

**M.D. DEGREE EXAMINATION
BRANCH V – PHYSIOLOGY**

**PAPER II – CIRCULATION, RESPIRATION, ENVIRONMENTAL
PHYSIOLOGY, COMPARATIVE PHYSIOLOGY AND EXCRETION**

Q.P. Code: 202019

Time : Three Hours

Maximum : 100 Marks

I. Essay Questions:

(2 x 15 = 30)

1. a) Explain how electrical activity is spontaneously generated and conducted within the heart?
b) Compare ventricular action potential and pacemaker Potential.
c) What is artificial pacemaker?
2. a) Describe the neural and b) chemical control of respiration.
c) What is pre-Botzinger complex?
d) Explain the control of breathing during breath holding.

II. Short notes:

(10 x 5 = 50)

1. Special features of Renal circulation.
2. Significance of plateau portion of oxy haemoglobin dissociation curve.
3. Decompression sickness.
4. Lung compliance.
5. Role of Kidney in regulating pH of body fluids.
6. The 'Last ditch stand' Arterial pressure control mechanism.
7. Tubular maximum for glucose T_mG.
8. Mechanism of sweat secretion.
9. Juxta Glomerular Complex.
10. Micturition reflex.

III. Reasoning Out:

(4 x 5 = 20)

1. The pressure gradient in the pulmonary circulatory system is much less than that in the systemic circulation.
2. Subendocardial portion of left ventricle is the most common site of Myocardial infarction.
3. Body fluids are good conductors of electricity.
4. Recirculation of urea contributes to medullary hyperosmolarity.
