

# C.U.SHAH UNIVERSITY

## Winter Examination-2015

Subject Name: Fundamentals in Computer Programming

Subject Code: 4TE01FCP1

Branch: B.Tech (All)

Semester: 1 Date: 9/12/2015 Time: 10:30 To 1:30

Marks: 70

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
- (2) Instructions written on main answer book are strictly to be obeyed.
- (3) Draw neat diagrams and figures (if necessary) at right places.
- (4) Assume suitable data if needed.

**Q-1 Attempt the following questions: (14)**

- a) The list of coded instructions is called  
(i) Computer Program (ii) Algorithm (iii) Flowchart (iv) Utility Program
- b) What will be the output of following statement?  
`Printf(“%X%x%c%x”,11,10,’s’,12);`  
(i) error (ii) basc (iii) Bas94c (iv) none of these
- c) Which will be the output of following program?  
`void main() { int i=20; printf(“%d\n” sizeof(i)) }`  
(i) 2 (ii) 4 (iii) 20 (iv) None of above
- d) Find the output of the following c program?  
`int main(){ int i=4,ans; ans=++i+ ++i + ++i; printf(“%d”, ans) return 0; }`  
(i) 21 (ii) 18 (iii) 15 (iv) None of these
- e) What is the final value of x when the code `int x; for(x=0;x<=10;x++){ }` is run ?  
(i) 10 (ii) 9 (iii) 0 (iv) 11
- f) Define recursion.
- g) Which one of the following will read a character from the keyboard and will store it in the variable C?  
(i). `c = getch();` (ii). `C = getchar();` (iii). `c = getchar(stdin);` (iv). `getchar(&c);`
- h) What number is equivalent to  $4e3$ ?  
(i) 40 (ii) 0.004 (iii) 400 (iv) 4000
- i) Which language is written as string of binary 1s and 0s?  
(i) High Level Language (ii) Assembly Language  
(iii) Machine Language (iv) None of the above
- j) In switch statement, each case instance value must be \_\_\_\_\_?  
(i) Constant (ii) Variable (iii) Special Symbol (iv) None of these
- k) What is null statement? Give an example.
- l) What is an array?
- m) Which of the following cannot be a structure member?  
(i) Another structure (ii) Function  
(iii) Array (iv) None of the mentioned



- n) What will be output of following program  
 int i=4; printf("%d\t%d\t%d\t%d\t",i,i--,--i);  
 (i). Error (ii). 2,3,3 (iii). 3,2,1 (iv). None of Above

**Attempt any four questions from Q-2 to Q-8**

**Q-2 Attempt all questions**

- (a) What is computer? Explain the block diagram of computer in detail. (05)  
 (b) Give the differences between compiler and interpreter. (04)  
 (c) Draw the flowchart to find the Greatest Common Divisor (GCD) of a given two integer numbers. (05)

**Q-3 Attempt all questions**

- (a) What is token? List out the tokens available in C. (03)  
 (b) Write a C program to generate Pascal's triangle. (05)

```
1
1 1
1 2 1
1 3 3 1
1 4 6 4 1
1 5 10 10 5 1
1 6 15 20 15 6 1
```

- (c) Compare entry controlled and exit controlled loops with example. (06)

**Q-4 Attempt all questions**

- (a) Explain break, continue and goto statement with an example. (06)  
 (b) Explain strcat(), strcpy() and strcmp() functions with an example. (06)  
 (c) Explain the ?: (conditional operator) operator with an example. (02)

**Q-5 Attempt all questions**

- (a) The main is a user-defined function. How does it differ from other user-defined functions? (03)  
 (b) Explain given variable storage classes: Automatic variable, External variable, Static variable and Register variable. (04)  
 (c) Define a structure that can describe a hotel with members name, address, grade, average room charges and number of rooms. Write a C function to print the details of the hotel with room charges less than a given value. [Assume that the value is given by the user] (07)

**Q-6 Attempt all questions**

- (a) Is a struct type in C is a built-in data type? How does a structure differ from array and union? (07)  
 (b) Write a user defined function in C that can be called to find the largest element of an mXn matrix. (07)

**Q-7 Attempt all questions**

- (a) What are the common uses of rewind, ftell and fseek functions? (03)  
 (b) Given the following code block: (04)  
 int x=10, y=10;  
 int \*p1=&x, \*p2=&y;  
 printf("%d %d %d %d", (\*p1)++, --(\*p2), \*p1 + (\*p2)--, ++(\*p2)-\*p1);  
 What will be the output?



(c) Write the benefits of the pointer to the programmer. (07)

**Q-8**

**Attempt all questions**

(a) Explain malloc(), calloc() and free() functions with their syntax. (03)

(b) Explain command line arguments with an example. (04)

(c) Write a function in C using pointer parameters that reverses the elements of a given array. (07)

