ASSIGNEMENT-2 AND MOCK TEST
SYSTEM PROGRAMMING CSX-306

1. A grammar is given below

   S->A

   A->aB/Ad

   B->bBC/f

   C->g

   (a) Find the FIRST and FOLLOW set

   (b) Construct a predictive parsing table

   (c) Trace whether the string "abbfgg" is accepted or not

2. Describe the language denoted by the following regular expressions:

   (i) $a(a|b)^{*}a$

   (ii) $((\varepsilon|a)b^{*})^{*}$

3. (a) Check whether the following grammar is LL(1) or not

   S->iEtSA/a

   A->Es/ε

   E->b

   (b) Find out the FIRST and FOLLOW set for the grammar

4. Give an algorithm for constructing simple LR parsing table. Discuss with the help of example

5. What is intermediate code in compilers? Why is it needed in compiler design? Discuss different type of Intermediate codes generated by intermediate code generation phase.

6. Define "3 address code" and "quadrupules", give the 3 address code and quardrupules for the statement a=-b*d+c+(-b)*d.

7. Find out the Lexical, Syntax and Semantic error in the given code

```
int main()
{
   int 1a, b;
  Printf("\n CSE 2017 batch");
  Printf("%d", x);
 }
```

8. Consider the grammar given below

   $S \longrightarrow SS \mid a \mid \in$

Calculate the inadequate states in the DFA of LR(1) items is