MCA 5thSemester End Term Examination, 2023

COMPILER DESIGN (PCA05C13)

Full Marks: 50   Time: 2 hours

Group: A

1. How many tokens are there in the following code:

        int min(x,y)
        int x,y;
        * finding min of x and y*/
         {
         return(×>y?x:y);
         }   (2)

2. What is a grammar? Construct a grammar generating palindrome over {0,1}.   (2)

3. Determine whether the following grammar is ambiguous or not:
        i. S → aS/Sala
        Ii. S → aSbS/bSas/€   (2)

4. Eliminate left recursion from the following grammars:
        i. S→ SOS1S/01
        ii. S → (L)/x
           L → L,S/S   (2)

5. Remove Left factoring from the following grammars:
        i. S → iEtS/iEtSeS/a   E→b
        ii. S → aSSbS/aSaSb/abb/b   (2)

Group:B

6. Find the First and Follow of the following grammar:
        I.   S → Bb/Cd
                        B → aB/€
                        C → cC/€
        II.   S → ACB/cbB/Ba
                        A → da/BC
                        B → g/€
                        C → h/€   (2.5*2=5)
7. Determine whether the following grammar is LL(1)
                        S → aABb
                        A → c/€
                        B → d/€   (5)

8. By making a Parsing table, state whether the following grammar is LR(0)　　　　　　　　(5)

　　　　　S → AA
　　　　　A → aA/b

9. Determine whether the following grammar is SLR(1)

　　　　　　　　　　S → dA/aB
　　　　　　　　　　A → bA/c
　　　　　　　　　　B → bB/c　　　　　　　　　　　　　　　　　(5)

Group:C

10. Explain the phases of compiler with example .　　　　　　　　　　　　　　　(10)

11. What is the difference in LL(0), LR(0), SLR(1), CLR(1) and LALR(i) using examples.　　(10)