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10CS/IS666

Sixth Semester B.E. Degree Examination, June/July 2017
Programming Languages

Time: 3 hrs. Max. Marks:100

Note: *Answer FIVE full questions, selecting at least TWO questions from each part.*

PART – A

1 a. What makes the programming language successful? **(06 Marks)**

b. Describe the difference between deep and shallow binding of referencing environment. **(04 Marks)**

c. Explain the principle storage mechanisms with respect to object oriented life time. **(10 Marks)**

2 a. List and explain the major categories of control flow mechanism. **(08 Marks)**

b. Explain true iterator, iterator objects and iterating without iterator with example. **(06 Marks)**

c. What is short circuiting evaluation? Why it is useful? Explain with example. **(06 Marks)**

3 a. Explain Numeric, Enumeric, sub-range and composite types of various programming language. **(10 Marks)**

b. What are daggling references? How they are created and why are they problem? **(05 Marks)**

c. What is pointer reversal? What problem does it address? **(05 Marks)**

4 a. Discuss on subroutine calling sequence. What is meant by subroutine prologue and epilogues? **(06 Marks)**

b. Explain four common parameter – passing modes. **(08 Marks)**

c. What is an event? Explain sequential handlers and thread based handlers. **(06 Marks)**

PART – B

5 a. Explain the basic philosophy behind the visibility rules of C++? **(03 Marks)**

b. Discuss the issue arises in Initialization and finalization mechanism. **(12 Marks)**

c. Explain the difference between virtual and non-virtual methods with example. **(05 Marks)**

6 a. What are the features of functional programming languages? **(04 Marks)**

b. What is the difference between Normal – order and applicative order of evaluation? What is lazy evaluation? **(06 Marks)**

c. Describe the prolog search strategy. Discuss back tracking and the instantiation of variables. **(10 Marks)**

7 a. Explain the motivation for concurrency. **(03 Marks)**

b. Explain the coherence problem for multiprocessor caches. **(04 Marks)**

c. Describe six different mechanisms commonly used to create new threads of controls in a concurrent program. **(06 Marks)**

d. What does it means for an algorithm to be non blocking? What advantages do non-blocking algorithms have over algorithm based on locks? **(07 Marks)**

8 a. Explain the following with respect to Java virtual machine.
i) Architecture ii) Byte code. **(08 Marks)**

b. What is a Just-in-Time (JIT) compiler? What are its potential advantages over interpretation or convential compilation? **(04 Marks)**

c. Explain the difference between breakpoints and watch points **(04 Marks)**

d. What is sandboxing? How it is implemented? **(04 Marks)**

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