

[LD 503]

NOVEMBER 2013

Sub. Code : 4054

FIRST M.B.B.S. DEGREE EXAMINATION**PAPER IV – PHYSIOLOGY INCLUDING BIO-PHYSICS – II***Q. P. Code : 524054***Time : 180 Minutes****Maximum: 50 Marks**Answer **ALL** questions**I. Elaborate on:****(2 x 7.5 = 15)**

1. Define the term Blood pressure. Discuss the determinants and regulation of blood pressure.
2. Trace the pathway for perception of pain. Discuss the descending pain modulatory pathways. Discuss the terms 'Gating of pain' and 'Referred pain'.

II. Write notes on:**(10 x 2.5 = 25)**

1. Ionic basis of the pace-maker potential.
2. Windkessel effect of aorta.
3. Illustrate with a diagram, the left ventricular volume and pressure changes during a cardiac cycle.
4. Role of myelin sheath in conduction of nerve impulse.
5. Functions of hypothalamus.
6. Clinical features of cerebellar lesions.
7. Physiological roles of muscle spindle.
8. Chemical regulation of respiration.
9. Hamburger's chloride shift.
10. Role of surfactant in pulmonary function.

III. Short Answers on:**(10 x 1 = 10)**

1. List the calcium transporters on the sarcoplasmic reticular membrane in the ventricular Muscle.
2. State Starling's law of the heart.
3. What is the effect of 2,3 diphosphoglycerate on the oxygen-hemoglobin dissociation curve? Does it help in loading or unloading of oxygen?
4. What are the types of hypoxia?
5. Region of the cochlea which vibrates most for the highest sound frequency in the audible range.
6. Visual field defect when the optic chiasma is cut in the centre.
7. State the refractive error in astigmatism. How is it corrected?
8. What is 'Blind spot'?
9. Receptors for vestibular sensation.
10. Name of tracts made up by second order neurons in the pathway for
(a) fine touch (b) pain.