

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT**Endsem Exam, B.Tech Winter Semester 2013-14****SET B****ZZ1004 – COMPUTER PROGRAMMING**

Time : 3 hours

Total : 50 marks

PART - I (TO BE ANSWERED IN THE SPACE PROVIDED IN BOOKLET- B)

- Ensure that both the Question Paper and the Answer Booklet carries the same **SET CODE**.
- Questions 1-25 carries **1 mark** each.
- Assume that the pre-processor directives for header files are declared appropriately.
- Assume (wherever applicable) the base address of the array as **2000**.
- **No marks** will be awarded for questions 7 – 25 without proper justification.

1. Write the appropriate data types that are used to store the following constants
i) "2147483650" ii) '=' iii) -3.6e+39 iv) 3.6
2. A) Modification of existing contents of the file is not possible in which of the following modes
"r+" mode "w+" mode "a+" mode "r" mode
B) Which of the following are disk I/O functions
putc() fputc() getch() fprintf()
3. Write a **single** C statement that will correctly store the concatenation of strings s1 and s2 into a third string s3.
4. Determine which of the following are **invalid character** constants.
i) 'a' ii) '\052' iii) '\n' iv) '\\ ' v) 'T' vi) 'xyz'
5. Let int i=5, j=6 and float x=5, y=6, z=2. Write the output of the following statements.
i) printf("%f\t%f", (j/i*y/z), (y/z*j/i)); ii) printf("%f\t%f", (z*i/j+i), (i/j*z+i));
6. Write the missing lines of code in the following program to produce the given output
char s1[15] = "HAPPY", s2[] = "BIRTHDAY", s3[20];
/* INSERT YOUR CODE HERE */
printf("%s\n%s", s1, s3+5);
Required Output: **HAPPYBIRTHDAY**
 BIRTHDAY
7. Determine the output for following operations and indicate the invalid operations if any with justification. Given int i=2, j=3, *p=&i, *q=&j and float a=2.3, *b=&a (Assume address of j as 1000)
i) *q/*b ii) q/*b iii) q+*p iv) q+*b
8. Write the output for the following program fragment and explain the logic.
int i=6, *j; j=&i;
for(;i>3;i--)
printf("%d\t", *j/2);

Write the Boolean outputs (0 or 1) for the following expressions. Justify your answer.

- !(5+5>=10) ii) 5 + 5 ==10 || 1+3==5
> 10 || 10 < 20 && 3 < 5 iv) 10 != 15 && !(10<20) || 15 > 30

Name :

Roll No :

Batch :

25. Write the output for the following program fragment and justify your answer.

```
main() { int a[3][2]={10,20,30,40,50,60};  
printf("%d\t%d", a[1]-a[0], (int)a[1]-(int)a[0]); }
```

PART - II (TO BE ANSWERED IN THE MAIN ANSWER BOOKLET PROVIDED)

- Questions 26-30 carries **5 marks** each. **2.5 marks** for each sub question.
- Answer all the Questions.

26. A. Write a C program to check if the input given by the user is odd number or even number, and print the result.

B. Write a C program to read a file and print its contents on the standard output console. The file name should be supplied as command line argument.

27. A. Write a C program to print the grade for the input given as marks (Ref :Table 1) use **if - elseif**

B. Write a C program to print the grade point for the input given as grade (Ref :Table 1) use **switch- case**

Marks	Grade	Grade points
90 - 100	S	10
80 - 89	A	9
70 - 79	B	8
60 - 69	C	7
50 - 59	D	6
40 - 49	E	5
0 - 39	F	0

Table 1

28. A. Write a C program to swap two integers where the integers have local scope within the function main(), swapping to be carried out in a user defined function and result to be printed in main().

B. Write a C program to sort the following array in ascending order using any sorting algorithm.

29. A. Write a C program to multiply two matrices A and B with dimensions 4x3 and 3x3 respectively. Matrix input should be given by the user through keyboard and output should be stored in a file named "**out.dat**"

30. Write user-defined functions in C to replace the following inbuilt string functions

- i) strcpy() ii) strcmp()