

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.E. Sem-III (Biotechnology) Examination December 2009**

**Subject code: 130402**  
**Date: 19/12/2009**

**Subject Name: Cell Biology**  
**Time: 11.00 am – 1.30 pm**

**Total Marks: 70**

**Instructions:**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**

- Q.1** (a) Write a short note on Dark reaction. **07**  
(b) Write an account on solenoid model for organization of eukaryotic chromosome **04**  
(c) Explain “Prokaryotic Cells Are Structurally Simple but Biochemically Diverse” **03**
- Q.2** (a) Explain the process of active transport through plasma membrane with suitable illustrations. **07**  
(b) Discuss structural differentiation of plant cell wall. **07**
- OR**
- (b) Compare 70S and 80S Ribosomes. **07**
- Q.3** (a) Write a short note on Nucleolus. **07**  
(b) Explain sliding filament hypothesis of ciliary movement. **04**  
(c) Write a short note on structure and function of glycocalyx **03**
- OR**
- Q.3** (a) Explain the process of formation of endospore with neat diagram. **07**  
(b) Discuss types of endoplasmic reticulum. **04**  
(c) Draw a neat and labeled diagram of typical animal cell. **03**
- Q.4** (a) Write an account on function of peroxisomes **07**  
(b) Explain molecular organization of thylakoid. **07**
- OR**
- Q.4** (a) Discuss functions of cytoplasmic microtubules. **07**  
(b) Explain compartmentalization of Golgi apparatus. **07**
- Q.5** (a) What is plasmid? Explain types of plasmids found in various bacteria. **07**  
(b) Explain briefly structural organization of mitochondria. **07**
- OR**
- Q.5** (a) What are the main functions of basal bodies and centrioles? **07**  
(b) Describe the process of autophagy. **07**

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