



Name :

Roll No. :

Invigilator's Signature :

CS/B.OPTM/SEM-1/BO-102/2012-13
2012
PHYSIOLOGY (GENERAL)

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :
10 × 1 = 10

- i) A healthy R.B.C. should be
 - a) nucleated
 - b) biconcave
 - c) bigger than a monocyte
 - d) biconvex.
- ii) Group *B* blood contains
 - a) agglutinin *A* in the RBC and agglutinin α in the plasma
 - b) agglutinin *B* in the RBC and agglutinin α in the plasma
 - c) agglutinin *A* in the RBC and agglutinin β in the plasma
 - d) agglutinin *B* in the RBC and agglutinin β in the plasma.



- iii) In the adults plasma protein originates from
- a) mesenchymal cells b) liver
c) kidney d) bone marrow.
- iv) QRS complex of ECG represents
- a) atrial depolarization
b) atrial repolarization
c) ventricular depolarization
d) ventricular repolarization.
- v) A heart rate is designated as bradycardia when it is
- a) < 72/min b) < 60/min
c) < 50/min d) < 40/min.
- vi) An adult non-pregnant female is diagnosed as anemic when her Hb concentration is
- a) below 10.2 gm % b) below 8.1 gm %
c) below 11.8 gm % d) below 14.5 gm %.
- vii) In adults the average Stroke Volume is
- a) about 5 - 6 liters b) about 1 - 1.5 liters
c) about 70 ml d) about 30 ml.
- viii) In case of adult human normally the amount of urine excreted everyday is
- a) about 2.5 liters b) about 5 liters
c) about 1.5 liters d) about 3.5 liters.



- ix) The number of nephrons in each human kidney is
- a) about 1.5 millions b) about 1.3 millions
c) about 2.5 millions d) about 3.5 millions.
- x) The normal capillary pressure in human venous end is
- a) about 22 mm. of Hg b) about 15 mm. of Hg
c) about 32 mm. of Hg d) about 11 mm. of Hg
- xi) RBC is produced by
- a) Red Bone marrow b) Yellow bone marrow
c) fibroblast cells d) tibio-fibular joint.
- xii) First heart sound is produced by
- a) sudden closure of AV valves
b) sudden closure of semilunar valve
c) sudden rush of blood from atrium to ventricle
d) none of these.

GROUP - B

(Short Answer Type Questions)

Write short notes on any *three* of the following.

3 × 5 = 15

2. Glomerular Apparatus.
3. Nucleus.
4. Difference between isotonic and isometric contractions.
5. WBC.

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GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

6. Give the classification of muscle. Give the differences between single and multiunit muscle fibers of smooth muscle. Mention the functions of smooth muscle. How do you differentiate cardiac muscle from skeletal muscle ? Mention the causes of muscle fatigue. $3 + 3 + 3 + 3 + 3$
7. What is blood pressure ? Define systolic pressure and pulse pressure. Explain the factors regulating blood pressure. State the significance of blood pressure. $2 + 4 + 5 + 4$
8. Describe cardiac cycle. 15
9. Describe briefly the nephron with a labelled diagram. The renal threshold for glucose is 180 mg/100 ml of blood. Explain. Describe briefly the reabsorption process of nephron. $8 + 3 + 4$
10. Describe the mechanism of formation of action potential in a nerve fibre. Give diagram. What are saltatory conduction and point to point propagation of nerve impulse ? $11 + 4$

