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Roll No. ....

Serial No. :

**873**

**B. Tech (Computer Science & Engineering)**  
**8<sup>th</sup> Semester**

**1117**

**Co-432 Programming Languages**

**(From the Session 2016-17)**

Time allowed : 3 Hours

Maximum Marks : 60

Instruction : Attempt any five questions by selecting at least one question from each section. Each question carries 12 marks.

### **SECTION-A**

What are elementary data types ? Explain specification and implementation of elementary data types available in programming languages by giving suitable examples. 12

*P.T.O.*

2. (a) What is type casting ? Explain different methods of type casting available in programming languages. 6

(b) What is enumeration data type ? Why it is required ?

Explain enumeration by providing a suitable example in any programming language. 6

### SECTION-B

3. Describe different types of operations which can be applied over the following structured data types : 12

(i) Sets

(ii) Strings

(iii) Files

(iv) Union

- (a) What are generic data types ? Describe how generic data types are applied over functions. 6
- (b) Explain the concept of abstraction, encapsulation and information hiding by giving suitable examples. 6

### SECTION-C

What is activation record ? Describe the structure of activation record. With the help of a suitable example and diagram explain how activation records are created in the case of recursion. 12

Describe following parameter passing method with the help of suitable programming examples : 12

- (i) Call by value
- (ii) Call by value-result

*P.T.O.*

- (iii) Call by reference

## SECTION-D

7. Describe different constructs required for working with following programming languages : 12

(i) Object oriented programming languages

(ii) Functional languages

8. Differentiate among the following storage management schemes in programming languages : 12

(i) Heap storage and stack storage management

(ii) Programmer and system controlled storage management