

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

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

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**B.PHARM - SEMESTER- 1 EXAMINATION – SUMMER -2019****Subject Code: 2210004****Date: 06-06-2019****Subject Name: Human Anatomy Physiology - I****Time: 10:30 AM TO 01:30 PM****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain a molecular structure of cell membrane with labeled diagram. **06**  
(b) Explain immunity. Write a note on cellular and humoral immunity. **05**  
(c) Write a note on extra-cellular and intra-cellular fluids and their composition. **05**
- Q.2** (a) Enlist transporter mechanisms across cell membrane. Write a note on active transport mechanism. **06**  
(b) Write a note on mitochondria and nucleus with labeled diagram. **05**  
(c) Explain the structure and functions liver and pancreas. **05**
- Q.3** (a) Explain the protein synthesis in detail. **06**  
(b) Classify joints. Write a short note on synovial joint. **05**  
(c) Explain the vertebral column in detail. **05**
- Q.4** (a) Classify the elementary tissues of the body. Write a note on muscular tissue. **06**  
(b) Write a note on general functions of blood. **05**  
(c) Explain (i) osteoporosis (ii) arthritis (iii) myasthenia gravis **05**  
(iv) anaemia (v) haemophilia
- Q.5** (a) Explain the neuromuscular junction. Write a note on physiology of muscle contraction. **06**  
(b) Write a note blood groups and their significance. **05**  
(c) Explain blood clotting mechanism. **05**
- Q.6** (a) Explain the composition, formation, circulation and functions of lymph. Write a note on spleen. **06**  
(b) Draw a labeled diagram of internal structure of heart. **05**  
(c) Explain the cardiac cycle in detail. **05**
- Q.7** (a) Explain about blood pressure and renin angiotensin aldosterone system. **06**  
(b) Explain the digestion of food in small intestine **05**  
(c) Explain (i) hypertension (ii) atherosclerosis (iii) peptic ulcer **05**  
(iv) hepatitis (v) angina

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