

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-III Examination May 2012****Subject code: 130301****Subject Name: Life Science – 1****Date: 10/05/2012****Time: 02.30 pm – 05.00 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) Define different body planes with sketch. List the anatomical directional terms with examples. **07**
- (b) What is homeostasis? Discuss the potential consequences of homeostatic imbalance. **07**
- Q.2** (a) Compare and contrast active, passive and bulk transport of substances across cell membranes. **07**
- (b) Discuss the role of platelets in blood clotting and explain the haemostasis. **07**
- OR**
- (b) Describe the structure of plasma membrane and outline the process of mitosis. **07**
- Q.3** (a) Describe the principal lung volumes and capacities. **07**
- (b) Compare the processes of internal and external respiration, using the concept of diffusion of gases. Describe O₂ and CO₂ transport in the blood. **07**
- OR**
- Q.3** (a) Describe the location and gross anatomy of the lungs. **07**
- (b) Identify the functions of pleura. **07**
- Q.4** (a) Describe the main control mechanisms for regulation of blood pressure. **07**
- (b) Relate the electrical activity of the cardiac conduction system to cardiac cycle. **07**
- OR**
- Q.4** (a) Describe the structure of heart and its position within the thorax. **07**
- Q.4** (b) Differentiate pulmonary, systemic and coronary circulation. **07**
- Q.5** (a) List the types of bones with example. Give the general structure of long bone. What are the functions of bones? **07**
- (b) List the different types of synovial joints. Describe the structure and functions of typical synovial joint. **07**
- OR**
- Q.5** (a) Explain the physiology of sight and list the refractory errors. **07**
- (b) Explain the physiology of taste. **07**

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