduction of offspring, there is competition for limited resources.
 - A population can become adapted to its environment overtime.
- Which of the following involves metabolic cooperation among prokaryotic cells?
 - binary fission
 - biofilms
 - endospore formation
 - endotoxin release
- Bacteria perform the following ecological roles. Which role typically does *not* involve symbiosis?
 - skin commensalist
 - decomposer
 - pathogen
 - methane-consuming archaea
- Which structure is *not* part of the endomembrane system?
 - nuclear envelope
 - plasma membrane
 - chloroplast
 - Golgi apparatus
- Which structure is common to plant *and* animal cells?
 - chloroplast
 - mitochondrion
 - centriole
 - vacuole

23. a) Draw and give the functions of Chloroplast, Golgi apparatus and ribosomes.

(OR)

b) Describe about mitotic cell division.

24. a) What are the laws of inheritance? Explain about them in detail.

(OR)

b) i) What are test cross and back cross? (4)

ii) Detail the significance of linkage and crossing over. (10)

25. a) Elucidate the genome organization in prokaryotes.

(OR)

b) i) Elaborate about polytene chromosome. (7)

ii) Sketch about lamp brush chromosome. (7)
