# Paper ID [A0462]

(Please fill this Paper ID in OMR Sheet)

## B.Tech. (Sem. - 4th)
## SYSTEM PROGRAMMING (CS - 210)

**Time : 03 Hours**                                       **Maximum  Marks : 60**

**Instruction to Candidates:**

1) Section - A is **Compulsory.**

2) Attempt any **Four** questions from Section - B.

3) Attempt any **Two** questions from Section - C.

### Section - A

*Q1)*                                                    *(10 × 2 = 20)*

a) What are the salient features of VI editor?

b) What are the different data structures used in the design of Assembler?

c) What is the need of symbol table?

d) What are the various errors seen in lexical analysis phase of compiler?

e) Define loop invariant computations.

f) List the various techniques used for debugging.

g) What is dynamic linking?

h) List the names of atleast ten operating systems.

i) What do you understand by booting of a machine?

j) What is the purpose of system calls?

## Section - B

*Q2)* Discuss with the help of examples different types of intermediate forms used by compilers.

*Q3)* What are relocating loaders? How the subroutine linkages are performed? Explain with example.

*Q4)* What problem is encountered when symbols in Assembler are used before their definition? How is this problem overcome.

*Q5)* What do you understand by free space management techniques? Explain them.

*Q6)* Design a minimum state deterministic finite automata (DFA) for accepting those strings over alphabet {a,b} whose last but one symbol is 'b'.

## Section - C

(2 × 10 = 20)

*Q7)* Describe the actions taken by a thread to context switch between kernel-level threads.

*Q8)* Discuss the design of one pass macro assembler.

*Q9)* What are the features of system programming? Compare it with application programming.

⊗ ⊗ ⊗ ⊗