INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad -500 043

COMPUTER SCIENCE AND ENGINEERING

ASSIGNMENT

Course Name	PRINCIPLES OF PROGRAMMING LANGUAGES
Course Code	A50511
Class	III B. Tech I Semester
Branch	Computer Science and Engineering
Year	2017 –18
Course Faculty	Ms.K. Radhika, Associate Professor, CSE Ms. B.Jaya Vijaya, Assistant Professor, CSE Mr. P. Sunil Kumar, Assistant Professor, CSE

OBJECTIVES

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

ASSIGNMENT – I & II

S. No.	Question	Blooms Taxonomy Level	Course Outcome
	UNIT - I		

1	**Compute** the weakest precondition for each of the following simple assignment statements and post conditions.
	   i. a=2*(b-1)-1{a>0}
	   ii. b=(c+10)/3 {b>6}
	   iii. a=a+2*b-1 {a>1} d) X=2*y+x-1 {x>11}
		Apply	5

2	**Illustrate** some reasons why computer scientist and professional software developers should study general concepts of language design and evaluation.	Apply	1
3	**Write** reasons for the statement: "Exception handling is very important, but often neglected by programming languages".	Apply	2
4	**Apply** reasons for the statement: "A programming language can be compiled or interpreted". Give relative advantages and disadvantages of compilation and interpretation. Give examples of compiled and interpreted	Apply	3
5	**Show** that **the** given grammar is ambiguous. <assign> -><id>=<expr> <id>->A|B|C <expr>-><expr>+<expr> |<expr>*<expr>|(<expr>).	Apply	5

S. No.	Question	Blooms Taxonomy Level	Course Outcome

6	**Write** BNF notation for following:
	  a) For loop
	  b) If-else condition
	  c) Structure definition
		Apply	5

7	**Explain** in detail about denotational semantic?	Understand	5
8	**Sketch** the parse tree for following grammar? A = B * (A+C)	Apply	5
9	**Explain** in detail about operational semantics?	Understand	5
10	**Explain** about EBNF?	Understand	5
UNIT - II			
1	**List** what advantages does java's break statement have over C's and C++'s break statement?	Knowledge	8
2	**State** whether static binding is more reliable or dynamic binding?	Knowledge	7
3	**Illustrate** with an example the language used for structural type equivalence and name type equivalence approach?	Apply	6
4	**Illustrate** suitable examples of Ada programming language for arithmetic Expressions?	Apply	6
5	**Write** an Ada Code to swap two variable values?	Apply	2
6	**Write** code for employee record details in COBOL language?	Apply	2
7	**Discuss** about user defined ordinal types?	Understand	6
8	**Evaluate** record types and union types?	Evaluate	6
9	**Discuss** the design issues of pointer type?	Understand	6
10	**Discuss** about short circuit evaluation?	Understand	6
UNIT - III			
1	**Discuss** generic subprograms in C++ and Java?	Understand	8
2	**Illustrate** with example Lua code which shows the importance of "Quasi Concurrency"?	Apply	9
3	**Compare** the parameter passing mechanisms of ALGOL and ADA?	Apply	7
4	**Illustrate** with suitable examples to differentiate subprograms and	Apply	7
5	**Define** shallow and deep binding for referencing environment of sub-programs that have been passed as parameters.	Knowledge	7
6	"The design considerations of parameter passing plays a major role in a sub program block", **Comment** on the statement.	Apply	7
7	**Discuss** design issues of functions?	Understand	7
8	**State** three general characteristics of subprograms?	Knowledge	7
9	**Show** the implementation of different parameter passing methods?	Apply	7
10	**List** design issues of subprograms?	Knowledge	7
UNIT - IV			
1	**Discuss** how dining philosopher's problem and producer consumer problem are solved using concurrency in Ada?	Understand	9
2	**Describe** the cooperation synchronization and competition synchronization in message passing?	Knowledge	9
3	**Compare** the parameter passing mechanisms of ALGOL and ADA.	Apply	7
4	**Explain** how Smalltalk messages are bound to methods. When does this take place?	Understand	8
5	**Write** a C# code to find the factorial of a number?	Apply	8
6	**Discuss** the different prepositions of PROLOG language.	Understand	10
7	**Discuss** the design issues of Abstract Data Types?	Understand	8

8	**Compare** Java threads with C# threads?	Apply	9
9	**List** the applications of Logic programming?	Knowledge	10
10	**Discuss** about semaphores?	Understand	9
UNIT - V			
1	**Explain** the procedural abstraction in PYTHON language?	Understand	12
2	**Discuss** Python data types with suitable examples?	Understand	12
3	**Write** features of Haskell that makes very different from Scheme?	Apply	11
4	**List** the ways in which ML is significantly different from Scheme?	Knowledge	11
5	**Compare** functional and imperative Languages?	Apply	11
6	**Discuss** application of Functional Programming Languages?	Understand	11
7	**Explain** the data abstraction in Python language?	Understand	12
8	**Describe** the separate compilation and module library of Python language?	Knowledge	12
9	**Discuss** fundamentals of Functional programming languages?	Understand	11
10	**Write** the features of LISP language?	Apply	11

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