

**N.B.:** (1) Solve any **four** questions out of six questions.

(2) Assume **data** wherever **required**.

(3) Figures to the **right** indicate **full** marks.

(4) Use **legible** handwriting.

1. (a) What is Monosynaptic Reflex arc. 5  
 (b) Nernst Equation for K<sup>+</sup> ion. 5  
 (c) What is Surfactant. 5  
 (d) What is Fick's principle ? 5
  
2. (a) Explain Cardiac Output in detail and the factors that affect Cardiac Output. 10  
 (b) Explain in detail the Sliding Filament Theory. 10
  
3. (a) Describe the formed elements in blood and its functions. Also comment on Blood Groups 10  
 (b) Explain the parts of the Brain, Generation of Cerebrospinal fluid and its functions. 10
  
4. (a) Explain in detail ECG waveform, also explain the Lead system 10  
 (b) Explain the various Endocrine glands, their secretion and function 10
  
5. (a) .What are Ascending tracts? Comment on any one ascending tract 10  
 (b) What is Spirometry? Explain the various Lung volumes and Capacities 10
  
6. Write short note (any four) 20
  - (a) Functions of Golgi Apparatus and Mitochondria
  - (b) Systemic and Pulmonary Circulation
  - (c) Active Transport Mechanism
  - (d) Fluid Mozaic Model
  - (e) Cardiac Arrhythmias