Nepal College of Information Technology
Balkumari Lalitpur
Assessment Exam Fall Semester 2008

Year: I Sem: I
Program: B.E Time: 3hrs
FM: 100 PM: 50

Programming in C

Attempt All Questions.

1. a. Write about various periods during the evolution of computers. 7

   b. Describe various components of a digital computer along with a neat diagram 8

2. a. Describe with example the different types of operators available in C.
   Explain the operator precedence rules. 7

   b. Write a program to allocate memory to three character pointers **s1,**s2of length 10 and s3 of length 20 using `malloc`. Ask for strings s1 and
   s2 from user, concatenate the two strings and insert it in s3 and print
   this string. 8

3. a. What is the difference between formal and actual arguments. Explain with examples. 5

   b. Write a 'C' program to input a 3 x 3 matrix and display the menu:Menu. 10
   i. Print a 3 x 3 matrix
   ii. Find out if the matrix is symmetrical
   iii. Sum the diagonal elements from left to right
   iv. Sum the elements of the first column
   v. Exit from Program
   and perform task as per user's choice

4. a. Write a program to sum the following series up to 'n' terms as specified by the user: 6

   sum = $1 + x/1! + x^2/2! + x^3/3! + x^4/4! \ldots\ldots x^n/n!$

   b What are strings? Differentiate between the following string functions. 4

   i.strcpy and strncpy() ii.Strcmp and strncmp()

   c. Write a C program to generate all the possible combinations of integer numbers 1,2 and 3. 5

5. a What are the advantages of using functions in a program? Explain with different types of functions with examples. 5

   b. What will be the output of the following code? Assume that the necessary header files are included in the program. 5

```
main(){
int i=0,x=0;
  while(i<10){
    if(i % 2 == 0){
      x+=1;
printf("%d ",x);
    }
   ++i;
  }
 printf("\n x = %d",x);
}
```

   c What will be the output of the following program(assume the 5 necessary header files):

```
main(){
char *list[7]={"roxanne",
    "heather",
              "brandie",
```

```
                    "jenifer"
   };
int i;
 for(i=0;i<7;i++)
  printf("%c",*(*(list+2)+i));
     }
```

5

6. a. What are pointers? How can more than one value be returned from a function? Explain with a C program. 5

b. Define a structure called `payrecord` that contains the following information : `employeeID`, `employeeName`, `salary`. Using this write a program that reads above information as input to a data file that stores information of 50 employees. Then create a `payroll` report that lists each `employee name, id and salary`. 10

7. Write short notes (any two) 10

a. Algorithms
b. Structure Pointer
c. Hardware and Software
d. Global Variables