

2017

M.Sc.

2nd Semester Examination

HUMAN PHYSIOLOGY

PAPER—PHY-201

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—13)

Answer all questions from the following :

1. (a) Name the four major non-communicable diseases world wide.
- (b) What are meant by 'behavioral' and 'metabolic' risk factors ?

(c) What factors are included in 'unhealthy lifestyle'? 1+(1+2)+1

Or

(a) What is meant by communicable diseases?

(b) What do you understand by 'fecal-oral transmission' and 'iatrogenic transmission'?

(c) Discuss briefly on control of malaria. 1+(1+1)+2

2. (a) What is population genetics?

(b) What is defined as 'population' in population genetics?

(c) Write a brief note on allele frequency in a population including the way to determine it. 1+1(1 $\frac{1}{2}$ +1 $\frac{1}{2}$)

Or

(a) Write in brief on Hardy-Weinberg principle including its basic requirements.

(b) What is gene pool? (2 $\frac{1}{2}$ +1 $\frac{1}{2}$)+1

3. (a) Explain the hurdle concept of food protection and state how it affects food safety.

- (b) What do you understand by 'criminal adulteration'?
- (c) Briefly state the methods of salting and curing in meat processing. 2+1+2

Or

- (a) State the different classes of dental caries in children.
- (b) Briefly explain the risk factors of childhood obesity.
- (c) How does acute inflammatory response play a role at the time of food allergies? 1+2+2
4. (a) Discuss the role of genetic and adipocyte factors in etiology of obesity.
- (b) Highlight the measures that can be adopted in management of iron deficiency anemia.
- (c) What are the causes of malnutrition in old age? 2+2+1

Or

- (a) Write the over all signs and symptoms of a child suffering from marasmus.

- (b) Briefly discuss the objectives and beneficiaries of 'Mid-day meal programme' in India.
- (c) What is food frequency questionnaire (FFQ)? 2+2+1

(Unit—14)

Answer all questions from the following :

1. (a) What is the significance of biotic factors of environment?
- (b) State the key types of species interactions. With examples.
- (c) What is food chain? 1+3+1

Or

Describe the pathophysiology of carbon monoxide poisoning with special emphasis on haemoglobin and protein binding action. 5

2. (a) Discuss the molecular mechanism of methylmercury toxicity.
- (b) Give a brief note on mercury-thiol binding.

$3\frac{1}{2} + 1\frac{1}{2}$

Or

- (a) What are the direct and indirect action of ionizing radiation ?
- (b) What is prodromal stage ?
- (c) State the acute radiation syndrome. 2+1+2

3. (a) Define toxicodynamics.

- (b) How do uptake of toxicants occur in our body by passive diffusion ?
- (c) Mention the factors that affect pulmonary absorption. 1+2+2

Or

Discuss phase I reaction mechanism with proper diagram. 5

4. (a) What do you understand by IUCN Red list ?

- (b) What is a biosphere reserve ? State the objectives of a biosphere reserve.

- (c) What do you understand by in-situ and ex-situ conservation of biodiversity? 1+2+2

Or

- (a) What are medical wastes?
- (b) Describe the basic design of a landfill?
- (c) What are the advantages and disadvantages of incineration method for management of municipal solid waste. 1+2+2
-