The questions carry equal marks. Answer ALL of them.

1. Describe the ionic fluxes during an action potential of a neuron.

2. Describe how the body handles lactic acidosis after strenuous exercises.

3. Briefly explain what would happen to the content of a unit of 30 days old stored whole blood.

4. Describe the second messenger systems and their importance in cellular physiology.

5. Define compliance. Describe a method to measure the static compliance of the respiratory system in a spontaneous breathing person and briefly state its problems.

6. Briefly comment on the factors affecting the peak inspiratory pressure during positive mechanical ventilation.

7. Discuss the factors that determine myocardial oxygen supply.

8. Outline the non-respiratory functions of the lung.

9. Briefly illustrate with diagrams the devices that are available for measuring expired gas volumes.

10. Describe the compensatory mechanisms that come into play following significant haemorrhage of acute onset.

11. Give an account of the physiological actions of insulin.