

**PG (NEW) CBCS**  
**M.Sc. Semester-I Examination, 2019**  
**CHEMISTRY**  
**PAPER: CEM-104**

(FOOD PROCESSING AND PRESERVATION AND COMPUTER BASICS)

**Full Marks: 40**

**Time: 2 Hours**

**Write the answer for each Group in separate sheet**

**Group- A**

**(FOOD PROCESSING AND PRESERVATION)**

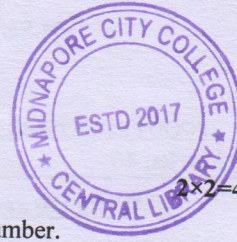
1. Answer any **two** questions from the following: 2×2=4
  - a. What is Agar?
  - b. What do you mean by water activity?
  - c. Define dietary fiber? Mentioning its example.
  - d. What is culture media?
  
2. Answer any **two** questions from the following: 4×2=8
  - a. "Dietary fiber prevents obesity"-Justify this statement.
  - b. Discuss the role of PUFA to prevent cardiovascular diseases? 2+2
  - c. Write the basic principle of food preservation by freezing.
  - d. What are food additives? How they preserve the different food items?  
1+3
  
3. Answer any **one** question from the following: 8×1=8
  - a. About the two intrinsic and extrinsic factors that affect bacterial growth and survivability.
  - b. i) Briefly discuss about the bacterial growth curve with suitable diagram.  
ii) Why protein is call immunoenhancer food? 5+3

**(Turn over)**



(2)

**Group-B**  
**(COMPUTER BASICS)**



4. Answer any two questions of the following: 2×2=4
- a. Convert  $(7689)_{10}$  into equivalent binary number.
  - b. Convert  $(110011)_2$  into equivalent octal and hexadecimal number.
  - c. 1 GB = How many bit?
  - d. What is system software?
5. Answer any two questions of the following: 4×2=8
- a. Find  $(29)_{10} - (22)_{10}$  using 2's complement method.
  - b. What is operating system? What are the different types of operating system?
  - c.  $f(a, b, c) = a'b'c' + a'b'c + a'bc' + a'bc + ab'c' + ab'c + abc' + abc$ . Simplify using Boolean Algebra.
  - d. Define with truth table NAND, NOR, XOR gate.
6. Answer any one question from the following: 8×1=8
- a.  $f(a, b, c, d) = \sum_m(1,3,4,5,6,9,11,13,15) + d(8,10,12,14)$   
Simplify using K-map and draw the logic circuit.
  - b. Design a full adder circuit.

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