

**F.Y. B. SC. (COMPUTER SCIENCE) SEM – I (CBCS - 2016
COURSE) : SUMMER - 2018
SUBJECT : ELECTIVE – III : ELEMENTARY ALGORITHMICS**

Day : **Thursday**
Date : **03/05/2018**

Time : **11.00 A.M. TO 02.00 PM**
Max. Marks : 60

S-2018-0800

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw neat and labeled diagrams wherever necessary.

Q.1 A) Select the correct option and rewrite the complete sentence: **(06)**

- a) Merge sort uses _____.
 - i) Greedy approach
 - ii) Backtracking
 - iii) Divide and conquer
 - iv) Heuristic approach
- b) Flowchart and algorithms are used for _____.
 - i) efficient coding
 - ii) testing
 - iii) software
 - iv) input data
- c) _____ is collection of similar data type.
 - i) string
 - ii) program
 - iii) array
 - iv) sorting
- d) A phrase or word that reads the same backward and forward known as _____.
 - i) reverse
 - ii) prime
 - iii) recursive
 - iv) palindrome
- e) _____ symbol is used to represent output in a flowchart.
 - i) square
 - ii) circle
 - iii) parallelogram
 - iv) triangle
- f) Binary search algorithm cannot be applied to _____.
 - i) sorted linked list
 - ii) sorted binary trees
 - iii) sorted linear array
 - iv) pointer array

B) Answer all the questions in one sentence. **(06)**

- a) What is a program?
- b) Define flowchart.
- c) Write the purpose of connector symbol used in flowchart.
- d) Which number is prime?
- e) What is a pseudo code?
- f) Define sorting.

Q.2 Answer any **THREE** of the following: **(12)**

- a) Illustrate recursive algorithm with suitable example.
- b) Explain binary search with proper example.
- c) Write a pseudo code to find sum of first 10 numbers.
- d) Draw flowchart to find reverse of given number.

P.T.O.

Q.3 Answer any **FOUR** of the following: (12)

- a) Write an algorithm which calculate net salary of an employee.
- b) Draw a flowchart to find square and cube of a given number.
- c) Write a code for accept a string and count total numbers of characters in it.
- d) Explain features of algorithm.
- e) Write an algorithm to find factorial of a number.

Q.4 Answer any **TWO** of the following: (12)

- a) Write a pseudo code to find whether the given number is Armstrong or not.
- b) Explain Bubble sort with suitable example.
- c) Describe the advantages and disadvantages of flowchart.

Q.5 Answer any **TWO** of the following: (12)

- a) Draw a flowchart to find GCD between two numbers.
- b) Write an algorithm and draw flowchart to find maximum number between three numbers.
- c) Explain the features of pseudo code.

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