

[07 - 3114]

III/IV B.Tech. DEGREE EXAMINATION.

First Semester

Computer Science and Engineering

FILE STRUCTURES

(Common with IT and Dual Degree Program in SE/IT)

(Effective from the admitted batch of 2006-2007)

Time : Three hours

Maximum : 70 marks

Question No. 1 is compulsory.

Answer any FOUR from the remaining.

All questions carry equal marks.

Answer all parts of any question at one place.

1. Answer the following in brief: (7 × 2 = 14)
  - (a) Write a program to count the no. of characters in a file.
  - (b) List out the performance measures of disks.
  - (c) Write different methods for creating Hash Functions.
  - (d) Differentiate between file access and file organization.

- (e) Explain Double buffering.
- (f) List out different types of indexes.
- (g) Differentiate between B - Trees and B<sup>+</sup> - Trees.
2. (a) Explain the organization of CD-ROM. (10)  
 (b) Explain strengths and weakness of CD-ROMS. (4)
3. (a) Explain Buffering strategies. (7)  
 (b) Explain different methods of field organization in files. (7)
4. (a) Explain sequential and direct access search with an example. (7)  
 (b) Explain the methods for organizing the records of a file. (7)
5. (a) What do you mean by space fragmentation? Explain. (7)  
 (b) Write about replacement strategies. (7)
6. (a) Explain operations on indexed sequential file in detail. (10)  
 (b) Explain uses of inverted lists. (4)
7. Construct a B tree of order 4 for the following sequence of keys 5, 3, 21, 9, 1, 13, 7, 10, 12, 4, 8. Show the steps involved in deleting of keys 2, 21, 10, 3, 4. (14)

8. Consider inserting the keys 10, 22, 31, 4, 15, 28, 17, 88 and 59 into a hash table of length  $m = 11$  using open addressing with the primary hash function  $h'(k) = k \bmod m$ . Illustrate the result of inserting these keys using linear probing, using quadratic probing with  $c_1 = 1$  and  $c_2 = 3$  and using double hashing with  $h_2(k) = 1 + (k \bmod (m - 1))$ . (14)