KATHMANDU UNIVERSITY
End Semester Examination
March/April, 2017

Marks scored:

Level : B. E.
Year : III
Course : COMP 301
Semester : I
Exam Roll No. :
Time: 30 mins.
F. M. : 10
Registration No.:
Date : MAR 2 6 2017

SECTION "A"
[20 Q × 0.5=10 marks]

1. Aliasing in the context of programming languages refers to .....
[ ] multiple variables having the same memory location
[ ] multiple variables having the same value
[ ] multiple variables having the same identifier
[ ] multiple uses of the same variable

2. Which statement is true?
[ ] One object is used to create one class
[ ] One class is used to create one object
[ ] One object can create many classes
[ ] One class can create many objects

3. In which of the following parameter passing mechanism, the actual argument has to be a variable?
[ ] Pass by value
[ ] Pass by result
[ ] Pass by value-result
[ ] Pass by reference

4. Which of the following class of statements usually produce no object code when compiled?
[ ] Assignment [ ] Unreachable [ ] Declaration [ ] Control

5. What is an alternate term for lexical analyzer ?
[ ] scanner
[ ] parser
[ ] pushdown automaton
[ ] all of the above

6. Which of the following represent a static semantic error in C++?
[ ] type mismatch
[ ] missing semi-colon
[ ] illegal character
[ ] division by zero

7. Why do we care if a grammar is ambiguous?
[ ] We don't really. While ambiguity is interesting, it is not important
[ ] It takes longer to parse
[ ] A different semantic meaning is associated with a different parse tree
[ ] none of the above

8. The grammar S → aSa | bS | c is
[ ] LL(1) but not LR(1)
[ ] LR(10 but not LR(1)
[ ] Both LL(1) and LR(1)
[ ] Neither LL(1) nor LR(1)

9. Consider the grammar defined by the following production rules, with two operators * and +

S --> T * P
T --> U | T * U
P --> Q + P | Q
Q --> Id
U --> Id

Which one of the followings is TRUE?

[ ] +is left associative, while * is right associative
[ ] + is right associative, while * is left associative
[ ] Both + and * are right associative
[ ] Both + and * are left associative

10. In compiler, source program is read by .....

[ ] parser [ ] lexical analyzer [ ] developer [ ] analyst

11. Token for "compiler" is .....

[ ] keyword [ ] string [ ] ID [ ] literal

12. The concept of grammar is much used in which part of compiler?

[ ] lexical analysis [ ] parser [ ] code generation [ ] code optimization

13. Parsing is also known as .....

[ ] syntax analysis [ ] lexical analysis
[ ] semantic analysis [ ] code generation

14. Which of the followings is smallest integer data type?

[ ] long [ ] integer [ ] short [ ] byte

15. Character data type cannot store following value___.

[ ] special characters [ ] letter [ ] digit [ ] string

16. Which of the following automatic type conversion will be possible?

[ ] short to int [ ] byte to int [ ] int to long [ ] long to int

17. How does the size of an array is declared ?

[ ] programmer [ ] program user
[ ] software [ ] declared automatically

18. When variable used in program is whole number, the variable is stored as.....

[ ] fixed string [ ] integers
[ ] negative whole numbers [ ] positive whole numbers

19. What is the outcome of following assignment expression?
(x = foo())! = 1considering foo() returns 2

[ ] 2 [ ] True [ ] 1 [ ] 0

20. Which of the following cannot be structure member?

[ ] Another structure [ ] Function [ ] Array [ ] Statement

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SECTION "B"

[6Q × 4 = 28 marks]

Attempt *ALL* questions.

1. Differentiate between Static Type Checking and Dynamic Type Checking.

2. Differentiate between Syntax and Semantics with examples.

3. What are the advantages and disadvantages of dynamic local variables?

4. Define Lexeme and Token with and examples.

5. Draw a Parse tree for expression x = y / (a + c).

6. Considering the following ambiguous grammar. Develop two ways Parse Tree.

E → E + E	E → a
E → E * E	E → b
E → (E)	E → c

7. Develop a language structure using following sentence that is "A Boy is eating apple but not mango".

SECTION "C"

[2Q × 6 = 12 marks]

Attempt *ALL* questions.

8. Explain about the reasons for studying concepts of programming language. How does it help to enhance the quality ?

9. i) Write an algorithm to reverse the precedence of Arithmetic Operators.
   ii) Explain about the type of conversion with an example.