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**B.Tech.**
**PCCS4203**

**4th Semester Back Examination 2017-18**
**SYSTEM PROGRAMMING**
**BRANCH : CSE, IT, ITE**
**Time : 3 Hours**
**Max Marks : 70**
**Q.CODE : C1138**
**Answer Question No.1 which is compulsory and any five from the rest.**
**The figures in the right hand margin indicate marks.**
**Answer all parts of a question at a place.**

**Q1** **Answer the following questions :** **(2 x 10)**
  **a)** What are the features of System Programming?
  **b)** Represent the number 357 using packed decimal format.
  **c)** Differentiate between pseudo op and machine op.
  **d)** What is the function of two pass assembler?
  **e)** Differentiate between controlled storage and based storage.
  **f)** What are terminals and non terminals of a grammer?
  **g)** List out advantages and disadvantages of absolute loader.
  **h)** Define look ahead operator.
  **i)** Explain the role of macro processor.
  **j)** What is the difference between parse tree and syntax tree?

**Q2** **a)** Explain lexical analysis of a language processor. **(5)**
  **b)** Explain left recursion and left factoring with suitable example. **(5)**

**Q3** **a)** Write algorithm for operator precedence parsing and explain with example. **(5)**
  **b)** Explain Design of Macro Preprocessor. **(5)**

**Q4** **a)** Explain assembly scheme with suitable example **(5)**
  **b)** Explain dynamic linking. Draw the flaw chart for dynamic linking. **(5)**

**Q5** **a)** Explain linking and loading in MS DOS **(5)**
  **b)** Define forward references. How it can be solved using back-patching? Explain with example. **(5)**

**Q6** **a)** Explain design of a linker by addressing issues of relocation and linking **(5)**
  **b)** Explain various phases of compiler in detail. **(5)**

**Q7** Describe different code optimization techniques. **(10)**

**Q8** **Write short answer on any TWO :** **(5 x 2)**
  **a)** Recursive descent parsing algorithm
  **b)** MS-DOS Linker
  **c)** Dynamic debugging
  **d)** YACC