2nd Compiler Design Assignment for 6th Semester, CSE students-2016

Q1:   a) What do you mean by HANDEL? Give a suitable example
   b) Explain about Peep Hole Optimization and its various techniques.

   c) What is Operator Grammar? Write about precedence and associatively in operator precedence grammar.
   d) Write the Three Address Code (TAC) for following code snippet.

```
     Prod=0;
     k=1;
while (k<20)
{
        Prod=prod + a[k] + b[k];
        K++;
}
```

Q2: What is Basic Block? Construct a flow graph for the TAC of the above question (Q1. d).

Q3: What are the various loop optimization techniques like, Loop Jamming, Loop Unrolling and Code Motion, explain with suitable example?

Q4: Construct the LALR parser for following grammar and check whether the grammar is LALR or not

   $S \rightarrow a \mid \text{^} \mid (R)$

   $T \rightarrow S ; T \mid S$
   $R \rightarrow T$

Q5. What do you mean Boot strapping, explain with an example?

Q6. What is the use of symbol table and what are various data structures used in symbol table.

Q7. Write short notes on Run Time Environment.

Q10. What is UD-chain (Use Definition Chain)?

Q11. Construct a CLR (Canonical LR) parse table for the following grammar

   $S \rightarrow AaAb \mid BbBa$

   $A \rightarrow \epsilon$

   $B \rightarrow \epsilon$

N: B- All the questions in 2nd internal examination will be from this assignment only. However, the order and no. of questions in internal exam may vary. So, I expect you all will prepare well.

Rashmi Ranjan Sahoo
Assistant Professor,
Department of CSE,
PMEC, Berhampur
Email: rashmiranjan.cse@pmec.ac.in