

Government College of Engineering, Amravati
(An Autonomous Institute of Government of Maharashtra)

First Semester B. Tech. (All Branches)

Winter – 2016

Course Code: CSU101

Course Name: Computer Science

Time: 2 Hrs. 30 Min.

Max. Marks: 60

Instructions to Candidate

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary and clearly state the assumptions made.
- 3) Diagrams/sketches should be given wherever necessary.
- 4) Use of logarithmic table, drawing instruments and non-programmable calculators is permitted.
- 5) Figures to the right indicate full marks.

1. Solve any two

- a) What is operator? Explain different types of operator available in C 06
- b) Explain basic Built-in Data Types in C 06
- c) Write a program to calculate simple interest $(SI = p * n * r / 100)$ 06

2. Solve any two

- a) Write program using If else to grade the student according to the following rules 06

Contd..

Marks			Grade	
70	to	100	DISTINCTION	
60	to	69	IST	CLASS
50	to	59	IIND	CLASS
40	to	49	PASS	CLASS
0 to 39			FAIL	

b) Differentiate between break and continue statement with example? 06

c) List and explain with example different parameters passing techniques? 06

3 Solve any two

a) Explain various storage classes in C

b) Write a program to find smallest element in array of 10 elements. 06

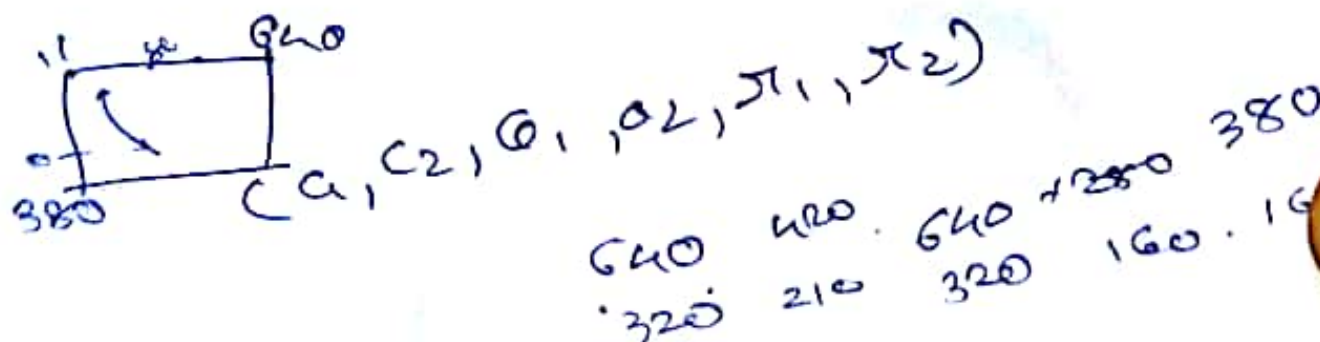
c) Write a program to find the transpose of a matrix. 06

4 a) What is array of pointers and pointers to array? 06

b) Write a user define function to reverse the string 06

5 a) Write a program to accept name, age, address, salary of 100 employees and print the total and average salary. Make use of structure concept. 06

b) Write a program C graphics program to draws basic shapes such as circle, line, rectangle, ellipse 06



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I. Solve

- a. Describe the meaning of following Built-in data types of 16 bit computers along with their size and range. 6

(i) char (ii) int (iii) float

- b. Explain the meaning of each one of the following instruction in the program. What does these program print? 6

(i) main ()

```
{  
    int x=10, y=15, a, b;  
    a=x++;  
    b=++y;  
    printf("%d%d\n", a, b);  
}
```


(ii) main ()

```
{  
int x=100,y=20,z=300,w=40;  
printf("%d\n%d\n%d\n%d\t%d",x,y,z,w);  
printf("\t%d\n\t%d\n\t%d",x,y,z,w);  
}
```

2. Solve

a. What is the purpose of using break and continue statements in C? Explain with example. 6

b. Write a function that will calculate and display the real roots of the quadratic equation $ax^2+bx+c=0$. 6

3. Solve

a. Write a program in C to reorder the elements of an one-dimensional integer array in descending order. 6

OR

b. Write the features of different storage classes in C. explain with examples the difference between:

(i) automatic and static variables.

(ii) Static and external variable. 6

c. Write a program in C to copy the contents one string to another and display both strings using pointer. 6

4. Solve

a. Explain the meaning of following declarations.

(i) int *p

(ii) int * p[10]

(iii) int(*p) [10]

(iv) int *p(void)

(v) int p(char *a)

(vi) int *p(char *a) 6

$$x^2 - 7x + 12 = 0$$
$$x = 2, 4$$

- b. Describe the rules of pointer arithmetic with 6
suitable examples.

OR

- c. Define structure called cricket that describes the 6
following information:
(i) player name (ii) team name (iii) batting average
Write a program to read and print the information
about all 11 players of a team.

5. Solve

- a. What are command line arguments? Describe the 6
information represented by each formal arguments
in function main with suitable an example.
- b. Write a C program to read the file called 6
NUMBERS containing series of 20 integer
numbers and then write the odd numbers to a file
called ODD and all even numbers to a file called
EVEN.

OR

- c. Write a program to draw rectangle with red color 6
and circle with blue color.

39 blk 3

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- a) What is operator? Explain different types of operator available in C 06
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($SI = p \times n \times r / 100$)

2. Solve any two

- a) Write program using If else to grade the student according to the following rules 06

$$\frac{2000 \times 344 \times 126}{100} \times 104$$

Write a function to calculate the sum of 2, 2 and 3 where

OR

Write a program to calculate the sum of Global Variable and Local Variable with program.

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- b) Explain basic Built-in Data Types in C 06
- c) Write a program to calculate simple interest (SI= $p \times n \times r / 100$) 06

2. Solve any two

- a) Write program using If else to grade the student according to the following rules 06

Contd..

is difference between ... the keyboard. Write a function to obt

kk (1)

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1. Solve any two

- a) What is operator? Explain different types of operator available in C **06**
- b) Explain basic Built-in Data Types in C **06**
- c) Write a program to calculate simple interest **06**
($SI = p \cdot n \cdot r / 100$)

2 Solve any two

- a) Write program using If else to grade the student according to the following rules **06**

Contd.

First Semester B. Tech. (ALL)

Winter - 2015

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Course Name: CSU101

Time: 2 Hrs. 30 Min.*

Max. Marks: 60*

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1 Solve:

(a) i) List the keywords and variables for the given program 2m

ii) Find associativity of the operators: Conditional, Assignment and Bitwise AND 3m

(b) Write down the instructions available in C 4m

(c) How many "Reserved words" are available in C? 3m
Write down any four built-in data types in C

Contd..

(a) What is a function? Explain it with suitable example.

(b) Write a C program for checking whether an entered number is prime number or not, using while loop (Use break if possible)

(c) Write a C program to print the given star pattern using nested for loop

```
1 2 3 4
1 2 3
1 2
1
```

3 Solve:

(a) Explain storage classes in brief with their storage, default initial value, scope and life 8m

(b) Write a C program with a function to sort an array in ascending order. 4m

OR

(c) Define strings. List all its standard library functions and explain any one of it with an example 4m

4 Solve:

(a) i) Define pointer arithmetic 2m

OR

ii) Fill In The Blanks: A String is terminated by _____ character, which is written as _____.

(b) Assume that the two variables r and s are stored at 1000 and 2000 memory address respectively 4m

If `int r=30; int *p=&r; int *s=&p`

Write down the outputs for the given terms - r, s, &r, &s, *p, *s, *(&r), *(&s)

- (c) Write a C Program to find length of a string 6m
without using library function (Use Pointers)

5 Solve any two:

- (a) Write a C Program to print name, prices and 6m
pages for 100 books stored in a library, using
array of structures

- (b) Define graphics mode and initgraph() function. 6m
Write a C program for drawing a line and printing
its slope using graphics in C

- (c) Explain "r", "w" and "a" opening modes of file in 6m
detail

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Handwritten calculation:
 $500 \times 2 \times 10$

 10000