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S.E. (COMPUTER ENGG.) (II-Sem.) EXAMINATION, 2018

PRINCIPLES OF PROGRAMMING LANGUAGES

(2015 COURSE)

Time : Two Hours

Maximum Marks : 50

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

(ii) Figures to the right indicate full marks.

1. (a) What is an Applet ? Write a generic Skeleton of Java Applet and explain the use of each block. [7]

(b) State with example the use of the following built in exceptions in Java :

(1) IndexOutOfBoundsException( )

(2) NullPointerException( )

(3) ArrayIndexOutOfBoundsException( ) [6]

*Or*

2. (a) What is the use of CharacterArrayReader() and CharacterArrayWriter() methods in Java ? Write a program which reads string of 10 characters from the user. Program extracts and prints the substring from the given string using above methods. [7]

(b) What is difference in character and byte streams in Java ? Give any *two* input and any *two* output classes for character streams. [6]

P.T.O.

3. (a) What is inheritance ? What are advantages of using inheritance ? Show by example the simple inheritance in Java. [7]
- (b) Explain the following Java concepts and state the difference with examples : [6]
- (1) Interface and Abstract class
  - (2) Static and Dynamic Dispatch.

*Or*

4. (a) What is use of Constructors ? What are types of constructors in Java ? Give example of each type. [7]
- (b) Explain the concepts and state the difference in the following with examples : [6]
- (1) Method Overloading and Overriding
  - (2) Applet and Console Program.

5. (a) What are steps of software development process SDLC (Waterfall Model) ? Why the use of this model is necessary in software development ? [6]
- (b) Explain how data is handled in programming languages. Give the type structure of ADA Language. [6]

*Or*

6. (a) What do you mean by Syntax ? State and draw the EBNF definition for Syntax Rules. [6]
- (b) Explain with example the use of the following data aggregates to construct compound data types : [6]
- (1) Sequencing
  - (2) Cartesian Product.

7. (a) What is generic programming ? How C++ offers generic programming constructs ? Give example. [6]
- (b) Explain why Java is Secured, Portable, and Dynamic ? Which of the concepts in Java ensures these ? [6]
8. (a) What is the advantage of grouping Units ? Explain the constructs in C++ based on grouping of Units. [6]
- (b) Write a program in Java using switch-case statement to perform addition, subtraction, Multiplication and Division of given two numbers and print the result. Does the program generate any exception ? [6]