[5925]-264

S.E. (Computer Engineering)
PRINCIPLES OF PROGRAMMING LANGUAGES
(2019 Pattern) (Semester - IV) (210255)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

    1)   Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.

    2)   Neat diagrams must be drawn whenever necessary.

    3)   Assume suitable data if necessary.

Q1) a) Justify the meaning of each characteristic of Java in the statement "Java is simple, architecture neutral portable, interpreted and robust and secured programming language". **[6]**

    b) Write a program in Java to perform the addition of two matrices (multidimensional arrays) and set the diagonal elements of resultant matrix to 0. **[6]**

    c) Write a program in Java using switch-case statement to perform addition, subtraction, Multiplication and Division of given two numbers and print the result. **[6]**

<div align="center">OR</div>

Q2) a) Explain in brief below keywords with example in Java. **[6]**

       i)   Final   ii) Static   iii) This

    b) Define Constructor. List its different types. Demonstrate with suitable example the different types of constructors used in Java. **[6]**

    c) 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]**

Q3) a) Define Inheritance and list the advantages. Explain the types of Inheritance in Java with suitable Java code. **[9]**

    b) Describe Exception. Write any two examples of exception. Explain keywords try, catch, throw, throws and finally related to exception handling. **[8]**

<div align="center">OR</div>

Q4) a) Demonstrate the methods of creating packages and importing them in other java programs with example. Write about the access protection in packages. **[9]**

b) Explain abstract classes and polymorphism in Java with appropriate java codes. **[8]**

Q5) a) Write short notes on React JS. Enlist and explain the feature of it. **[6]**

b) Explain life cycle of Thread model in Java. **[6]**

c) State the term thread synchronization. Explain how to achieve thread synchronization in Java. **[6]**

OR

Q6) a) List the features of JavaScript and write a JavaScript program to display Welcome message. **[6]**

b) Write short note angular JS. List its advantages and disadvantages. **[6]**

c) Differentiate Multiprocessing and Multi-threading. **[6]**

Q7) a) Write a program to find the factorial of a given number using LISP. **[6]**

b) Evaluate the following forms of LISP. **[5]**

   i) (car (cdr '(1 2 3 4 5)))

   ii) (car (cdr '(a(b c)d e)))

   iii) (car (cdr(cdr '(1 2 3 4 5 6 7 8))))

c) Explain the basic list manipulation in prolog. **[6]**

OR

Q8) a) Explain the following Equality predicates using suitable example. **[6]**

   i) EQUAL

   ii) EQ

   iii) EQL

   iv) =

b) Comparisons between functional programming and logic programming. **[5]**

c) Explain the phrases - "Term", "Facts", "Rule", "Goals" used in Prolog with example. **[6]**

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