

**Third Year Examination of the
Three -Year Degree Course, 2001**

(Faculty of Science)

COMPUTER SCIENCE

Paper-I

(Operating System & Fundamentals of 'C' Programming)

Time : 3 Hours

[Maximum Marks :50]

Attempt **five** questions in all.
selecting at least **one** question from each unit ,
All questions carry equal marks.

UNIT-I

1. (a) What do you understand by Software? Give the classification of Software.
(b) Draw a block diagram of the phases of a compiler and indicate main function of each phase.
2. (a) Explain contiguous allocation method.
(b) What are the major activities of an operating system in context to the file management?

UNIT-II

3. (a) What are the main advantages of multiprogramming
(b) Explain the features of UNIX Operating System.
4. (a) Discuss the evolution of MS-DOS
(b) Distinguish between external and internal commands.
(c) Describe how MS-DOS hierarchical file system is organized.

UNIT-III

5. (a) Discuss that 'C' is relatively a low level lanugage.
(b) Discuss the main features of the 'C' programming language.
- 6.(a) Givne a 5 digit integer. Write a 'C' program to print it in reverse order (for example given 92345 the result should be 54329).
(b) Write function to add, subtract, multiply and divide the two complex number $(x+iy)$ and $(a+ib)$.

UNIT-IV

7. Write a function to validate the elements of a matrix of size $n \times n$. The validation rules are :
- (i) All diagonal entries should be positive.
 - (ii) The matrix should be symmetric
 - (iii) All the non-diagonal elements should be negative or zero.
8. Write a recursive function in 'C' to find Greatest Common Division (GCD) of two positive integers and hence explain the process of recursion.

UNIT-V

9. Write function in 'C' to retrieve a record with specified key using files.
10. Create a structure to store employee's data with the following information:-
Employees No, Employees name, employee pay, date of joining (which is itself a structure)
It is decided to increase the pay as per the following rules :-
- | | |
|---------------------------|--------------|
| pay<=Rs. 2,000 | 15% increase |
| pay>=Rs. 5,000 but >2,000 | 10% increase |
| pay>5,000 | no increase |
- Write 'C' program to print details of employees who have completed 20 years of service.