Code No.BTS027A

## IT 303 PROGRAMMING TECHNIQUES AND PRACTICES

Time: 3 Hours                                              Max. Marks:100

(Answer all questions)

I-A    i)    What are the features of a high level language that allow it to be termed a 'good language'?

    ii)    Give the points to be noted while prescribing a program specification.

OR

I-B    i)    What is your notion about 'good programming'?

    ii)    Explain the 'system development life cycle'.

II-A    i)    List the common datatypes with operations on them, available in programming languages.   Why is it impossible to provide arbitrarily' large data values on practical machines?

    ii)    Give an algorithm to sort n integers in nondecreasing order.

OR

II-B    i)    Differentiate between internal sort and external sort.   Give one example each for algorithms for both types of sorting.

    ii)    Given a set of n integers sorted in a particular order, suggest a method to search for an element x in the set which performs not more than $\log$ comparisons.   Assume n· to be a power of 2.

III-A    What do you understand by 'modular programming'?

OR

III-B    Compare various methods to check a program design.

IV-A    What are the items to be included in a software test description that help to ensure program correctness?

OR

IV-B    Explain the points that are to be remembered while a software test strategy is devised.

V-A    What is the role of software maintenance in successful use of a software system?

OR

V-B    Compare the types of field trials of a program.

VI-A    With reference to a team-programming environment, explain the following terms:
    i)    Catalytic checking    ii)    Egoless programming.

OR

VI-B    Describe the utilities commonly available that can enhance the programmer's productivity.

VII-A    Illustrate the use of a suitable tabular technique in evaluating a complex combination of conditions to select an appropriate action.

OR

VII-B    Suggest a reasonable implementation for a decision table.

VIII-A    Describe the various stages of processing that a program undergoes starting from its creation.            OR

VIII-B    "Good programs should avoid the use of unstructured constructs like Go To":- Comment.

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