THE UNIVERSITY OF BURDWAN

B. Sc. Semester 6 (Honours) Theory Examination, 2021 (CBCS)

SUBJECT: PHYSIOLOGY

Paper: DSE 3A

(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

Answer any ***eight*** questions of the following:

1. Mention the difference between a basal metabolic rate and resting metabolic rate. What are the factors affecting BMR. (5)

2. What do you mean by calorie value and physiological fuel vale of nutrients? How physiological fuel value of carbohydrate, protein and fat are determined? (5)

3. Calculate nutrients requirements of a 4 member family having moderate worker father, sedentary mother and school going brother and sister. (5)

4. Illustrate the metabolic changes occurs during starvation. How it can be prevented? (5)

5. When we call a person obese? Mention the role of leptin in obesity. What are the complications arises due to obesity? (5)

6. Mention the sources and functions of Vitamin C. (5)

7. Briefly describe the functions of iron. (5)

8. What are NPU and PER and how they can be estimated? (5)

9. Write brief notes on a) Supplementary value of protein b) Protein spares (5)

10. What is RDA? Formulate a balance diet for a vegetarian adult. (5)

THE UNIVERSITY OF BURDWAN

B. Sc. Semester 6 (Honours) Theory Examination, 2021 (CBCS)

SUBJECT: PHYSIOLOGY

Paper: DSE 3B

(Genetics and Molecular Biology)

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. Schematically represent the steps of lytic and lysogenic cycles. (5)

2. State the concept of 'Epistasis' in a point-wise manner. (5)

3. What is 'pleiotropy'? Give one example. What are pseudo-alleles? (5)

4. Give a diagrammatic representation of somatic cell hybridisation experiment. (5)

5. What is meant by 'karyotype'? Mention in brief, the salient 'steps in karyotypes'. (5)

6. What are genetic disorders? Briefly mention different types of genetic disorders. (5)

7. Name the components of prokaryotic RNA polymerase? State the functions of the RNA polymerase subunits. (5)

8. Briefly state the functions of plasmid vectors. (5)

9. According to the principles of Mendelism, explain the terms 'dominance, segregation and back-cross' indicating the significance of each. (5)

10. Give a brief outline of the events of 'co-dominance and incomplete dominance'. (5)