

**2015**

**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) Discuss critically the properties of greenhouse gases.
- (b) State the role of CO<sub>2</sub> and N<sub>2</sub>O to enhance greenhouse effects.  $2\frac{1}{2}+2\frac{1}{2}$

Or

Discuss the temperature and precipitation sensitivity of disease-causing pathogens of vector-borne diseases.

$2\frac{1}{2}+2\frac{1}{2}$

*(Turn Over)*

2. (a) Mention the chemical constituents and sources of particulate matters.
- (b) Discuss the statement, "Main mechanism for ultrafine particles is diffusion through cell and organelle membrane".  $2\frac{1}{2}+2\frac{1}{2}$

Or

- (a) Elaborate the mechanisms of mercury toxicity.
- (b) State the role of glutathione in heavy metal binding.  $2\frac{1}{2}+2\frac{1}{2}$

3. (a) Describe the direct and indirect actions of ionizing radiation.
- (b) What are the major determinants of biological effects of ionizing radiation?  $2+3$

Or

- (a) Mention the causes of underground soil pollution.
- (b) Discuss the measures taken to control soil pollution.  $2+3$

4. (a) Describe how organochlorine pesticides and gene interaction occur in our body.
- (b) "Organochlorines are endocrine disrupters" — Justify the statement.  $2\frac{1}{2}+2\frac{1}{2}$

Or

- (a) What is E-waste ?
- (b) Discuss the advantages of composting in solid waste management. What is vermicomposting? 2+2+1

( Unit—18 )

Answer all questions from the following :

1. (a) What are biosphere reserves ? Give examples of two biosphere reserves in India.
- (b) What is IUCN red list ?
- (c) Give examples of some National Parks in India.
- 2+1+2

Or

- (a) What are endangered species ?
- (b) Discuss the ex-situ methods of conservation of biodiversity.
- (c) What are hot-spots of biodiversity in India ?
- 1+3+1
2. (a) What are the different conventional and non-conventional sources of energy ?
- (b) What is the utility of Mini-micro hydel power projects ?
- 4+1

Or

- (a) Discuss the biotechnological applications of microorganisms for the control of carbonmonoxide pollution.
- (b) What are biochips? 3+2
3. (a) How does uptake of toxicants occur by the process of passive diffusion? What is NOEL?
- (b) Mention the factors affecting gastrointestinal absorption of xenobiotics. (2+1)+2

Or

What do you know about glucuronidation, sulfation reactions of Phase II bio-transformation of xenobiotics?

$2\frac{1}{2}+2\frac{1}{2}$

4. (a) Mention the types of nephrotoxicants.
- (b) State the renal responses to xenobiotics and its repairing capacity.
- (c) What is biosensor?  $1\frac{1}{2}+2+1\frac{1}{2}$

Or

Elaborate the nickel mediated oxidative stress and the molecular carcinogenesis mechanisms. 5