M.Sc. 2nd Semester Examination, 2011

HUMAN PHYSIOLOGY

PAPER—203

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 wherever necessary

Write the answers to questions of each Unit in separate books

UNIT — 17

[*Marks* : 20]

Answer any *two* questions :   10 × 2

1. (*a*) Describe the major regions of atmosphere with their important chemical species and temperature profile.

(b) Write a brief note on air quality standard.   6 + 4

2. (a) Discuss in which way stability of an ecosystem is maintained through feedback control.

(b) Differentiate between resistance stability and resilience stability.   6 + 4

3. (a) State different types of radioactive decay with their characteristics.

(b) Distinguish between stochastic and non-stochastic effects of radiation. Mention the effects of radiation on chromosomes and enzymes.   3 + 4 + 3

4. (a) State the effects of PAH on human health.

(b) Discuss pyrolytic formation of benzo (a) pyrene with special reference to larger PAHs formation.   3 + (5 + 2)

(*Continued*)

UNIT – 18

[*Marks* : 20]

Answer any *two* questions : 10×2

1. (a) What is toxicodynamics ? Describe the mechanisms underlying thalidomide mediated embryotoxicity.

   (b) State the role of growth factors and integrins in the developing limb bud. $(2 + 6) + 2$

2. (a) What is biotransformation of Xenobiotics ? Discuss about the predictable and unpredictable factors modifying the action of Xenobiotics.

   (b) Describe the FMO catalytic cycle. $(2 + 4) + 4$

3. (a) Describe the signals released from hepatocytes subjected to a primary oxidative stress, caused by activated 1, 2-dichlorobenzene.

   (b) 'DNA base oxidation has severe consequences on base pairing" – Justify the statement. $4 + 6$

4. (*a*) Elaborate the mechanism of action of toxic pollutant on enzyme inhibition by inactivation of co-factor and by binding of the active site of the enzyme.

(*b*) How does activity depression of enzyme occur by toxic metabolite. $\left(3\frac{1}{2} + 3\frac{1}{2}\right) + 3$

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