



PAPER ID : 1305

TCS-201

Printed Pages : 3

Paper ID and Roll No. to be filled in your Answer Book.

Roll No.

--	--	--	--	--	--	--	--	--	--	--	--

B. Tech.

(SEM. II) (EVEN SEM.) EXAMINATION, 2013
**FUNDAMENTALS OF COMPUTER &
PROGRAMMING**

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions, the marks assigned to each question is indicated at question itself.

- 1 Attempt any four parts : 5×4
- (a) Draw the block diagram of basic computer system and explain its components.
 - (b) Convert: $(235.25)_{10} = (\quad ? \quad)_{16}$
 - (c) Write the additive method of subtraction using 2's complement with an example.
 - (d) Compare: DOS, Windows and UNIX operating system.
 - (e) Explain the features of a mainframe computer.
 - (f) Explain the IEEE standards for signed and unsigned numbers.
- 2 Attempt any four parts : 5×4
- (a) Explain the program control structure in problem solving with suitable examples.
 - (b) Describe the characteristics of an algorithm.
 - (c) Draw the flow chart to check whether given number is prime or not.
 - (d) Enlist the various components used to design flow diagram and explain them briefly.

- (e) Write the output of following program:

```
int a=10, b=8, c;
c=a++ + b + a++;
printf("%d", c);
c=++a + b + ++c;
printf("%d", c);
```
- (f) Differentiate between compiler, interpreter and assembler.

3 Attempt any two parts : 10×2

- (a) Write for, while and do while loops to print all the English alphabets in lower case.
- (b) Explain the difference between call by value and call by reference for passing the arguments. Write a function "swap" that interchange the values of two variables.
- (c) Explain the following and give their syntax in 'C':
 (i) putchar and getchar
 (ii) switch and break statements
 (iii) assignment operators
 (iv) formatted I/O statements

4 Attempt any two parts : 10×2

- (a) How do you define "array" and where do you use this data structure. Give syntax with suitable example.
- (b) What are the uses of structures? Write a program to display student details, faculty details and administrative staff details using structures.
- (c) Explain the concept of pointers with their advantages. Explain with example how pointers are passed to a function.

5 Attempt any two parts : 10×2

- (a) Write the difference between dynamic memory allocation and static memory allocation. Explain the malloc(), calloc() and free() functions with the help of examples.
- (b) Write a 'C' program which stores 'n' records in a file with the following structure
 struct student

```
{
char name [20]
int roll no.;
int marks [5];
int total;
}
```

and print them in following format:

name	roll no.	total marks
.....
.....

- (c) Differentiate between:
 (i) fread() and fscanf()
 (ii) fwrite() and fprintf()
 (iii) getw() and putw()
 (iv) fseek() and ftell()