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$_2$ and N$_2$O to enhance greenhouse effects.

Or

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

Or

(a) Elaborate the mechanisms of mercury toxicity.

(b) State the role of glutathione in heavy metal binding.

3. (a) Describe the direct and indirect actions of ionizing radiation.

(b) What are the major determinants of biological effects of ionizing radiation?

Or

(a) Mention the causes of underground soil pollution.

(b) Discuss the measures taken to control soil pollution.

4. (a) Describe how organochlorine pesticides and gene interaction occur in our body.

(b) “Organochlorines are endocrine disrupters”— Justify the statement.

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
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Or

(a) Discuss the biotechnological applications of microorganisms for the control of carbon monoxide 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+1+2+1

4. (a) Mention the types of nephrotoxicants.

(b) State the renal responses to xenobiotics and its repairing capacity.

(c) What is biosensor? 1+2+1+1

Or

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