

Reg No.: _____

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APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
SECOND SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2018

Course Code: CS100

Course Name: COMPUTER PROGRAMMING (CS, IT)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions.

- | | | Marks |
|----|--|-------|
| 1 | Differentiate between Keywords and Identifiers in C. | (3) |
| 2 | What will be the output of the following code and justify your answer. | (3) |
| | <pre> #include <stdio.h> main() void funX() { { inti; static inti=1; for(i=0;i<4;i++) funX(); i*=2; } printf("%d ", i); } </pre> | |
| 3 | Write a C program to accept a 2-D integer matrix and check whether it symmetric or not. | (3) |
| 4 | Differentiate between Structure and Union in C. | (3) |
| 5 | What are pre-processor directives? List any two pre-processor directive and their uses. | (3) |
| 6 | Explain any 3 bitwise operators and 3 logical operators in C, with example. | (3) |
| 7 | What will be the value of someFunction(5,2) for the following definition of someFunction? Justify your answer. | (3) |
| | <pre> void someFunction(int a, int b) { int *ptr; a = 0; ptr = &a; b = *ptr; *ptr = 1; printf("%d,%d", a, b); } </pre> | |
| 8 | Explain any Six File opening modes available in C. | (3) |
| 9 | Explain the concept of Command Line Argument in C with example | (2) |
| 10 | Write a C program to check whether a character is present in a string. | (2) |
| 11 | What will be the output if doSomething(117,17) is called with the following definition? | (2) |
| | <pre> intdoSomething(int a, int b) { if (b != 0) return doSomething(b, a%b); else return a; } </pre> | |
| 12 | Explain how a pointer is assigned with a structure in C and how the member variable of structure is accessed using this pointer? | (2) |

- 13 What are function prototypes? Is Function prototype mandatory for every user defined function in C? Justify your answer. (2)
- 14 Write a C program to find the largest among three given numbers, by applying conditional operator. (2)
- 15 How constants are defined in C programs. Explain? (2)
- 16 Write a C program to findsum of digits in an integer. (2)

PART B

Answer any 4 full questions, each carries 8 marks.

- 17 a) For the declaration `int p=1, q=1, r[25]={1}, s[5][25]={{1}};`, check the validity of the given pointer usages and if valid provide the value of the statement. Support your answer with proper explanation. (5)
- i) `*p` ii) `&(p+q)` iii) `*(&p)` iv) `*2017` v) `*s[0]`
- b) What will be the output of the following code? Justify your answer. (3)
- ```
#include<stdio.h>
void main()
{
 char s1[30]="2017 is prime",*s2;
 s2=s1;
 *s2+=1;
 s2+=2;
 printf("\n%s",s2);}

```
- 18 a) With suitable example explain different function parameter passing methods in C. (5)
- b) Write a C program to find the length of a given string *recursively*, without using any standard string library function. (3)
- 19 Explain the working of loop control statements in C with examples. (8)
- 20 a) What will be the output of `mystery(4096,128)` for the following code? Explain why? (3)
- ```
void mystery(int A, int B)
{
    count=0;
    while(A>B) { A = A - B; count++;}
    while(B>A) { B = B - A; count++;}
    printf("%d", count);
}

```
- b) Explain *switch* construct with example. (2)
- c) What will be the output of the following code snippet? (3)
- ```
int x=1;
switch(x)
{
 case 0: printf("Zero");
 case 1: printf("One");
 default: printf("Not allowed in binary");
}

```
- 21 a) Explain with example, how `break` and `continue` constructs are useful in C programming. (5)
- b) If the following code is supposed to print first 100 positive integers, which are not multiple of 3, fill Line1 and Line2 with suitable C programming statement. Justify your answer. (3)

```

void main()
{int count=0, i=0;
 while(1)
 {
 i++;
 if(i%3==0)
 -----//Line1
 count++;
 printf("%d\t",i);
 if(count==100)
 -----//Line2
 }
}

```

### PART C

*Answer any two full questions, each carries 14 marks.*

- 22 a) Write a C program to copy the content of a given text file to a new file after replacing every lowercase letters with corresponding uppercase letters. (10)
- b) With suitable example explain any four different File I/O operations in C? (4)
- 23 a) What are the different storage classes in C? Explain with example. (8)
- b) What will be the output of the following code snippet? Answer should be supported with proper reasons. (6)

|                                                                                              |                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <pre> #include&lt;stdio.h&gt;   inti=0,j=0;   display() { printf("\n4: %d %d",i,j); } </pre> | <pre> void main() { inti=1,j=1; printf("\n1: %d %d",i,j); {   inti=2,j=2;   printf("\n2: %d %d",i,j);   i++;j++; } printf("\n3: %d %d",i,j); i++;j++; display(); } </pre> |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- 24 a) Write a C program to accept Admission number and Name of 'N' (a positive integer) students in a class and to prepare a Roll List based on the alphabetical order of their Names. (8)
- b) Write a C program for displaying the prime numbers in a  $m \times n$  matrix. (6)
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