2020

FOOD AND NUTRITION (Honours)

Paper Code : IX-A & B

(FOOD MICROBIOLOGY)

(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 : IX - 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. Which of the following produces citric acid?
   (A) *Aspergillus*
   (B) *Pseudomonas*
   (C) *Saccharomyce*
   (D) *Clostridium*

2. Which of the following is an algal biofertilizer?
   (A) *Rhizobium*
   (B) *Azotobacter*
   (C) *Nostoc*
   (D) *Azospirillum*

3. Yeast is used for the production of —
   (A) Tetracycline
   (B) Butanol
   (C) Ethanol
   (D) Citric Acid

4. The principal microorganism for yogurt is —
   (A) *Streptococcus thermophilus*
   (B) *Leuconostoc citrovorum*
   (C) *Lactobacillus acidophilus*
   (D) *Streptococcus lactis*

5. Which one of the following acids will have a higher bacteriostatic effect at a given pH?

   (A) Maleic acid

   (B) Citric acid

   (C) Acetic acid

   (D) Tartaric acid

6. What are the intrinsic factors for microbial growth?

   (A) pH

   (B) temperature

   (C) nutrients

   (D) All of the above

7. The time-temperature combination for HTST pasteurization of 72°C for 15 sec is selected on the basis of —

   (A) *E. coli*

   (B) *Coxiella burnetii*

   (C) *C. botulinum*

   (D) *B. subtilis*

8. NaCl can act —

   (A) in transport nutrients

   (B) as antagonist at above optimal concentrations

   (C) Both (A) and (B)

   (D) None of the above

9. Cholera can be prevented by —

   (A) Purified water supply

   (B) Environmental sanitation

   (C) Immunization with killed vaccines

   (D) All of the above

10. At higher concentration, salt and sugar preserve foods because they —

   (A) Make them acid

   (B) Produce a hypotonic environment

   (C) Deplete nutrients

   (D) Produce a hypertonic environment

11. *E. coli* was first discovered by —

(A) Louis Pasteur

(B) Theodor Escherich

(C) Kiyoshi Shiga

(D) Robert Koch

12. The important virulence factors of pathogenic microbes are —

(A) Adhesions

(B) Invasiveness

(C) Hydrolytic enzymes

(D) All of the above

13. Tuberculosis is a —

(A) Viral disease

(B) Bacterial disease

(C) Parasitic disease

(D) None of the above

14. Most spoilage bacteria grow at —

(A) Acidic pH

(B) Alkaline pH

(C) Neutral pH

(D) Any pH

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Turn Over

2020

FOOD AND NUTRITION (Honours)

Paper Code : IX - B

(FOOD MICROBIOLOGY)

(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) Which dyes are used in Gram staining? Explain the significance of Gram staining? 2+2=4

   (b) Write the four characteristics of fungi. 4

   (c) Differentiate between pili and flagella? 4

   (d) What are the primary sources of microbial contamination in food? Define sterilization? 2+2=4

   (e) Write a short note on "canned food preparation". 4

   (f) Briefly mention the necessities of kitchen hygiene. 4

   (g) Distinguish between mixed culture and pure culture with examples. 4

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

   (a) "Food as a substrate for microorganisms" — Comment on the statement. Classify culture media with special reference to the nature of nutrients present in it. 5+5=10

   (b) What are the causative agents of food spoilage? How does fruit spoilage occur and mention its remedies. 3+5+2=10

   (c) What are the nutritive attributes of milk products? How the milk products are preserved? 5+5=10

   (d) Discuss briefly on the primary fermenting microorganisms of food. Write on the role of fermentation in nutritive and food preservation. 3+7=10

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