

**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) What are the effects of hydrostatic pressure gradients in the lungs on Regional pulmonary blood flow?
b) What are the effects of gravity on Ventilation and on ventilation perfusion ratio?
2. a) Explain the counter current multiplier mechanism.
b) What is the role of Vasa recta?
c) What would be the urine Osmolarity if a child was born with an ascending limb of Henle that was water permeable.

II. Short notes:

(10 x 5 = 50)

1. Regulation of renal blood flow.
2. Cheyne stokes respiration.
3. Nerve supply of urinary bladder.
4. Einthoven's triangle and Einthoven's law.
5. Factors causing turbulent blood flow.
6. Pressure buffer function of Baroreceptor control system.
7. Role of skin in temperature regulation.
8. Significance of FVC-Forced Vital Capacity and FEV –Forced Expiratory Volume.
9. Regulation of coronary blood flow.
10. Acute Mountain sickness.

III. Reasoning Out:

(4 x 5 = 20)

1. How are the excess Hydrogen ions secreted by renal tubular cells excreted?
2. Frank-Starling mechanism is independent of extrinsic nervous control.
3. Ventricular contraction and ejection are somewhat asynchronous.
4. Hering-Breuer reflex doesn't play any regulatory role in normal ventilation.
