

**B.Tech. IV Semester (Main) Examination, June/July - 2015**

**Computer Science and Engineering**

**4CS6A Principles of Programming Languages**

**Common with IT**

**Time : 3 Hours**

**Maximum Marks : 80**

**Min. Passing Marks : 26**

**Instructions to Candidates:**

*Attempt any five questions, selecting one question from each unit. All questions carry equal marks. Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

**Unit - I**

1. a) Explain any four features of a good programming language (8)
- b) Explain the basic computational models that describe most programming languages (8)

**OR**

1. Explain the stages in which a source program is translated into executable program with the help of block diagram (16)

**Unit - II**

2. a) What are elementary data types? Explain the specifications of elementary data types (8)
- b) What is type checking? Explain its types with their advantages and disadvantages (8)

**OR**

2. a) Explain the implementation of direct - access files (8)
- b) What are sets? Explain the implementation of the basic operation of sets using bit-string storage representation (8)

### Unit - III

3. a) Explain the forms of statement - level sequence control by giving example of each in 'C' language (8)
- b) What are exceptions? Explain the exception handling mechanism by giving example (8)

### OR

3. a) Explain the implementation of a simple subprogram with the help of block diagrams. (12)
- b) Explain the different types of sub program referencing environments (4)

### Unit - IV

4. a) Explain the static and dynamic scope of an identifier with their rules (8)
- b) Explain the retention and deletion approaches to local environments of a subprogram with their advantages and disadvantages (8)

### OR

4. a) Explain call-by-value and call-by-reference parameter passing methods by giving examples from C/C++ languages (8)
- b) What are tasks? Explain different approaches of storage management in tasks (8)

### Unit - V

5. a) Write short notes on :
- i) Information hiding
- ii) Encapsulation (2×4=8)
- b) Explain static storage management with their advantages and disadvantages (8)

**OR**

5. a) Explain the recovery technique of explicit return and the problems associated with the technique in fix-size heap storage management (8)
- b) Explain the phases of variable - size heap storage management (8)
-