4E4165

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B. Tech. IV Sem. (Main/Back) Exam., June/July-2014
Computer Engg.
4CS6 Principles of Programming Languages
Common with IT

Time: 3 Hours   **Maximum Marks: 80**

Min. Passing Marks: 24

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.

Use of following supporting material is permitted during examination.

(Mentioned in form No.205)

1._____   2._____

UNIT-I

Q.1. (a) What do you mean by programming paradigm? Explain different programming paradigm with example. [10]

(b) Describe following properties [6]
   (i) Orthogonality
   (ii) Reliability

OR

Q.1. (a) Explain the different stages involved in language translation. [10]

(b) Distinguish between static binding and dynamic binding. [6]

UNIT-II

Q.2. (a) Explain representation and implementation of following data types- [8]

     (i) Integer Data type

     (ii) Real Data type

  (b) What is type equivalence? Explain its variations with example. [8]

OR

Q.2. (a) Describe the implementation and specification of sequential and direct access file with suitable example. [8]

  (b) What is variant record? Give syntax to declare variant record. [4]

  (c) Write short note on sets. [4]

UNIT-III

Q.3. (a) What do mean by structured sequence control? Also discuss the problems in structural sequence control. [8]

  (b) Differentiate between: [8]

     (i) Subroutine & Macro

     (ii) Subroutine & Coroutine

OR

Q.3. (a) Differentiate between: [6]

     (i) Implicit & Explicit sequence control

     (ii) Substitution and unification

  (b) Explain exception handling. [10]

UNIT-IV

Q.4. What is the role of parameter passing in subprogram invocations? Consider following code: [16]

```
Void swap (int a, int b)
{
    int temp = a ;
    a = b ;
    b = temp ;
}

Void main ( )
{
    int list [5] = {1, 3, 5, 6, 10};
    Value = 15 ;
    swap (value, list [0];
    swap (list [0], list [2]);
    swap (value, list [3];
}
```

Consider different methods of parameter passing find the values of variable value and list after each call of swap function.

Q.4. Write short note on -   [16]

   (i)   Encapsulation

   (ii)   Information hiding

   (iii) Static and dynamic scop of identifier

   (iv) Formal and actual parameter

UNIT-V

Q.5. Differentiate between static and dynamic storage Management approaches.   [16]

OR

Q.5. Explain following – (any two)   [16]

   (a)   Garbage collection Algorithm

   (b)   Variable Block Allocation

   (c)   Phases of storage Management

-------x-------x-------