2020

FOOD AND NUTRITION (Honours)

Paper Code : X-A & B

(Nutritional Biophysics & Biochemistry)

(New Syllabus)

Full Marks : 50 Time : Two Hours

Important Instructions for Multiple Choice Question (MCQ)

- Write Subject Name and Code, Registration number, Session and Roll number in the space provided on the Answer Script.

  Example : Such as for Paper III-A (MCQ) and III-B (Descriptive).

  Subject Code : | III | A | & | B |

  Subject Name : | |

- Candidates are required to attempt all questions (MCQ). Below each question, four alternatives are given [i.e. (A), (B), (C), (D)]. Only one of these alternatives is 'CORRECT' answer. The candidate has to write the Correct Alternative [i.e. (A)/(B)/(C)/(D)] against each Question No. in the Answer Script.

  Example — If alternative A of 1 is correct, then write :
  1. — A

- There is no negative marking for wrong answer.

মাল্টিপল চয়েস প্রশ্নের (MCQ) জন্য জরুরী নির্দেশাবলী

- উত্তরপত্রে নির্দেশিত স্থানে বিষয়ের (Subject) নাম এবং কোড, রেজিস্ট্রেশন নম্বর, সেশন এবং রোল নম্বর লিখতে হবে।

  উদাহরণ — যেমন Paper III-A (MCQ) এবং III-B (Descriptive)।

  Subject Code : | III | A | & | B |

  Subject Name : | |

- পরীক্ষার্থীদের সবগুলি প্রশ্নের (MCQ) উত্তর দিতে হবে। প্রতিটি প্রশ্নে চারটি করে সম্ভাব্য উত্তর, যথাক্রমে (A), (B), (C) এবং (D) করে দেওয়া আছে। পরীক্ষার্থীকে তার উত্তরের স্বপক্ষে (A) / (B) / (C) / (D) সঠিক বিকল্পটিকে প্রশ্ন নম্বর উল্লেখসহ উত্তরপত্রে লিখতে হবে।

  উদাহরণ — যদি **1** নম্বর প্রশ্নের সঠিক উত্তর **A** হয় তবে লিখতে হবে :

  1. — A

- ভুল উত্তরের জন্য কোন নেগেটিভ মার্কিং নেই।

Paper Code : X - A

Full Marks : 14 Time : Twenty Minutes

Choose the correct answer.

Each question carries 1 mark.

Instruction to students for Page Limitation

For all MCQs, students should answer within 1 page of an A4 paper; for each four marks (04) question : Max. 1 page of an A4 paper (including figure / diagram, if any) and for 10 marks (10) question : Max. 2½ page of an A4 paper (including figure / diagram, if any), should be used.

1. Na+ - glucose transporter is an example of —
   (A) Symporter
   (B) Antiporter
   (C) Facilitated diffusion
   (D) ATP driven active transport

2. In which of the following transport process a cell expels large molecules out of it?
   (A) Phagocytosis
   (B) Exocytosis
   (C) Endocytosis
   (D) Diffusion

3. Vitamin A deficiency is responsible for —
   (A) Nyctalopia
   (B) Cirrhosis
   (C) Scurvy
   (D) Pelegra

4. The protein part of an enzyme is called —
   (A) Apoenzyme
   (B) Cofactor
   (C) Prosthetic group
   (D) None of the above

5. Glycogen is stored in —

(A) Brain

(B) Liver

(C) Kidney

(D) Pancreas

6. Pernicious anaemia is caused by the deficiency of —

(A) Vitamin A

(B) Vitamin B1

(C) Vitamin B12

(D) Vitamin C

7. Which of this vitamin is associated with the coenzyme Biocytin?

(A) Nicotinic acid

(B) Thiamine

(C) Biotin

(D) Pyridoxine

8. EMP pathway occurs in —

(A) Cytosol

(B) Mitochondria

(C) Plasma Membrane

(D) None of the above

9. Which of the following is a reducing sugar?

(A) Dihydroxyacetone

(B) Sucrose

(C) Glucose

(D) All of the above

10. The dietary fiber is also known as —

(A) Roughage

(B) Rhodopsin

(C) Pepsin

(D) Opsin

11. Which of the following enzyme catalyzes the first step of glycolysis?
    (A) Hexokinase
    (B) Pyruvate kinase
    (C) Citrate synthase
    (D) Phosphofructokinase-1

12. Butyric acid is —
    (A) Unsaturated fatty Acids
    (B) Saturated Fatty Acids
    (C) Both A & B
    (D) None of the above

13. Colloids are translucent because of the —
    (A) Henderson effect
    (B) Stark effect
    (C) None of the above
    (D) Tyndall effect

14. The pH of blood is —
    (A) 7.35
    (B) 7.50
    (C) 7.25
    (D) 7.0

2020

FOOD AND NUTRITION (Honours)

Paper Code : X-B

(Nutritional Biophysics & Biochemistry)

(New Syllabus)

Full Marks : 36 Time : One Hour Forty Minutes

The figures in the margin indicate full marks.

1. Answer any *four* of the following : 4×4=16

   (a) Mention the principle of electrophoresis. What is buffer? Give an example of biological buffer. 2+1+1=4

   (b) Write a flow chart of the enzymatic steps involved in glycolysis. 4

   (c) How do antioxidants protect our body from oxidative damage? 4

   (d) Write briefly on the chemical preservatives used for food preservation. 4

   (e) Differentiate between active and passive transport. 4

   (f) State the nutritional significance of dietary fibers. 4

   (g) Which types of fatty acid is good for our health and why? 4

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

   (a) Briefly describe the significance of water activity in food preservation. Why the canned foods be avoided during pregnancy? Mention the essentials of folic acid in pregnancy. 5+2+3=10

   (b) Schematically represent the TCA cycle with enzymes and mention its energetics. 7+3=10

   (c) Discuss briefly the urea cycle with a diagram. Mention its importance. 7+3=10

   (d) Mention the properties of enzymes. Define isozyme, holoenzyme and allozyme. 4+2+2+2=10

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