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Total Number of Pages : 02

B.Tech
PCS31103

3rd Semester Regular / Back Examination 2018-19

SYSTEM PROGRAMMING

BRANCH : CSE

Time : 3 Hours

Max Marks : 100

Q.CODE : E788

Answer Question No.1 (Part-1) which is compulsory, any eight from Part-II and any two from Part-III.

The figures in the right hand margin indicate marks.

Part- I

Q1 Short Answer Type Questions (Answer All-10) (2 x 10)

- What do you mean by symbol table? Why is it used?
- Describe the terms: System and Application Programming
- Differentiate between Macro and Subroutine.
- What do you understand by parse tree? Differentiate between parse tree and syntax tree.
- List the functions of a loader.
- Highlight the role of a linker in program execution.
- Differentiate between relocatable and self-relocating programs.
- What is the purpose of system calls?
- What do you mean by multi-window editor?
- What do you mean by an Integrated Development Environment (IDE)?

Part- II

Q2 Focused-Short Answer Type Questions- (Answer Any Eight out of Twelve) (6 x 8)

- What are the various booting techniques? Explain details about sub-routines.
- What data-structures are required in Pass 1 of an assembler for the purpose of assembly? Describe in brief.
- Highlight the importance of Operating Systems. Explain the structure of an Operating System.
- What is the purpose of code generation phase? Explain with an example.
- Explain two-pass direct linking loader scheme with the help of a block diagram.
- Explain the features of PL/I that are relevant to system programming, with an example from each.
- Explain why formal systems are used in programming languages with a brief description of different sorts of formal systems.
- Recognize the tokens, uniform symbols and syntactic units of the following code:
WCM: PROCEDURE (RATE, START, FINISH);
 DECLARE (COST, RATE, START, FINISH) FIXED BINARY(31)
 STATIC;
 COST = RATE * (START – FINISH) + 2* RATE*(START – FINISH –
 100);
 RETURN (COST);
 END;
- What is the utility of debugging? Justify your answer with any case study.
- What are the various kinds of editors? Explain any one with an example.
- Explain different instruction formats of IBM 360/370 machine.
- Explain address modification using instruction as data.

Part-III

Long Answer Type Questions (Answer Any Two out of Four)

Q3 What are the three major areas in which the Operating System divides its services? Give examples and explain. **(16)**

Q4 What are the various loader schemes? Explain each scheme with the help of a diagram. **(16)**

Q5 Explain when variables are allocated and freed, with sufficient reasons, for each of the following : **(16)**

- (a) Static ; (b) Controlled ; (c) Automatic ; (d) Based

Also highlight the similarities and differences between controlled and based storage.

Q6 Describe different software tools for program development giving an example from each. **(16)**