

JK LAKSHMIPAT UNIVERSITY, JAIPUR

INSTITUTE OF ENGINEERING AND TECHNOLOGY

End Term Examination Backlog, November-December 2015

B. Tech in Computer Science Engineering, Semester I

Roll No.....

CSE101: COMPUTER PROGRAMMING

Time: 3 hours

Max. Marks: 100

Instructions to students:

1. Do not write anything other than your roll number on question paper.
2. Assume suitable data wherever required and mention it clearly.
3. Writing appropriate units, nomenclature, and drawing neat sketches/schematics/ flow chart wherever, required are an integral part of the answer.

Q.1A Objective type multiple choice questions (10 questions @ 1 mark)

10

i. How many times is the following loop body repeated?

```
#include<stdio.h>
int main()
{
    int i=5;
    do{
        if((i++) % 9 ==0)
            printf("%d\n",i);
    } while(i < 10);
    return 0;
}
```

(a) 4; (b) 5; (c) 7; (d) 9

ii. Which of the following is NOT TRUE about recursion? (i) Recursion does not consume more internal memory to complete the process. (ii) Recursion is a process to call another function to complete the tasks (iii) The series of factorial(n) is one of the example process using recursion technique (iv) Recursion is where a function calls itself

(a) (ii), (iii); (b) (i), (iii); (c) (i), (ii); (d) (i), (ii), (iii)

iii. Where are files stored?

a) Motherboard ; b) Secondary memory; c) Main Memory d) Machine Language

iv. Which one of the following is NOT TRUE?

(a) The size of array is static throughout program execution

(b) The elements of an array can be initialized in two ways, such as using two curly brackets ({}) and a comma (,)

(c) Arrays are a series of elements of the different data type placed

(d) None of the above

v. ASCII stands for

a) American Standard Code for Information Interchange

b) American Scientific Code for International Interchange

c) American Standard Code for Intelligence Interchange

d) American Scientific Code for Information Interchange

What would be 8 bit binary value of 67?

vi.

- vii. What is the binary sum of 11011 and 01101?
- viii. What is the minimum value and maximum value which can be stored in variable a declared as short int a;
- ix. Which of the following is illegal identifier? (a) 2rings; (b) G4t&fff; (c) _C_dbms ; (d) \$Hello_2_u
- x. What is the escape characters that causes the beep sound? (a) \t; (b) \n; (c) \a ; (d) \b
- Q.2 Short answer type questions (4 questions @ 2.5 marks) 10
- What are the notations used for Single line and Multi-line comments in C? Differentiate between them giving an example.
 - What is the difference between unsigned int a and int a?
 - List primitive and non-primitive data types of C.
 - Write an infinite loop.
- Q.3A Write the C codes to perform the following tasks: 05
- Declare a variable name myClass of type integer in a array form with size 20
 - Assigning a value 9 to a name variable fixVar using #define preprocessor directive
 - Declare a variable name mySum of type double and assign a value 10 to the variable
 - Value of pi as 3.14 which should remain constant throughout the program.
 - Incrementing mySum by 1 (do not use equal to symbol)
- Q.3B Distinguish between Entry-controlled loop and Exit controlled loop giving an example. 05
- Q.4A Write a program that has two variables to hold two test scores. The program should ask the user to enter two test scores and then assign the values entered to the variables. The program should display the average of the test scores and the letter grade. The grade 'P' will be print out if test score average is between 50 and 100. If the test score average is between 0 and 29, the grade 'F' will be displayed. Other than these values, the program will display "Invalid Value". 05
- Q.4B Study the following statement: 05
- ```
for (int count = 2; count < = 20; count = count + 2)
 printf("%d", count);
```
- Rewrite the for statements to while statements
  - Write the output for the above statement
- Q.5A Differentiate between structure and union giving an example. 05
- Q.5B Study the following code: 05

```

#include <stdio.h>
int main()
{
 int salary;
 printf("Enter your salary: ");
 scanf("%d", &salary); //get marks

 if (salary > 2000) //if marks >50 display message
 printf("You can apply house loan\n");

 return 0;
}

```

Modify the program above, so that it displays two messages "You are not eligible to apply house loan" and "Please bring the guarantor", if salary are less than or equals to 2000.

- |      |                                                                                                                        |    |
|------|------------------------------------------------------------------------------------------------------------------------|----|
| Q.6A | Write a program to display sum of N natural numbers.                                                                   | 05 |
| Q.6B | What is recursion? Write a program to calculate factorial of a number using recursion and without recursion.           | 05 |
| OR   |                                                                                                                        |    |
| Q.6B | Write a program to compute length of a given string without using pre-defined function.                                | 05 |
| Q.7A | Illustrate pass-by-reference mechanism of passing parameters in a function, giving an example of swapping two numbers. | 05 |
| Q.7B | Write a program to display following series till n, which is input by user.<br>1 4 9 16 25 36.....                     | 05 |
| OR   |                                                                                                                        |    |
| Q.7B | Differentiate between unary operator and binary operator in C. Give one example of unary operator in C.                | 05 |
| Q.8A | Write output for each of the following.                                                                                | 10 |

i. 

```

#include<stdio.h>
int main()
{
 int x = 7 ;

 if (x++ == 7)
 printf("Hi there\n");
 else
 printf("Hello there \n");
 printf("C++\n");
 return 0;
}

```

iii. 

```

#include void main()
{
 int x[] = {55,33,88,20,45,21,85,19,11};
 int a = 10;
}

```

ii. 

```

#include<stdio.h>
int main()
{
 int a=2, b=10;

 a * = b + 2 - --b;

 printf("%d", a);

 return 0;
}

```

iv 

```

void main(){
 int i=320;
 char *ptr=(char *)&i;
 printf("%d",*ptr);
}

```

```

if (x[2] > x[5])
 a = 5;
else
 a = 8;
printf("%d", a); }

```

Q.9A Point out Errors.

10

i. #include<stdio.h>

```

int main()
{
 int a[] = {10, 20, 30, 40, 50};
 int j;
 for(j=0; j<5; j++)
 {
 printf("%d\n", a);
 a++;
 }
 return 0;
}

```

ii. f(int a, int b)

```

{
 int a;
 a = 20;
 return a;
}

```

iii. #include<stdio.h>

```

int f(int a)
{
 a > 20? return(10): return(20);
}
int main()
{
 int f(int);
 int b;
 b = f(20);
 printf("%d\n", b);
 return 0;
}

```

iv. char s[] = "C string";

```

int i;
for(i = 0; i < sizeof(s); i -)
{
 printf("%c", s[i]);
}

```

Q.9B

- Write a program to store n integers, where n is input by user allocate memory statically. Write a function to find maximum of n integers.
- Write another program to store n integers, where n is input by user allocate memory dynamically. Write a function to find sum of n integers.

10

OR

Q.9B Write a program which accepts reads a file named integer, which contains integers and checks whether the number is prime or not. If number is prime, it is to copied in file named prime, else it is to copied to file named nonprime.

10