

M.Sc. 3rd Semester Examination, 2011

PHYSIOLOGY

(Human Physiology)

PAPER—PHY-303

Full Marks : 40

Time : 2 hours

*The figures in the right-hand margin indicate marks
Candidates are required to give their answers in their
own words as far as practicable*

Illustrate the answers wherever necessary

UNIT – 29

Answer any two questions

1. (a) Differentiate between 'nutritional flow' and 'shunt flow'.
- (b) "Thin walled capillaries can withstand high internal pressures without getting ruptured."
Justify it. 4 + 6

2. (a) How does nitric oxide (NO) play key role in smooth muscle relaxation of endothelium? What is endothelin-1?
- (b) What is reactive hyperemia? State it with a proper experiment. (4 + 1) + (2 + 3)
3. (a) Discuss briefly the central and peripheral chemoreceptors.
- (b) Write on the mechanism of adjustment of ventilation in response to changes in chemical factors (increase of PCO_2 /decrease of PO_2) in the blood. 4 + 6
4. (a) What is the main determinant of lung resistance? State why.
- (b) Write on the physiological and pathological factors that increase or decrease the airway resistance.
- (c) Discuss the major pathophysiological changes in chronic pulmonary emphysema. 2 + 4 + 4

UNIT – 30

Answer any *two* questions

1. How osmotic concentration regulates ADH secretion ? Describe the role of ADH to produce hypertonic urine ? What is nephrogenic diabetes insipidus. 4 + 4 + 2
 2. Discuss the factors that control plasma cholesterol levels. Write on the possible mechanism of formation of gall bladder stone. 6 + 4
 3. Describe the cell-based model of blood coagulation with diagram. How prolonged exposure of sound can affect anticlotting system ? What is thrombomodulin ? 5 + 4 + 1
 4. Discuss the structure of nicotinic receptors in autonomic ganglia. How ganglionic transmission differs from neuromuscular transmission ? 5 + 5
-