

2016

M.Sc.

2nd Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-203

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

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

Illustrate the answers wherever necessary.

(Unit—17)

Answer all questions from the following :

1. (a) State critically the influences of abiotic factors on ecosystems.

(b) What is species' tolerance range? 4+1

Or

(a) What are 'Food Chains' and 'Food Webs'?

(b) How does energy loss occur in the food chain and food web? (1½+1½)+2

(Turn Over)

2. (a) Write the endogenous and exogenous sources of CO.
 (b) Discuss critically the pathophysiology of CO with special emphasis on protein binding. 1+4

Or

- (a) What is meant by organic mercury? Why is it fatal to living organisms?
 (b) Discuss the molecular mechanisms behind mercury toxicity. (1+1)+3
3. Elaborate the possible carcinogenic mechanisms of radionuclide pollution describing their mutagenic effects. 5

Or

How autotrophic and symbiotic nitrogen fixation are affected by soil pollutants? $2\frac{1}{2}+2\frac{1}{2}$

4. (a) What are organochlorines?
 (b) Describe the endocrine disrupting effects of organochlorines. 1+4

Or

- (a) Describe the stages of processing of sewage.
 (b) Mention some uses of recycled water.
 (c) How is PAYT system used for source reduction of wastes? 2+1+2

(Unit—18)

Answer all questions from the following :

1. Write short notes on the following : $2\frac{1}{2} \times 2$

- (a) Environmental Impact Assessment.
- (b) Critically endangered species.

Or

- (a) Define biodiversity. State its importance.
- (b) What are Cryogene banks ?
- (c) Mention the potential threats to biodiversity.

(1+2)+1+1

2. (a) Write the principle of production of thermal power in the Thermal Power Stations (TPS).
- (b) What do you understand by 'Ocean thermal energy conversion (OTEC)' ?
- (c) Discuss the importance of solar thermal route as a non-conventional source of energy. $2+1+2$

Or

- (a) Discuss the advantages and disadvantages of hydel power.
- (b) What is Geothermal energy ?
- (c) Define fossil fuel. $2+2+1$

3. (a) What do you mean by toxicokinetics?
(b) Define bioavailability. How will you measure bioavailability of a xenobiotic? $2+(1\frac{1}{2}+1\frac{1}{2})$

Or

- (a) What are Phase I and Phase II biotransformation reactions?
(b) What is Cytochrome P₄₅₀? Describe the role of cytochrome P₄₅₀ in the hydroxylation of xenobiotics. $2+1+2$
4. Write a note on the molecular mechanisms of cadmium mediated oxidative stress. 5

Or

- (a) Describe the toxic windows of developmental toxicity.
(b) Mention the toxic hazards of DBCP. $2+3$
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