

2008

**HUMAN PHYSIOLOGY**

PAPER— XV

*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 whenever necessary*

**Write the answers Questions of each Unit  
in separate books**

UNIT— 29

Answer any *two* of the following questions

1. What is 'transmembrane potential'? Mention the types of principal of cardiac action potential. Describe the changes in transmembrane potential recorded from a fast-response and a slow-response cardiac fibre in isolated cardiac tissue. 2 + 3 + 5

(Turn Over)

2. (a) How does transmural pressure influence the vasomotion ?
- (b) Differentiate between 'nutritional flow' and 'shunt flow'.
- (c) Thin-walled capillaries can withstand high internal pressures without bursting. Explain it by the law of Laplace.  $3 + 3 + 4$
3. (a) Elaborate the mechanism of endothelium and non-endothelium-mediated vasodilation.
- (b) Describe the flow-and diffusion-limited transport from capillaries. What is reflection co-efficient ?  $4 + 4 + 2$
4. (a) Discuss the process of respiration in prenatal with suitable diagram.
- (b) Describe how it changes just after birth.  $6 + 4$

UNIT—30

Answer any *two* questions

1. (a) Discuss the structure, location and function of ionotropic receptors in autonomic nervous system.

- (b) What do you mean by enteric nervous system? 8 + 2
2. (a) What are "Reactive Oxygen Species"?
- (b) Why nitrogen monoxide is known as free-radical?
- (c) Discuss how catalase functions as antioxidant. 3 + 2 + 5
3. Describe briefly about the function of atrial receptors in special reference to the blood volume regulation. Discuss the relationship between compensatory and decompensatory mechanisms that come into action during hemorrhage. 6 + 4
4. (a) Describe the basic mechanism of sodium reabsorption from proximal tubule with a diagram.
- (b) Write a note on urodilatin and adreno medullin. 5 + 5
-