

Exam.Code:0905

Sub. Code: 6657

1128

B.E. (Computer Science and Engineering)

First Semester

CS-102: Introduction to Computer Engineering

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting two questions from each Unit.

x-x-x

I. Attempt the following:-

- a) How is compiler different from interpreter?
- b) Name and explain the purpose of any four utility programs used on a personal computer.
- c) Explain LAN topology with the help of a diagram.
- d) What is the relation between a flow chart, an algorithm and program?
- e) What is Moodle? Describe its role in E-learning. (5x2)

UNIT - I

II. a) What is the purpose of Central Processing Unit in a Computer? What are the components of a CPU? What effect did Integrated circuit technology had on CPU? Explain your answer.

b) Differentiate between the following :

- (i) Desktop Computer vs Mainframe Computer
- (ii) Impact printers vs non-impact printers

(5,5)

III. a) Convert the following decimal numbers to equivalent binary and hexadecimal numbers  
i) 225                      ii) 62.5

b) What is software process? Explain phases of Software Development Life Cycle? (5,5)

IV. a) Explain the different types of main memories that are part of a computer system. What is cache memory? How does cache memory improve the performance of a computer? Why do we need different types of memories in our computers? Can't we use only cache or only RAM or only hard disks?

b) What is computation in computer science? Why do we need to study theory of computation? List various applications of theory of computation. (5,5)

P.T.O.

(2)

**UNIT – II**

- V. a) A District has two high schools—S1 and S2. Each school maintains a student file with fields containing student ID, last name, first name, and address. Each file is in student ID number order.  
Design logic for a program that merges the two files into one file containing a list of all students in the district, maintaining student ID number order.  
Take necessary care for errors and testing.
- b) Compare and contrast linear data structure and non-linear data structure with suitable examples. (5,5)
- VI. a) What is a computer network? What are its advantages? Differentiate between guided and unguided data transmission channels.
- b) What is an Open Source Development Model? Describe any six features of this model. (5,5)
- VII. a) Create flowchart for a program that continuously prompts user for number of rupees until user enters 0. Pass each entered amount to a conversion method that displays a breakdown of passed amount into fewest possible combinations, in other words the method calculates the number of 10s, 5s and 1s needed. (For eg. for an entered amount of Rs 23, result shall be 2 x 10 and 3x1).
- b) Draw a flow chart for a program that calculates the prime factors of a number. (5,5)

x-x-x