

**D 26592**

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Name.....

Reg. No.....

**COMBINED FIRST AND SECOND SEMESTER B.TECH. (ENGINEERING)  
DEGREE EXAMINATION, DECEMBER 2006**

**CS 04 108—COMPUTER PROGRAMMING IN C**

(CS, IT, PT)

[2004 admissions]

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

- I. (a) Write the steps involved in computer program.  
(b) Briefly explain the functional unit of a computer.  
(c) Write the similarities between looping instructions while and do . . . while and write the differences between them.  
(d) Discuss the role of break and continue statements in C.  
(e) Write the steps, which insert an element between two two element of a linked list satisfying certain conditions and also the statement to delete an element in the linked list.  
(f) Explain the concept of recursion with an example.  
(g) Distinguish between sequential and random access file.  
(h) Discuss with examples the various I/O error handling procedures.

(8 × 5 = 40 marks)

**Part B**

- II. (a) (i) Discuss the various program design methods with their use. (10 marks)  
(ii) Explain the procedure to measure efficiency of algorithms. (5 marks)

*Or*

- (b) (i) Write the flowchart of the problem of finding first and next minimum of 100 integers. (8 marks)  
(ii) Discuss the role operating system. (7 marks)

- III. (a) (i) Write a program, which reads 100 pairs of integers and finds that how many pairs are relatively primes. (10 marks)

- (ii) Write the role of implicit type conversion with examples of its usage. (5 marks)

*Or*

- (b) Write a program, which reads to matrices A and B and checks that whether one is inverse of the other, which uses function. (15 marks)

**Turn over**

IV. (a) Explain with examples the various functions used in dynamic memory allocation with their use.

(15 marks)

Or

(b) Write a program, which reads 50 persons name, age and salary and sort them in the ascending order of salary. Also list the details of persons with  $25 \leq \text{age} \leq 45$  and  $2000 \leq \text{salary} \leq 5000$ .

(15 marks)

V. (a) Write a program, which (i) creates a file of records with each record has fields name, age, salary and deduction ; (ii) sorts in the ascending order of name ; and (iii) displays the details of persons with deduction lying between Rs. 5,000 and 7,000 and age lying between 25 and 35.

(15 marks)

Or

(b) Explain briefly how signals and interrupts are handled by UNIX system calls. (15 marks)

[4 × 15 = 60 m.]