

Roll No.

D-3700**B. Sc. (Part III) EXAMINATION, 2020**

MATHEMATICS

(Optional)

Paper Third (A)

(Principles of Computer Science)*Time : Three Hours]**[Maximum Marks : 50*

Note : Attempt any *two* parts of each question. All questions carry equal marks.

Unit—I

1. (a) What is Central Processing Unit ? Explain the components of Central Processing Unit.
- (b) Solve the following :
 - (i) $(11101)_2 + (11011)_2$
 - (ii) $(100111)_2 \times (1101)_2$
- (c) Explain the following :
 - (i) Main Memory
 - (ii) Arithmetic Instruction

(A-69) P. T. O.**Unit—II**

2. (a) What is the importance of protocol in network ? Write any *four* protocols.
- (b) Explain the Development Tools and Techniques of Software.
- (c) Explain the following :
 - (i) Operating system
 - (ii) Software Life Cycle

Unit—III

3. (a) What is algorithm ? Write the algorithm for the following series print :

1 2 4 8 16 512
- (b) Explain the Efficiency and Correctness.
- (c) Explain the following :
 - (i) Program Unit
 - (ii) Declarative Computing

Unit—IV

4. (a) What is the data structure ? Explain the Stack and Queues.
- (b) What do you mean by Object-oriented Database ? Explain it.
- (c) Explain the following :
 - (i) Hashed files
 - (ii) Sequential files

(A-69)

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Unit—V

5. (a) What do you understand by Neural Network ? Explain the Artificial Neural Network.
- (b) Write the application of Artificial Intelligence.
- (c) Explain the following :
- (i) Computable functions
 - (ii) Problem classification