Printed Pages: 3 | 385 | NCS-503

(Following Paper ID and Roll No. to be filled in your Answer Book)

Paper ID : 110503 | Roll No. | | | | | | | | | |

B.Tech.

(SEM. V) THEORY EXAMINATION, 2015-16

PRINCIPLE OF PROGRAMMING LANGUAGE

[Time:3 hours] [MaximumMarks:100

Section-A

Q.1 Attempt all parts. All parts carry equal marks. Write answer of each part in short. (10×2=20)

(a) What are objectives of principles of programming language?

(b) Compute the weakest precondition of the following assignment a=2*(b-1)-1 (a>0)

(c) What are the different forms of statement-level sequence control?

(d) Mention the components of referencing environment.

(e) What are imperative languages?

(f) Differentiate between compiler and interpreter.

(g) Define methods and objects in C++ language.

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(h) What do you mean by primitive data type?

(i) Specify two differences between procedural and object oriented language.

(j) Define lambda calculus.

Section-B

Attempt any five Questions from this section: (10×5-50)

Q.2 Waht are the different mechanisms for storage representation of structured data types? Also explain any two major storage management issues.

Q.3 Explain the evolution of various programming paradigms in detail with suitable examples.

Q.4 What are various fields of an activation record? Explain how activation record will look like for every recursive call in case of factorial (5). Also draw activation tree for the same.

Q.5 Describe sequence control in various statements with suitable examples.

Q.6 Consider the following grammar rule : $E \rightarrow E+E \mid E*E \mid (E) \mid id$. Check for the embiguity for the following sequence of tokens and eliminate the ambiguity if present. (idf + id * id)

Q.7 Compare C, C++ and LISP on the basis of various attributes.

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Q.8 By taking a suitable example of your own choice, explain the following :

a) Private, Public, protected access specifiers.

b) Function overloading and operator overloading.

Q.9 Describe different methods of passing parameters with examples.

Section-C

Attempt any two questions from this section : **(2×15=30)**

Q.10 Give the complete translation structure of the following statement :

Result = start * 10 + phase * 20

Q.11 Write a recursive program to find length of a list in LISP.

Q.12 Write a short note on :

a) Denotational semnatics and operational semantics.

b) Real life example of client server model in network programming.

c) Need and syntax lambda calculus.

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