2015

MCA

4th SEMESTER EXAMINATION

COMPILER CONSTRUCTION LAB

PAPER—MCA-408

(Practical)

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer any *two* on <u>lottery basis</u>.

1. Write a program in LEX/YACC to check whether a given string is a valid ID (Identifier), Keyword, RELOP (Relational Operation), Array, Function or others.

2. Write a program in LEX / YACC to check whether a given expression (relational or assignment on bitwise operator) is valid or not and it gives the type of expression as output.

3. Write a program in LEX / YACC which takes standard input as output of system date and time and give either of the following messages "Good Morning", "Good Afternoon", "Good Evening".

4. Construct a synatax directed translation scheme that translates integers into roman numerals. Implement translator from integers to roman numerals based on above syntax directed translation using LEX / YACC.

5. Write a LEX / YACC program to count the number of comment lines and space in a given C program.

6. Write a C code analyzer in LEX / YACC: comments, code, white space, count, braces, keywords etc. Try to identify function definition and declaration, which are names followed by '(' outside of any braces.

7. Write programs in LEX / YACC, which replaces all the occurrences of 'vidya' with 'RAMA' and 'sagar' with 'SITA'.

8. Write a LEX / YACC program to count the number of comment lines in a given C program. Also eliminate them and copy that program into separate file.

9. Write a program in LEX / YACC to calculate the FIRST set of a given production.

10. Write a program in LEX / YACC which takes an English sentence as input and gives the output as the parts of speech.

11. Write a program in LEX / YACC which takes a C program as inputs and delete the comment, white space and count the number of lines.

12. Write a program in LEX / YACC which counts the no. of lines, total no. of characters, total no. of vowels and total no. of punctuation marks in a paragraph.

13. Write a program in LEX / YACC to calculate the FOLLOW sets of a given production.

14. Write a program in LEX / YACC to count all occurences of 'rama' and 'sita' in a given file and eliminate them.

15. Write programs in LEX / YACC that remove left recursion from a given grammar.

16. Write a program using LEX / YACC to count all instance of SHE and HE, including the instances of HE that are included in SHE.

17. Write a LEX / YACC program to count the number of terminals and non-terminals of a grammar.

PNB :   10 marks

Viva Voce :   20 marks

———