PRIYADARSHINI COLLEGE OF ENGINEERING, NAGPUR
DEPARTMENT OF COMPUTER TECHNOLOGY
ACADEMIC SESSION: 2022-23 (EVEN SEMESTER)
QUESTION BANK FOR CAT-I

Subject	:	Compiler Design(BTCT601T)	Semester	:	VI - A and B
Subject Teacher	:	Dr.(Mrs)Snehal S.Golait/Mr.C.R.Pote	Date of Display	:	
Unit	:	I, II and III			

Course Outcomes:

After completing the course, students will be able to :

CO1 : Explain basic fundamentals of the translators and role of the lexical analysis.

CO2 : Describe principles of Parsing and will be able design various Top-Down and Bottom-Up Parsers

CO3 : Explain various forms of intermediate code and will be able to demonstrate use of SDTS to translate elementary programming constructs.

Que. No.		Questions	Mapping with CO	BT Level
1.	a)	Explain different types of translators with example.	CO1	II
1.	b)	Explain various phases of compilers comes under front end .	CO1	II
2.	a)	Explain the following terms i) Cross Compilers ii) Bootstrap Compilers iii) Just in time Compiler	CO1	II
2.	b)	Explain various phases of compilers comes under back end .	CO1	II
3.	a)	Explain Top Down Parser with example.	CO2	II
3.	b)	Find the FIRST() and FOLLOW()for the following grammar. S→ aIJh, I → IbSe/c , J→ KLKr/Є , K→ d/ Є , L→p/ Є	CO2	I

4.	a)	Show whether given grammar is LL(1) or not.
		    S → AaAb/BbBa
		    A→ Є
		    B→ Є
			CO2	I

4.	b)	Explain why Top Down Parser is called left most derivative Parser.	CO2	II

5.	a)	Find the reduced grammar equivalent to CFG
		    G = ({S,A,B,C } , { a,b,d} , S, P) where P contains
		    S → AC/SB
		    A→ bASC/a
		    B → aSB/bbC
		    C → Bc/ad
			CO2	I

5. b) Consider the following Grammar   CO2   I

         $E \rightarrow TA$

         $A \rightarrow +TA/\epsilon$

         $T \rightarrow FB$

         $B \rightarrow *FB/\epsilon$

         $F \rightarrow (E)/id$

     Find FIRST() and FOLLOW() for each and every non terminal.

6. a) Compare SLR , C LR and LALR Parser.   CO2   II

6. b) Consider the following grammar: CO2   I

    $S \rightarrow aSbS/ bSaS/\epsilon$

      a) Show that this grammar is ambiguous by constructing two different leftmost derivation for the sentence abab.

7. a) consider the following grammar   CO2   III

    $S \rightarrow ABC$

    $A \rightarrow a/\epsilon$

    $B \rightarrow r/\epsilon$

    $C \rightarrow b/\epsilon$

    Construct parsing table with LL(1) Parser

7. b) Consider the following grammar   CO2   III

    $E \rightarrow CC$

    $C \rightarrow cC$

    $C \rightarrow d$

    Construct LR(0) Parser

8. a) Show Quadruple , Triple and Indirect triples for the following expression .   CO3   I

        $- (a + b) * (c + d) + (a + b + c)$

8. b) Find the TAC for following code :-   CO3   I

    if (B > D and A < C) then P= a+1 else Q= b+1;

9. a) For the given grammar :   CO3   III

     $E \rightarrow E + T/T$

     $T \rightarrow T * F/F$

     $F \rightarrow (E)/id$

    Construct parse tree and syntax tree for string

     $W= id + id * id$

9. b) Differentiate between Synthesized Attributes and Inherited Attributes.   CO3   II

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