UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 2nd Semester Examination, 2023

GE1-P2-COMPUTER SCIENCE (24)

Time Allotted: 2 Hours   Full Marks: 40

The figures in the margin indicate full marks.
All symbols are of usual significance.

The question paper contains GE2A and GE2B.
The candidates are required to answer any *one* from *two* courses.
Candidates should mention it clearly on the Answer Book.

GE2A
PROGRAMMING IN C

GROUP-A

Answer any *five* questions from the following   1×5 = 5

1. What is Source file?

2. What is type casting?

3. Give an example of a binary operator.

4. What is Syntax?

5. What are the parameters of a function?

6. What is float?

7. What is the significance of 'new' operator?

8. What are macros?

GROUP-B

Answer any *three* questions from the following   5×3 = 15

9. Discuss operator precedence in expressions with the help of a suitable example.

10. Discuss inline functions by giving examples.

11. Differentiate between structure and unions with the help of examples.

12. Write a program in C to find the sum of first *n* natural numbers.

13. What are references? How do you use references as function arguments and function return values?   2+3

GROUP-C

Answer any *two* questions from the following   10×2 = 20

14. What are preprocessor directives? Discuss any four types of preprocessor directives used in C.   2+8

2025   1   Turn Over

15.	What is the significance of file in C? Write down the steps to open, close, read and write a file in C.	2+8
16.	What is a pointer variable? How do you declare and dereference pointers to simple variables? How do you use array as pointers?	2+4+4
17.	Write a program in C to find the inverse of a matrix.	10

GE2B
MICROPROCESSOR

GROUP-A

Answer any *five* of the following   1×5 = 5

1. What is the function of the READY signal in an 8085 microprocessor?
2. Which interrupt is non-vectored in 8085?
3. Which interrupt is non maskable in 8085?
4. State the function of XCHG instruction.
5. Explain the function of Program Counter.
6. What are the DMA signals for an 8085 microprocessor?
7. In 8085, what is the size of the address bus and data bus?
8. What are the control signals used for DMA operation?

GROUP-B

Answer any *three* of the following   5×3 = 15

9.   Elaborate the I/O write operation of an 8085 microprocessor with suitable diagram.
10. Explain about bus structure of 8085 microprocessor.
11. Explain arithmetic operations group of the 8085-instruction set.
12. Explain the function of Timing and Control unit of a general microprocessor.
13. What is instruction? Explain instruction formats.

GROUP-C

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

14. With a neat diagram, discuss the internal architecture of 8085 microprocessor.
15. Write an assembly language program to sort 10 numbers in an array.
16. Explain the need of DMA. Discuss in detail about the DMA data transfer scheme.
17. Write a short note on:
     (i)   Addressing modes of 8085
     (ii) Explain conditional jump instruction.

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