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Printed Pages: 2

### BT-6 / M-18

## ESSENTIALS OF INFORMATION TECHNOLOGY

# Paper-CSE-304 N

Time allowed: 3 hours]

[Maximum marks: 75

Note: - Students are required to attempt five questions in all, selecting at least one question from each unit. All questions carry equal marks.

#### Unit-I

- (a) Mention and explain the techniques / methods involved in problem solving. 8+7=15
  - (b) Write any four quality of an algorithm. How algorithms are implemented?
- 2. (a) Write the binary search algorithm. How the time complexity of this algorithm is calculated? 8+7=15
  - (b) How data is inserted and detected in a stack? Discuss different stack operations.

#### Unit-II

- (a) Explain break and continue statements. Give a specimen example. 8+7=15
  - (b) Why and how type conversion is performed in any programming language?
- Write note on the following:

5+5+5=15

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(a) Access specifiers

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[Tum over

Command line arguments

Class diagrams

#### Unit-III

(2)

- (a) What do you mean by inheritance? Discuss different type 8+7=15 of inheritance.
  - What is constructor? How constructors are overloaded?
- What standard industry proposed for best coding practices? How a programming code is tuned and optimized? 15

#### Unit-IV

- (a) What is relational model? Write the different steps to translate 8+7=15 ER diagram to relational schema.
  - (b) Why normalization is required? Discuss 3<sup>rd</sup> normal form with specimen example.

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- (a) What is SQL? Write the purpose and syntax of Alter and 8+7=15 Update statement.
  - (b) What are the database design issues? How SQL queries can be fine-tuned?

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