

Total Page - 12

UG/5th Sem/Physio(H)/T/19

2019

B.Sc. (Honours)

5th Semester Examination

**PHYSIOLOGY**

Paper - DSE-1T

Full Marks : 40

Time : 2 Hours

*The figures in the margin indicate full marks.  
Candidates are required to give their answers  
in their own words as far as practicable.*

**(Human Nutrition and Dietetics)**

**Group - A**

1. Answer any *five* questions from the following :

5×2=10

- |   |   |
|---|---|
| (a) Define 'nutrition' and 'nutrients'. | 2 |
| (b) What is Glycemic Index (GI) ?       | 2 |
| (c) Define 'Balanced Diet'.             | 2 |

[ Turn Over ]

( 2 )

- (d) Mention the functions of nutraceuticals. 2
- (e) How much amount of iron is needed for pregnant women according to ICMR 2010 RDA data ? 2
- (f) Explain the term 'Biological Value' of protein. 2
- (g) What are the common symptoms of Vit-E deficiency ? 2
- (h) What do you mean by 'BMI' ? 2

**Group - B**

2. Answer any *four* questions from the following.

4×5=20

- (a) Define BMR. Explain the method of determination of BMR by WHO/ICMR prediction equation. 2+3
- (b) Determine the energy requirements of a 50 years aged female (heavy worker) by doubly labelled water (DLW) method. Explain the importance of folic acid in pregnancy. 3+2
- (c) What is dietary fibre ? Classify the dietary fibres according to their potential health benefits. 2+3

( 3 )

- (d) Define 'Protein Efficiency Ratio (PER)' and 'Net Protein Utilization (NPU)'. What is the richest source of Vit-C ? 2+2+1
- (e) Describe the functions of different vitamins as antioxidants. What is REE ? 4+1
- (f) Give the name of two essential and two non-essential amino acids. Discuss the function of resistant starch as probiotics. 2+3

### Group - C

3. Answer any *one* question from the following.

1×10=10

- (a) Explain the principles of diet survey. Describe the physiological significance of calcium. Discuss the types of space foods. What is ICMR specified 'Nine Group Plan' ? 3+3+2+2
- (b) Describe the physiology of starvation. Formulate a balanced diet for athletes of moderate socio-economic status. What is space nutrition ? Discuss the effect of hypervitaminosis of Vit-A. 3+3+1+3

---

[ Turn Over ]

( 4 )

**(Community Nutrition and Public Health)**

**Group - A**

1. Answer any *five* questions from the following :

5×2=10

- (a) What do you mean by community ? 2
- (b) What is ACU ? 2
- (c) Mention the visible symptoms of good health. 2
- (d) What is over-nutrition ? 2
- (e) What do you mean by food toxicity ? 2
- (f) What is LBW ? What are its consequences ?  
1+1
- (g) Write down the preventive measures of malaria. 2
- (h) What are the causes of dental carries? 2

( 5 )

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Discuss the inter-relationship between nutrition, health and diseases. 5
- (b) Write about absorption of carbohydrate in human body. 5
- (c) Write down the composition and nutritional values of rice and fish. What is Xerophthalmia ?  
1+2+2
- (d) Mention the epidemiology of nutritional anaemia. How it can be prevented ? 2½+2½
- (e) Discuss the methods of family planning with special reference to reproductive technology. 5
- (f) Write down the epidemiology and management of Dengue. 3+2

[ Turn Over ]

( 6 )

**Group - C**

3. Answer any *one* question from the following :

1×10=10

- (a) Formulate balanced diets for lactating woman.  
Discuss about the diet management of an athlete.

6+4

- (b) What is meant by noise index ? Write the sources of extraordinary sound. Discuss the effects of sound pollution on human health.

2+2+6

---

( 7 )

(Clinical Hematology)

Group - A

1. Answer any *five* questions from the following :

5×2=10

- |  |   |
|--|---|
| (a) What is megaloblastic anaemia ?    | 2 |
| (b) Define HbA1.                       | 2 |
| (c) What is reticulocyte ?             | 2 |
| (d) What do you mean by leucopenia ?   | 2 |
| (e) What is Arneht count ?             | 2 |
| (f) Mention two functions of thrombin. | 2 |
| (g) Define Bombay blood group.         | 2 |
| (h) Define PCV.                        | 2 |

[ Turn Over ]

( 8 )

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Discuss the causes and preventive measures of iron deficiency anaemia. 3+2
- (b) What is Thalassemia ? Mention the causes and effect of sickle cell anaemia. 2+3
- (c) Discuss the process of blood coagulation collected in a glass tube. 5
- (d) Define following with normal values —  $2\frac{1}{2} \times 2$
- (i) ESR
- (ii) MHC
- (e) What is fibrinolysis ? Define prothrombin time. Mention the causative factors for coagulation disorders.
- (f) Mention briefly the hazards of blood transfusion of same blood group. 5



( 9 )

**Group - C**

3. Answer any *one* question from the following :

1×10=10

(a) Discuss the causes of Neutrophilia and Lymphocytosis. 5+5

(b) How pernicious anemia is investigated in the laboratory ? Mention the management of pernicious anaemia. (1+4)+(3+2)

---

[ Turn Over ]

( 10 )

**(Biostatistics)**

**Group - A**

1. Answer any *five* questions from the following :

5×2=10

- (a) What do you mean by random sampling ? 2
- (b) Define Z score. 2
- (c) Define geometric mean with an example. 2
- (d) Differentiate between qualitative and quantitative frequency distribution. 1+1
- (e) What is sampling error ? 2
- (f) What is alternative hypothesis ? 2
- (g) Name one non parametric statistics-Mention its one application. 1+1
- (h) What do you mean by standard error of mean ? 2

**Group - B**

2. Answer any *four* questions from the following :

4×5=20

- (a) Write down the application of statistics in the field of biological sciences. What do you mean by population ? 4+1
- (b) What will be the position of mean, median and mode in a positive skewed curve ? Write down the application of percentiles. 2+3
- (c) What are the difference between bar diagram and histogram ? Define frequency polygon. 3+2
- (d) Write down the comparison between normal distribution and t distribution. Describe the properties of skewed distribution. 2+3
- (e) Define correlation. Mention its types. What is regression ? 2+2+2
- (f) What is qualitative data ? Give example. What is variance ? 1+1+2

[ Turn Over ]

( 12 )

**Group - C**

3. Answer any *one* question from the following.

$$1 \times 10 = 10$$

- (a) What do you mean by central tendency ?  
Compute the mean and standard deviation of the following frequency table

Class intervals	151-155	156-160	161-165	166-170	171-175
Frequency	3	17	29	16	5

$$2+3+5$$

- (b) What is null hypothesis ? What is degrees of freedom ? Write down the assumptions of Students' t test. What are critical t scores ?

$$3+2+3+2$$

---