Name : .....

Roll No. : .....

Invigilator's Signature : .....

CS/M.Sc(Genetics)/SEM-3/MSGEN(EBT)-304B/2011 -12

2011

ENVIRONMENTAL 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) Which is related to chemical research and engineering that encourages to minimize the use and generation of hazardous substances ?

a) Green chemistry b) Brown chemistry

c) Blue chemistry d) Red chemistry.

ii) Who was the founder of the subject 'animal eco-physiology' ?

a) Odum b) Smith

c) Bartholomew d) Schmidt-Nielsen.

iii) In contrast to marine bony fish, marine sharks maintain blood plasma osmolality

a) hypotonic

b) hyperosmotic

c) isosmotic

d) no relation to sea water.

iv) Many physiological reactions are aimed at preserving a constant physical and chemical internal environment and this is called

a) badaptation b) ecesis

c) homeostasis d) coevolution.

v) Granules increase conduction velocity of nerve processes in

a) Schwann cell b) Myelination

c) Synapse d) Nissl.

vi) Which hormone has fight-or-flight response ?

a) thyroxine b) insulin

c) adrenaline d) histamine.

vii) The ..... protein of the Alaska black fish prevents the formation of large ice crystals within its cells, even at sub-zero temperature.

a) AFP b) ATP

c) cGMP d) ADH.

viii) Plants adapted to living in salty soil are

a) xerophytes b) halophytes

c) mesophytes d) epiphytes.

GROUP – B
(Short Answer Type Questions)

Answer any *three* of the following. 3 × 5 = 15

2. What do you mean by the terms 'osmoconformers' and 'osmoregulators' ? Give examples. 3 + 2

3. What is adaption ? State the nature and levels of adaption. 2 + 3

4. State some adaptations necessary for desert life. Name two desert adapting animals. 4 + 1

5. Explain your concept on bioindicator organisms with examples. 4 + 1

GROUP – C
(Long Answer Type Questions)

Answer any *one* of the following. 1 × 15 = 15

6. Describe how animals cope with the following environments :

   i) Arctic/Antarctic zone

   ii) Shore zones.

   Mention one animal each of the above zones with scientific names. 6 + 6 + 3

7. What is Kyoto protocol ? Mention the year of adoption of the treaty. Write the world's top two emitters of GHGs. Write notes on Low Carbon Economy and Carbon Credit. 3 + 2 + 2 + 4 + 4