QUIZ NAVIGATION

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Started on	Thursday, 18 November 2021, 4:15 PM
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Completed on	Thursday, 18 November 2021, 4:57 PM
Time taken	42 mins 26 secs
Grade	**19.00** out of 20.00 (**95**%)

Question 1

Correct

Mark 1.00 out of 1.00

Flag question

Fill in the two blanks (marked by _ starting from the 3rd character) so that the following pattern represents a floating constant in hex format.

0[__]([0-9a-fA-F]*\.[0-9a-fA-F]+|[0-9a-fA-F]+\.?)[Pp][-+]?[0-9]+[flFL]?

Answer: xX

The correct answer is: Xx

Question 2

The following grammar is implemented in Bison (non-terminals are represented in italics).

Correct

Mark 1.50 out of 1.50

Flag question

S: id = *E*

E: num

| *E* + num

| *E* - num

If we parse a sequence

id = 4+3-2+8

by applying the above rule then what will be the depth of the parse tree.

Answer: 5

The correct answer is: 5

Question 3

Correct

Mark 1.50 out of 1.50

Flag question

Fill in the blanks (marked by _) for the following flex specifications:

```
%{
int chars=0;
int words=0;
int lines=0;
%}
%%
[a-zA-Z]+  { words++; chars+=strlen(____); }
\n {chars++; lines++;}
. {chars++;}
%%
```

```
main(int argc,char **argv)
{
  yylex();
  printf("%d%d%d\n",lines,words,chars);
}
```

Answer: yytext

The correct answer is: yytext

Question 4

Correct

Mark 2.50 out of 2.50

Flag question

In the context of Bison perform the correct match

1. Terminal Symbols — %token
2. Start Symbol — %start
3. Separator for multiple rules in production rule (same left had side, different right hand side) — |
4. Non-Terminal Symbols — %type
5. The separator between the left-hand side non-terminal and the right hand side of a production rule. — : (read as colon)

The correct answer is: The separator between the left-hand side non-terminal and the right hand side of a production rule.
– : (read as colon), Non-Terminal Symbols

– %type, Separator for multiple rules in production rule (same left had side, different right hand side)
– |, Start Symbol
– %start, 1. Terminal Symbols – %token

Question 5

Correct

Mark 2.00 out of 2.00

Flag question

1: *S* -> *E*

2: *E* -> *E* + *E* | *E* – *E* | *E* * *E* | *E* / *E* | - *E* | *E*

3: *E* -> num

4: *E* -> id

The above mentioned grammar is implemented in Bison for designing a Programmable Calculator where the precedence and functioning of the operators is as per our convention. Please pick the correct statements (enough for our purpose) from the following list and order them as per Bison so that it preserves syntax, precedence and functioning of the operators as per our convention. For example if you think (D) (H) (I) (M) is enough and follow the order as (H) (I) (M) (D) then write HIMD. There is no part marking for this question. UMINUS is used for unary minus.

(A) %left '+' '-'
(B) %left '*' '/'
(C) %left ‘=’
(D) %left UMINUS
(E) %right '+' '-'
(F) %right '*' '/'
(G) %right ‘=’
(H) %right UMINUS
(I) %nonassoc UMINUS
(J) %nonassoc’=’
(K) %assoc ‘+’ ‘-‘
(L) %assoc ‘*’ ‘/‘
(M) %assoc UMINUS

Answer: ABI

The correct answer is: GABI

Question 6

Correct

Mark 1.00 out of 1.00

Flag question

In the context of Bison, if we denote unary minus as UMINUS and set the proper precedence of UMINUS with respect to other binary operators then the production rule [*E* -> -*E*] can be written as:

Select one:

a. expression: '-' expression %prec UMINUS
{ $1 = -$2; }

b. expression: '-' expression %prec UMINUS
{ $$ = -$2; }

c. expression: '-' expression
{ $$ = -$1; }

d. expression: '-' expression %prec UMINUS
{ $$ = -$1; }

e. expression: '-' expression
{ $1 = -$2; }

The correct answer is: expression: '-' expression %prec UMINUS
{ $$ = -$2; }

Question 7

Correct

Mark 1.00 out of 1.00

Flag question

Source program related new entries are just created at the symbol table at which phase of the compilation process?

Select one:

a. Semantic Analysis

b. Syntax Analysis

c. Lexical Analysis

d. Code Optimization

The correct answer is: Lexical Analysis

Question 8

Incorrect

State whether the following statement is True or False.

Mark 0.00 out of 1.00

Flag question

Symbol table uses attribute information to apply the scope rules to an identifier.

Select one:

- True ✗
- False

The correct answer is 'False'.

Question 9

Correct

Mark 1.00 out of 1.00

Flag question

State whether the following statement is True or False.

One dedicated symbol table is created to store all the static variables if there is any.

Select one:

- True
- False ✓

The correct answer is 'False'.

Question 10

Correct

Mark 1.00 out of 1.00

Flag question

At least how many separate symbol tables are required for a C program consists of four (4) functions.

Answer: 5 ✓

The correct answer is: 5

Question 11

Correct

Mark 1.00 out of 1.00

Flag question

What is the memory size corresponding to a function's (parameters: two integer variables, return type: integer, and no new local variables are declared inside the function) entry into the symbol table? For example for an integer variable it is four (4).

Answer: 0

The correct answer is: 0

Question 12

Correct

Mark 1.00 out of 1.00

Flag question

Fill in the blanks in the following Bison code snippet.

typedef enum {

PLUS = 1,

MINUS,

MULT,

DIV,

UMINUS,

} opcodeType;

The correct answer is: enum

Question 13

Correct

Mark 1.00 out of 1.00

Flag question

1: B $B \mid\mid B$

2: B -> B && B

3: B -> ! B

4: B (B)

5: B E relop E

6: B true

7: B false

For the above Boolean expression grammar, back-patching (after necessary augmentation of the production rules) is required for which production rules.

Select one:

- a. For 6 and 7
- b. For 3 and 4
- c. For all the production rules
- d. For 1 and 2 ✓
- e. For 5

The correct answer is: For 1 and 2

Question 14

Correct

Mark 1.00 out of 1.00

Flag question

State whether the following statement is True or False.

Function Prologue and Function Epilogue is part of code translation.

Select one:

- True ✓
- False

The correct answer is 'True'.

Question 15

Correct

Mark 1.00 out of 1.00

Flag question

Which of the following statements are parts of the Function Epilogue?

1. 1. push ebp
2. 2. pop ebp
3. 3. mov ebp, esp
4. 4. mov esp, ebp
5. 5. sub esp, 12
6. 6. push esi
7. pop esi

Select one:

- a. 2, 3, 5, 6
- b. 2, 4, 7 ✓
- c. 1, 3, 5, 6
- d. 1, 3, 6
- e. 1, 5, 4, 2

The correct answer is: 2, 4, 7

Question 16

Correct

Mark 1.50 out of 1.50

Flag question

In the context of translating three address code to x86, which instructions are required to call a function with one to several parameters. Select all those which are required and write them together without any punctuators/space. There is no part marking for this question.

A. A. mov
B. B. add
C. C. sub
D. D. idiv

E. E. jmp

F. F. call

G. G. push

H. H. pop

I. lea

Answer: ABFG

The correct answer is: AGF

Finish review