10. Generate code for the following basic block using gencode algorithm:

Assuming that two registers are available.

\[ t_1 = t_2 + t_3 \]
\[ t_3 = t_1 \times 2 \]
\[ X = t_1 \]

(b) Explain the meaning of terms like variable and available expression. Which of them is a forward flow expression and which is a backward flow problem?

9. (a) What is meant by reducible flow graph?

(b) Compare call by value result and call by reference parameter passing mechanisms. Can they produce different results? Why?

8. (a) Compare display implementation with static chain pointer implementation.

(Objective-type Questions)

(ii) Both first pass and second pass respectively

1. Choose the correct answer of the following:

(a) In a two pass assembler, adding literal table and address resolution of local symbol are done using:

1. Examine the correctness of the statement.

2. Answer both the groups as directed.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks. Answer from both the Groups as directed.

<table>
<thead>
<tr>
<th>Group - A</th>
<th>Group - B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full Marks: 80</td>
<td>Full Marks: 80</td>
</tr>
<tr>
<td>Time: 3 hours</td>
<td>Time: 3 hours</td>
</tr>
</tbody>
</table>

Turn over|
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(2) Contd.

(i) Linking loader
(ii) Assembler

(d) A system program that combines the separately compiled modules of a program into a form suitable for execution.

(iii) Intermediate code generation
(iv) Code generation
(i) Syntax analysis
(ii) Lexical analysis

(c) Pick the machine independent phase of the compiler:
(d) Not done by assembler
(e) Zerch pass
(f) First pass
(g) Second pass
(h) In two pass assembler, the object code generation is done during the:
(i) Second pass
(ii) Both first pass
(iii) Cross compiler

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(3) Cross compiler

(ii) Syntax analysis
(i) Lexical analysis

(g) Type checking is normally done during:

(ii) Myfile .obj
(iii) Myfile .lex
(iv) Myfile .c
(v) Myfile .e

(f) Output file of the Lex is:

(i) None of the above
(ii) Myfile .lex
(iii) UNIX

(e) Which of the following type of software should be used if you need to create, edit, and print document?

(i) Word processing
(ii) Desktop Publishing
(iii) Spreadsheet

(d) None of above
(c) Load and go
(b) None of the above
(a) Which of the following is normally done during the input stage?
ME-1812

(4)

Cont.

(i) In Lex, a class is complemented by first placing __________.

(ii) None of the above

(iii) Relocator

(iv) Module Loader

(i) Loading process can be divided into two separate programs, to solve some problem. The first is binder, the other is __________.

(iv) UNIX

(iii) DOS

(ii) MINIX

(i) Code generation

(iv) Syntax directed translation

(h) Yacc is available as a command on the __________.


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(5)

(5) Turnover

(a) What is the differences between a compiler and an interpreter?

(b) Code optimization is an optional phase of compilation process. Comment.

2. (a) Consider the following program:

```c
main()
{
    int X, Y, Z;
    Z = X + Y;
}
```

(b) Answer any four questions of the following:

15 x 4 = 60

List down the lexemes, tokens and the attributes of the token, at the end of the following regular expression:

(a | b)* (ab)* b | a + (bb)*
7. (a) Construct the following grammar:

\[ S \rightarrow a B \]

(b) Consider the characteristic of the following terms:

(i) Prefix
(ii) Postfix
(iii) Handed

By giving suitable examples:

6. (a) Construct the meaning of the following terms:

(i) (ab)3 (ab)4
(ii) a b d p a b
(iii) a b d p

(c) Obtain the regular grammar equivalent to the statement:

Comment on the true / falsehood of the

7. (a) Explain why every S-attribute defined in LR(1) parsing table is L-

7. (a) Expressions with suitable examples of short circuit evaluation of boolean attributes:

Discuss the advantages and disadvantages.

4. (a) Eliminate all production from the following grammar:

\[ S \rightarrow a B C \]
\[ B \rightarrow a B C \]
\[ A \rightarrow a B C \]
\[ C \rightarrow a B C \]