THE UNIVERSITY OF BURDWAN

B. Sc. Semester VI (Honours) TheoryExamination,2022

(CBCS)SUBJECT: PHYSIOLOGY

Paper: DSE3A (Human Nutrition And Dietetics)

Time: 2 Hours **Full Marks: 40**

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.

Examinees are instructed to submit the scanned copies/photographs of their answers' scripts within 30 minutes after the completion of examination.

1. Answer **any five** questions of the following: 5 × 2=10

   a) What do you mean by calorific value of food ?
   b) Mention the effect negative nitrogen balance?
   c) Why lactating mother needs extra proteins?
   d) What do you mean by invisible fat?
   e) Why tryptophan is called essential amino acid?
   f) Why pellagra is a nutritional deficiency disease?
   g) What are the basic principles of formulation of balanced diet?
   h) What is supplementary value of protein, explain with an example?

2. Answer **any two** questions of the following: 2 × 5=10

   a) What are dietary fibers? Name two food items rich in dietary fibers. Mention the importance of dietary fiber. 2+1+2=5
   b) How RQ is calculated? Mention the importance of measurement of RQ. 2+3=5
   c) Briefly state the functions of Selenium and Zink. 2½ + 2½ =5
   d) Name any two method of diet survey. Briefly explain any one method. 1+4=5

3. Answer **any two** questions of the following 2 × 10 =20

   a) i) What is ACU? What is the value of 1ACU? Calculate the daily calorie requirement of a familyof 4 members having heavy worker father, moderate worker mother and school going brother and sister.
   ii) Write brief notes on SDA and RDA. (2+1+3)+ (2+2)=10
   b) Mention the sources, daily requirement and functions of Vitamin A. 2+2+6=10
   c) Mention the principle of measurement of BMR in Benedict's Roth apparatus.
   Mention how Body Surface Area, body fat percentage and diet influences BMR of a subject?
   Is BMR same as basal metabolism, -explain? 5+ (1+1+1)+2=10
   d) Mention the metabolic changes occur during starvation?
   Is fasting same as starvation,- explain? Write a brief note on space nutrition. 4+2+4=10

B.Sc. Semester-VI Examination, 2022 (CBCS)

Subject: PHYSIOLOGY

Paper: DSE 3B (Genetics and Molecular Biology)

Candidates are required to give their answers in their own words as far as practicable and submit the photograph or scanned copy of their answer script within 30 min after the completion of the examination through the email. The figures in the right-hand margin indicate full marks for each question.

Answer all questions as instructed.

Time: 2 Hours **Full Mark: 40**

1. Answer **any five** of the following questions: 5×2=10

a) Define Mendel's law of segregation.

b) Define multiple gene hypothesis.

c) What effect does inbreeding have on allele frequency?

d) Mention the usage of genetic maps.

e) Define aneuploidy.

f) Give examples of two restriction enzymes.

g) Explain wobble hypothesis.

h) What are palindromes?

2. Answer any **two** of the following questions: 2×5=10

a) With suitable experiment, Mendel's Law of independent assortment.

b) Describe the phenomenon of linkage with suitable examples.

c) Give an account of Watson Crick's double stranded model of DNA molecule.

d) Compare the properties of three types of eukaryotic DNA polymerases.

3. Answer any **two** of the following questions: 2×10=20

a) Differentiate inducers and repressors. Lac operon is an inducible operon- Justify.

b) Discuss any five properties of genetic code.

c) What is central dogma? Outline the stages of polypeptide synthesis in prokaryotes.

d) Explain the mode of inheritance of Y linked gene in humans.Give a brief idea about multiple allele inheritance in humans.