



B.TECH DEGREE EXAMINATIONS: JUNE 2015

(Regulation 2009)

Third Semester

BIOTECHNOLOGY

BTY104: Cell Biology

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Nucleosomes are usually linked together to form regular higher order structures by protein
 - a) H1
 - b) H2A
 - c) H2B
 - d) H3
2. The protein sorting station of a cell is the _____
 - a) Proteosome
 - b) Golgi complex
 - c) Nucleus
 - d) Endoplasmic reticulum
3. The technique usually used to study whole cells and tissues rather than sub-cellular organelles
 - a) Scanning electron microscope
 - b) Phase contrast microscope
 - c) Freeze fracture
 - d) Transmission electron microscope
4. Virus-free plants can be obtained by using as an explant
 - a) Leaf bit
 - b) Shoot tip
 - c) Node
 - d) Endosperm
5. All V-class ATPases transport ions only.
 - a) Ca^{2+}
 - b) Na^{+}
 - c) K^{+}
 - d) H^{+}
6. The pump that converts ADP to ATP is termed as a _____
 - a) ABC pump
 - b) V pump
 - c) P pump
 - d) F pump
7. Cell-cell junctions in plants are called as _____
 - a) Plasmodesmata
 - b) WAK's
 - c) Hemicellulose
 - d) Desmotubule
8. Which of the following organelles is known as "Power House of the Cell"?
 - a) Mitochondria
 - b) Chloroplast

- (ii) Give a detailed account on the mechanism of Na^+ / K^+ oriented pumps in the transportation of glucose. (10)

(OR)

- b) (i) Give the importance of passive diffusion. (4)
(ii) Explain the ATP synthase multienzyme complex as an example for ATP dependent proton pump. (10)

24. a) (i) Write a short on adhesion junctions. (4)
(ii) Describe cytoskeletal proteins and their role in cellular organization. (10)

(OR)

- b) (i) List out the functions of kinesin and dyenin. (4)
(ii) Explain briefly on polymerization dynamics of tubulin. (10)

25. a) (i) What is an autocrine signaling? (4)
(ii) Explain the role of G proteins via cGMP as secondary messenger with an example. (10)

(OR)

- b) (i) Explain the role of calcium ions in signal transduction. (4)
(ii) Describe the functions of tumor necrosis factor receptor families in cell signaling. (10)
