

KATHMANDU UNIVERSITY  
End Semester Examination  
August/ September 2017

Marks Scored:

Level: B. Sc./ B. Pharm./B. Tech.  
Year : I

Course : COMP 102  
Semester: II

Exam Roll No. :

Time: 30 mins.

F. M. : 10

Registration No. :

Date SEP 14 2017

SECTION "A"  
[20 Q. × 0.5 = 10]

Circle the most appropriate answer.

- Which of the following is TRUE about C identifiers?  
a) It can be started with underscore ( \_ )    b) It cannot be same as any C keywords  
c) It is case sensitive    d) All of the above
- Which of the following is NOT an operator in C programming?  
a) ?:    b) =<    c) &&    d) !
- What does the following statement return?  
5 && 6  
a) 0    b) 1    c) 6    d) 5
- What is the output of the following program?  

```
#include <stdio.h>
int main()
{
    int data[4] = {-1, -3, -5, -6};
    int *pointer = data + 3;
    printf("%d\n", pointer[-2]);
}
```

  
a) -2    b) -3    c) -5    d) -6
- What will be printed by the following code?  

```
#include <stdio.h>
void main(){
    int i;
    for(i=3;i<10;i=i+3)
        printf ("%d",i++);
}
```

  
a) 3479    b) 347    c) 37    d) 3
- What is the output of the following program?  

```
#include <stdio.h>
void main()
{
    int b = 3 + 2 * 4 % 3;
    printf ("%d", b);
}
```

  
a) 2    b) 3    c) 4    d) 5

7. What is the output of the following code?

```
#include <stdio.h>
void make_triple(int x){
    x = x*3;
}
void main(void){
    int x = 3;
    make_triple(x);
    printf("%d",x);
}
```

- a) 3                      b) 9                      c) x                      d) %d

8. What is the output of the following program?

```
#include <stdio.h>
int main(){
    int i = 4;
    do {
        i++;
        printf("This is printf statement.\n");
        ++i;
    } while (i <= 9);
}
```

- a) 4                      b) 9                      c) 3                      d) 6

9. What is the representation of the 5<sup>th</sup> element in an array called BOOK?

- a) BOOK(5)              b) BOOK[5]              c) BOOK(4)              d) BOOK[4]

10. Which of the following library functions is used to find the first occurrence of a given string in another string?

- a) strchr()              b) strrchr()              c) strstr()              d) stnfirst()

11. How will you print \n on the screen?

- a) print("\\n");              b) printf("\\n")              c) print('\\n')              d) printf("\\n")

12. Consider the following program.

```
void respect_one(){ respect_two(); putchar('1'); }
void respect_two(){ putchar('2'); putchar('3'); }
void respect_three(){ respect_one(); }
void main(){
    putchar('N');
    respect_three();
    putchar('L');
}
```

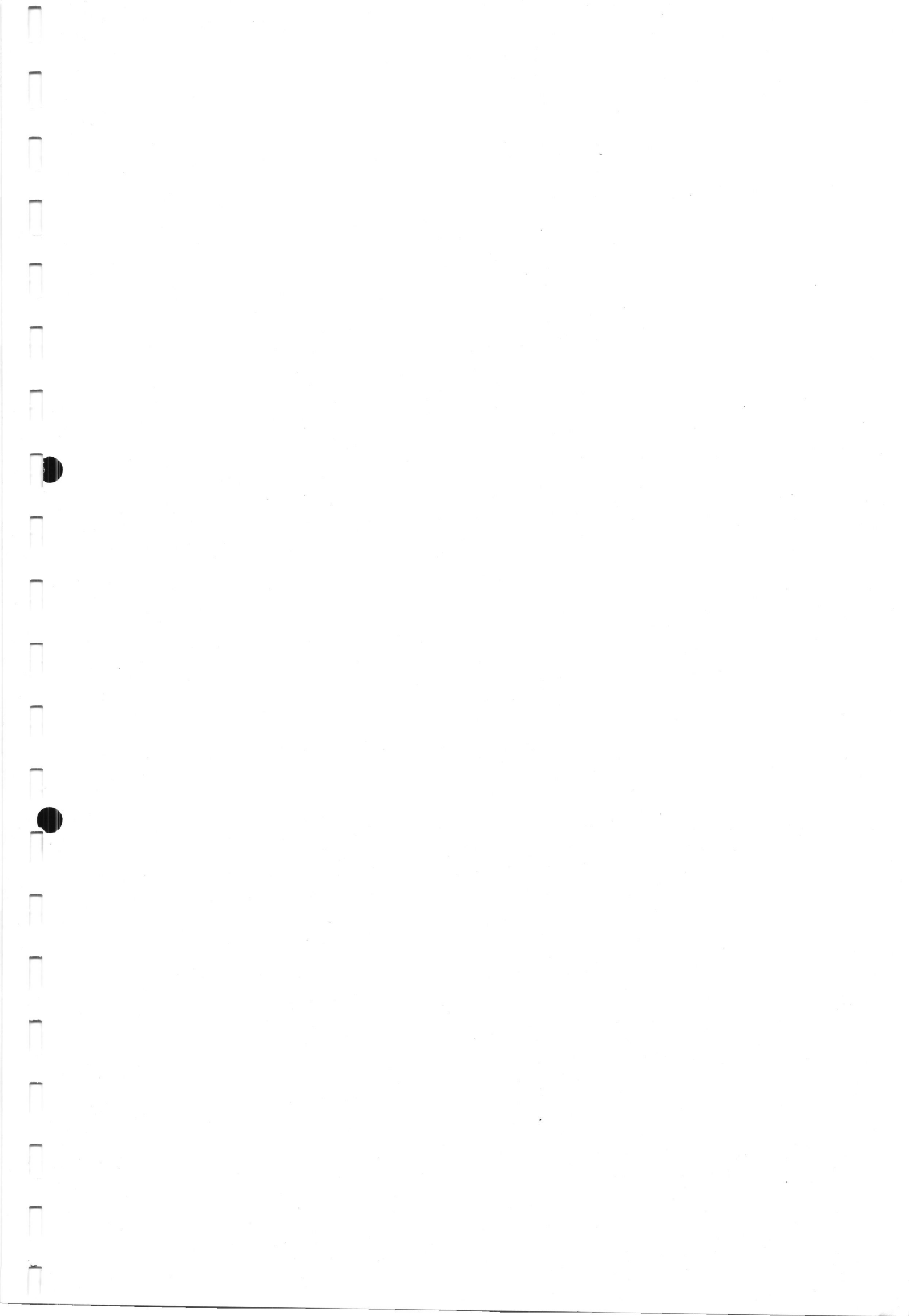
- if **NEPAL** is the required output, you must replace 1, 2, and 3 by \_\_\_\_\_ respectively.

- a) A, E, and P              b) E, P, and A              c) A, P, and E              d) P, A, and E

13. What is the built in library function to find the square root of a given integer?

- a) find\_square\_root()              b) sqrt()  
c) squareroot()                      d) square\_root()

14. Which of the following library header file should be included to use printf() function?  
a) math.h                      b) conio.h                      c) stdio.h                      d) stdlib.hs
15. When getc() returns EOF?  
a) end of file is reached                      b) it fails to read a character  
c) both option a and option b occur                      d) either option a or option b occurs
16. Following code is a recursive function. What will be the output if n = 3?  
    int this\_is\_recursion(int n){  
        if(n == 1) return 2;  
        else return ( this\_is\_recursion(n-1) + 3 \* n - 2 );  
    }  
a) 3                      b) 6                      c) 9                      d) 13
17. Which of the following statements is TRUE about structure?  
a) A structure cannot be nested inside another structure  
b) Individual members can be initialized within a structure type declaration  
c) The scope of the member name is confined to the particular structure, within which it is defined  
d) All of the above.
18. Which of the following is an indirection operator?  
a) &                      b) \*                      c) .                      d) ->
19. What is the problem in following code?  
Line 1: #include <stdio.h>  
Line 2: void main()  
Line 3: {  
Line 4:       #define max 37;  
Line 5:       printf("%d", max);  
Line 6: }  
a) Ending line 4 with ; is an error  
b) Not including math header file is an error  
c) Writing Line 4 within main function is an error  
d) None of the above
20. What is the purpose of "rb" in fopen() function used below in the code?  
    FILE \*fp;  
    fp = fopen("source.txt", "rb");  
a) open "source.txt" in binary mode for reading  
b) Create a new file "source.txt" for reading and writing  
c) open "source.txt" in binary mode for reading and writing  
d) None of the above



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Level: B.Sc./B.Pharm./B. Tech.  
Year: I  
Time: 2 hrs. 30 minutes

Course: COMP 102  
Semester: II  
F.M.: 40

SECTION "B"  
[6 Q. × 4 = 24]

Attempt *ANY SIX* questions.

1. What is a variable? What sort of variable names are acceptable in C programming language? How does it differ with Keyword? [1+2 + 1]
2. What do you mean by Looping? Write a program to print all even numbers between 101 to 201 except those divisible by 14. [1 + 3]
3. Describe a static variable in terms of its scope and lifetime. Write a simple C program to demonstrate the use of static variable. [2+2]
4. What do you mean by tertiary operator? Write a simple C program that makes use of tertiary operator. [1+3]
5. Describe the syntax of **else if ladder**. How is different with **switch** statement. [2+2]
6. Write a function called **is\_divisible** that takes two positive integer as arguments. Assuming that the first argument (arg1) is less than second argument (arg2), your function shall return true (1) if arg2 is exactly divisible by arg1 otherwise false (0). For example, when calling **is\_divisible** (3, 7) shall return 0 since 7 is not divisible by 3. You do need to write a main function.
7. What is a pointer variable? How is pass by reference advantageous than pass by value? [1+3]

SECTION "C"  
[2 Q. × 8 = 16]

Attempt *ANY TWO* questions.

8. Differentiate between Array and Pointer? In what ways are they similar? Write a complete C program that demonstrates the addition of two dimensional array. [2+2+4]
9. What are the advantages of having structure in C programming language?
  - a. Create a structure called "Point" with attributes **x\_axis**, and **y\_axis**; **x\_axis** variable stores the x value of a point, and **y\_axis** stores the y value of a point.
  - b. In main program, create an array of 10 points. Write a code to input data of 10 points from user.
  - c. In addition to that, your program should check whether user has entered (0,0) point. [2+2+2+2]
10. Write a complete C program to demonstrate the use of library functions **fopen()**, **fclose()**, **fgetc()**, and **fputc()**. [2+2+2+2]

