# National Institute of Technology, Silchar

## (UG) Mid Semester Examination, February 2022

Subject Code: CS-101 | Subject: Introduction to Programming
Semester: 1st | Department: CSE/ECE/EE
Duration: 1 hour | Total Marks: 20

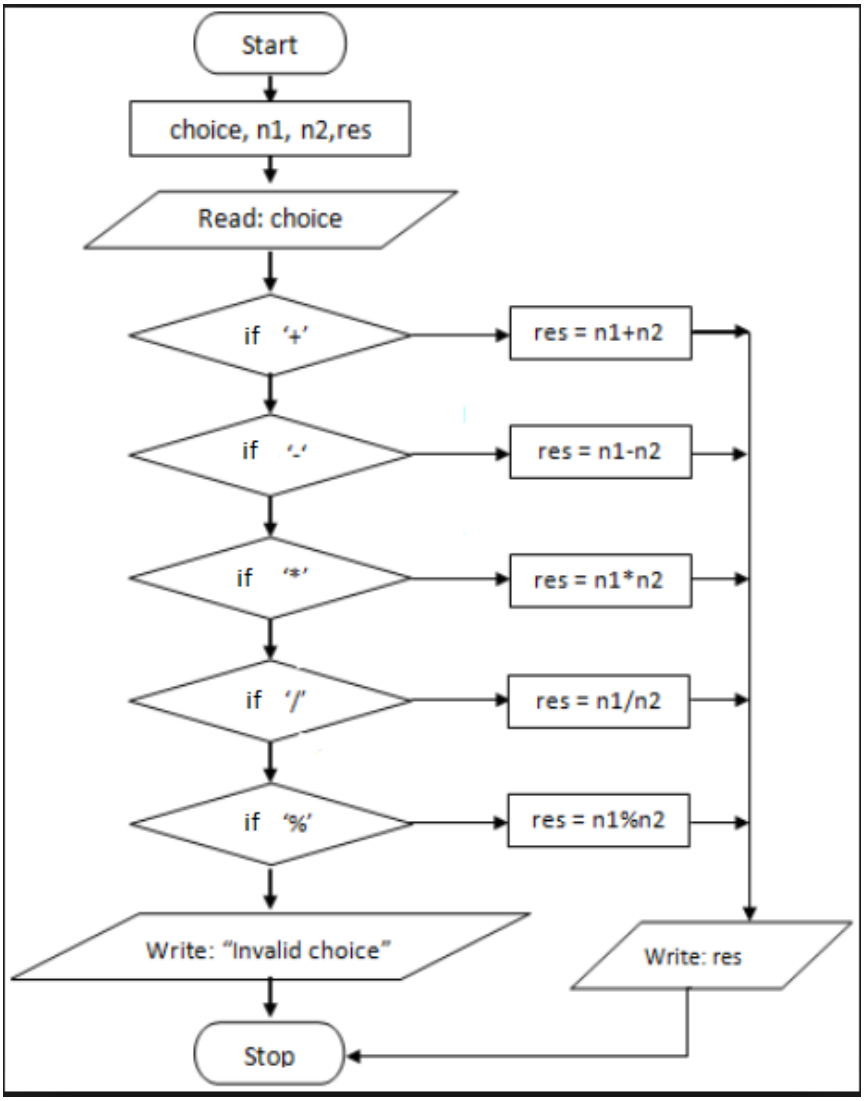
| Q No. | Question | Marks | CO |
|---|---|---|---|
| 1 | Fill in the blanks: | | |
| | (a) System software's are those which interact with the _____ of the computer. | 1 | CO1 |
| | (b) The three main programming constructs are _____, _____ and _____ statements. | 1 | CO1 |
| | (c) The C language does not provide any warning or indication of overflow. It simply gives incorrect results. Care should be exercised in defining correct _____. | 1 | CO1 |
| | (d) After the declaration *enum q {a=1, b, c, d, e, f=60, y};* the *printf("%d", y)* statement prints _____. | 1 | CO1 |
| 2 | What would be the output of the following program? Give proper justification for your answers. | | |
| | (a) | 2 | CO3 |

```
main()
  {
   int num;
   num = func(20);
   printf("%d", num);
  }

int func(int num)
   {
     num > 20 ? return (100) : return (200);
    }
```

| | | | |
|---|---|---|---|
| | (b) | 2 | CO3 |

```
int main(){ int i;
for(i=10;i<=15;i++) { while(i) {
do { printf("%d", 1);
if(i>>1) continue; } while(0);
break; } }
return 0;
}
```

| | | | |
|---|---|---|---|
| | (c)<br>`int main()`<br>`{`<br>`  int i, x=20, z=30, f=23;`<br>`  for(i=0;i<=200;i++,f++,z++);`<br>`  {`<br>`  x++;`<br>`  }`<br>`  printf("%d %d", x, i);`<br>`}` | 2 | CO3 |
| 3 | (a) Draw a flow chart to add first n terms of the series:<br>$$f(x) = 1 - \frac{x^4}{2 \times 3} + \frac{x^8}{6 \times 7} - \frac{x^{12}}{10 \times 11} + ...$$ | 3 | CO1 |
| | (b) Write a complete C program using case statements which is equivalent to the flowchart shown below:<br>  <br> | 3 | CO2 |
| 4 | Write a C program that does the following: It accepts a sequence of integers from the user, continuing as long as it enters an even integer. Once the user enters an odd integer, the program stops accepting inputs. Then, compute the total number of even integers entered, their sum, and print those results. | 4 | CO2 |

## Course Outcomes (CO):

1. Learn formulation of simple algorithms for arithmetic and logical problems.
2. Able to translate the algorithms into programs (in C language).
3. Able to use derived types, control structures, functions and pointers for problem solving.

### CO distribution Mark wise