

## FIRST PROFESSIONAL M.B.B.S. DEGREE EXAMINATION, MAY/JUNE 2012

## PHYSIOLOGY—Paper I

(New Scheme)

Time : Three Hours

Maximum : 50 Marks

*Answer Sections A and B in separate answer-books.**Draw diagrams wherever necessary.***Section A**

- I. Multiple Choice Questions (single response type - 10, separate sheet attached). (10 × ½ = 5 marks)
- II. A 40 year old man came to the O.P. with complaints of low grade fever, yellowish discoloration of sclera, loss of appetite and general tiredness. On investigation – S. bilirubin – 8 mg %  
Urine bilirubin – absent.
- (a) Identify the probable condition.
  - (b) Give the reason for the yellowish discoloration.
  - (c) Outline the physiological basis of the investigation findings.
  - (d) Can such a condition occur in new born children. If yes, give details.
- (1 + 2 + 3 + 4 = 10 marks)
- III. Explain the physiological basis of :
- (a) Humoral immunity.
  - (b) Resetting of sino-aortic reflex.
  - (c) Waves in aVR inverted in normal ECG.
  - (d) Cheyne–Stokes respiration.
  - (e) Osmotic diuresis.

(5 × 2 = 10 marks)

**Section B**

- IV. (a) Explain the factors maintaining venous return at rest and during exercise. (5 marks)
- (b) What is enterohepatic circulation ? Give *two* examples with the significance. (5 marks)
- V. Write briefly on :—
- (a) Factors governing Gastric emptying.
  - (b) Facultative reabsorption of water.
  - (c) Adverse effects of excess oxygen in the body.
  - (d) Two examples of operation of law of Laplace in the body.
  - (e) Salient features of coronary circulation.

(5 × 3 = 15 marks)

## I. MULTIPLE CHOICE QUESTIONS

(New Scheme)

**Note.**—(1) *Do not write anything on the question paper.*

(2) *Write your register number on the answer-sheet provided.*

(3) *Select the appropriate answer and encircle the alphabet against each question number in the answer-sheet provided.*

(4) *In the answer-sheet enter the total number of your answers in the appropriate box provided.*

(5) *Each question carries ½ mark.*

1. The volume of air in the lungs at the end of a normal expiration is :
 

(A) Total lung capacity.	(B) Functional Residual capacity.
(C) Expiratory Reserve volume.	(D) Residual volume.
2. The defense in tonicity of ECG is primarily the function of :
 

(A) Water intake.	(B) ADH and thirst mechanism.
(C) Renin-Angiotensin System	(D) Salt intake
3. The most important determinant of ECF volume is \_\_\_\_\_ ions.
 

(A) Chloride.	(B) Sodium.
(C) Bicarbonate.	(D) Sodium and Chloride.
4. During spinal shock, the bladder is :
 

(A) Flaccid.	(B) Flaccid and unresponsive.
(C) Distended.	(D) Flaccid and responsive.
5. The stage at which breathing can no longer be voluntarily inhibited is the :
 

(A) Closing volume.	(B) Asphyxia.
(C) Breaking point.	(D) Explosive decompression.
6. Surfactant in the lungs reduce the alveolar surface tension by \_\_\_\_\_ mm. of Hg.
 

(A) 10.	(B) 50.
(C) 20.	(D) 30.
7. An increase in GFR is caused by an increase in :
 

(A) Capillary oncotic pressure.	(B) Capillary hydrostatic pressure.
(C) Capsular hydrostatic pressure.	(D) Interstitial osmotic pressure.

8. Clinically used coagulation test during anticoagulant therapy is :
- (A) Clotting time. (B) Prothrombin time.  
(C) Bleeding time. (D) Clot retraction time.
9. Fluctuations in parasympathetic output to heart cause.
- (A) Sick sinus syndrome. (B) Sinus rhythm.  
(C) Premature beat. (D) Sinus arrhythmia.
10. In kidney, Angiotensin II primarily acts on :
- (A) Efferent arteriole. (B) Afferent arteriole.  
(C) Vasa recta. (D) Renal artery.

(10 × ½ = 5 marks)