

**F.Y. B. SC. (COMPUTER SCIENCE) SEM – I (CBCS - 2016
COURSE) : WINTER - 2017
SUBJECT : ELECTIVE – III : ELEMENTARY ALGORITHMICS**

Day **Monday**
Date **13/11/2017**

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

W-2017-0708

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) An algorithm represented in the form of programming language is _____.
i) flowchart ii) Pseudo code
iii) Program iv) None of these
- b) _____ is not a stable sorting algorithm.
i) insertion sort ii) bubble sort
iii) merge sort iv) selection sort
- c) Diamond symbol is used for _____.
i) input ii) process
iii) decision iv) terminal
- d) Finding the location of a given item in a collection of items is called _____.
i) discovering ii) finding
iii) searching iv) mining
- e) Arrangement of data into a specific order is classified as _____.
i) sorting ii) ordering
iii) learning iv) enquiring
- f) Partition and exchange sort is _____.
i) quick sort ii) tree sort
iii) heap sort iv) shell sort

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

- a) Define algorithm.
- b) What is a problem?
- c) State the advantage of flowchart.
- d) Write a code to check whether the given number is even or odd.
- e) What is an array?
- f) What is a pseudo code?

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

- a) Explain the bubble sort with an example.
- b) Write an algorithm to find average of 'n' number using an array.
- c) Describe linear search with suitable example.
- d) Explain the structure of procedure oriented language.

P.T.O.

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

- a) Draw a flowchart to find Fibonacci of given number.
- b) Draw a flowchart to find sum of given number.
- c) Write a pseudo to find minimum number between three numbers.
- d) Explain recursive concept with example.
- e) Write an algorithm to calculate simple interest.

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

- a) Describe insertion sort with example.
- b) Write a pseudo to find LCM between given two numbers.
- c) Explain flowchart symbols in detail.

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

- a) Write a pseudo code for counting each vowel separately in the given string.
- b) Describe features of an algorithm with advantages and disadvantages.
- c) Draw a flowchart and algorithm to find a given number is palindrome or not.