Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Sc. (GE)/SEM-3/MSGEN (ABT)-304A/2012-13

2012

ANIMAL PHYSIOLOGY

Time Allotted : $1\frac{1}{2}$ Hours *Full Marks* : 35

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 *five* of the following : $5 \times 1 = 5$

i) Glucose and amino acids are reabsorbed only in

a) proximal convoluted tubules

b) distal convoluted tubules

c) Henle's loop

d) collecting duct.

ii) Coenzymes are

a) proteins b) non-proteins

c) lipoproteins d) any of these.

iii) Renal circulation is greatest in

a) medulla b) cortex

c) capsule d) sinus.

iv) Human kidney by origin is

a) pronephric b) mesonephric

c) metanephric d) opisthonephric.

v) Henle's loops are absent in

a) birds b) fishes

c) reptiles d) amphibians.

vi) Sertoli cells are found in

a) prostate gland b) seminiferous tubules

c) germinal epithelia d) ovarian stroma.

vii) Molecular weight of a myosin heavy chain is

a) 2 kDa b) 20 kDa

c) 100 kDa d) 200 kDa.

viii) Which of the following cell layers is not a part of the cerebral cortex ?

a) Molecular layer b) Granular layer

c) Pyramidal layer d) Purkinje layer.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. How do the kangaroo rats survive in the deserts without even drinking water ?

3. Why is the glomerular filtrate alkaline, but the final urine acidic ?

4. Discuss the mechanism of olfactory signal transduction in mammals.

5. Discuss briefly the anatomy of human cardiac muscle.

6. Discuss the phases of action potential.

7. What is extraoccular photoreception ?

GROUP – C

(Long Answer Type Questions)

Answer any *one* of the following. $1 \times 15 = 15$

8. Discuss about the role of hormones in spermatogenesis. How does an ovum become structurally adapted for the fertilization reaction ? In what ways are the sperms adapted structurally for fertilization ? 5 + 5 + 5

9. Explain the structural organization of a mammalian retina. Discuss the structure of rod and cone cells. Discuss the mechanism of phototransduction. 6 + 4 + 5

10. What is a synapse ? Discuss in detail, the structure and functions of different types of synapses. What are rapid acting and slow acting neurotransmitters ? 1 + 9 + 5