

May 2017

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Seat No.	
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[5152]-570

S.E. (Computer Engg.) (Second Semester)

EXAMINATION, 2017

PRINCIPLES OF PROGRAMMING LANGUAGES

(2015 PATTERN)

Time : Two Hours

Maximum Marks : 50

N.B. :— (i) All questions are compulsory.

(ii) Figures to the right indicate full marks.

1. (a) Define the syntax and semantics. Compare and contrast the axiomatic semantics and denotational semantics. [6]
- (b) List and discuss the Statement-level control structures and Unit-level control structures with their syntax. [7]

Or

2. (a) Explain how following concepts are used in design of data types with examples : [6]
 - (i) Data Aggregates and type constructors
 - (ii) Cartesian Product
 - (iii) Sequencing.
- (b) What is importance of reliability and maintainability to programming languages ? List the factors which ensure the reliability and maintainability. [7]

P.T.O.

3. (a) What are *four* main programming paradigms ? Which programming languages are based on these ? Explain the features of any *one* of these. [6]
- (b) Write a program which receives n integers. Store the integers in an array. Program outputs the number of odd and even numbers present in this array. [6]

Or

4. (a) What are primitive data types ? List the primitive data types in Java and their respective storage capacity. [6]
- (b) Explain various methods of grouping programming units in Ada. What is advantage of grouping the units ? [6]
5. (a) What is an Interface in Java ? How is this different than a class ? Give example of interface. [6]
- (b) What do you mean by method overloading ? Write a program which adds *two* integers and *three* integers by using overloaded methods for adding *two* and *three* integers respectively. [7]

Or

6. (a) What is the use of static variables and methods in Java ? Give example of static declaration. What are restrictions on methods which are declared static ? [7]
- (b) What is method overriding in Java ? What is advantage of using overriding ? Demonstrate method overriding with example. [6]

7. (a) How is the architecture of an applet different than a console based program ? Explain the function of `init( )`, `start( )` and `stop( )` methods. [6]
- (b) Which class supports character input to the program ? Write a program to read the name of the user and display welcome message. [6]

Or

8. (a) What is the use of `PrintStream` and `PrintWriter` classes ? Which methods are supported by these classes ? Give example of each. [6]
- (b) What are uncaught exceptions ? What are advantages of exception handling ? State the use of `try( )`, `catch( )` and `throw( )` methods. [6]