Total No. of Questions : 12]

SEAT No. :

P1791

[Total No. of Pages :2

[4761] - 103

First Year M.C.A. (Engineering)

PRINCIPLES OF PROGRAMMING PRACTICES

(2013 Course) (Semester - I) (310903)

Time : 3 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right indicate full marks.***
4) ***Assume suitable data if necessary.***

Q1) a) Define: **[3]**

i) Hardware

ii) Software

iii) Firmware

b) Explain: **[4]**

i) Machine level language

ii) Assembly language

OR

Q2) a) Compare language C & C++. **[3]**

b) Which are the software development steps? **[4]**

Q3) a) What are the 6 steps of problem solving. **[6]**

b) Explain: **[4]**

i) Volatile memory

ii) Buffer

OR

Q4) a) What is an algorithm? What are the advantages of writing an algorithm. **[4]**

b) Why documentation is required? State its benefits. **[6]**

P.T.O.

Q5) a) Explain local and global variables with example. **[4]**

b) What is top-down and bottom-up approach? **[4]**

OR

Q6) a) Discuss selection and iterative structures in detail. **[4]**

b) Write a program which uses a recursive algorithm. Explain how subroutines are generated? **[4]**

Q7) a) Write an algorithm for reversing digits of a number. **[5]**

b) What is flowchart? Explain with example. List all the symbols used to draw a flow chart. **[5]**

OR

Q8) a) Write an algorithm for the exchange of values of two variables with or without third variable. **[5]**

b) Write an algorithm to find perfect number. **[5]**

Q9) a) Define time complexity with example. **[4]**

b) Define asymptotic notations: **[4]**

i) Big 'Oh'.

ii) Theta.

OR

Q10)a) Describe in brief time and space complexity. **[4]**

b) Write an algorithm to find a missing number. Find frequency count of each step. **[4]**

Q11)a) What is binary search. **[3]**

b) Compare testing and debugging. **[4]**

OR

Q12)a) Assume base address 1000. Find the address of m[1][2] of the array m[4][3]. **[3]**

b) Explain merge sort algorithm. **[4]**