Practical no 3

Q1. #include <stdio.h>
```
   int main (){
   int no1, no2, highe;
   printf("Enter First Number: ");
   scanf("%d", &no1);
   printf("Enter Second Number: ");
   scanf("%d", &no2);
   if (no1>no2)
       highe= no1;
   else
       highe= no2;
    printf("\nHight Number: %d", highe);
}
```

02. #include <stdio.h>
```
int main (){
   int no1, no2, no3;
   printf("Enter first Number: ");
   scanf("%d", &no1);
   printf("Enter first Number: ");
   scanf("%d", &no2);
   printf("Enter first Number: ");
   scanf("%d", &no3);
   int large=no1;
   int smalle=no1;
   if (no2>large)
      large=no2;
   else if (no3>large)
      large=no3;
   else if (no2<smalle)
      smalle=no2;
   else if (no3<smalle)
      smalle=no3;

   printf("Large Number %d\tSmalle Number %d",large, smalle);

}
```

03. #include <stdio.h>
```
int main(){
   int nsala, bsala, inc;
   char name [20];
   printf("Enter Employ Name: ");
   scanf("%s", &name);
   printf("Enter Basic Salary: Rs.");
```

```
    scanf("%d", &bsala);

    if (bsala>=10000)
        inc=bsala*0.15;
    else if (bsala>=1000)
        inc=bsala*0.10;
    else
        inc=bsala*0.05;
    nsala=bsala+inc;
    printf("\nYour Name: %s \nNew salary: Rs.%d\n", name,nsala);
}
```

```
04. #include <stdio.h>
int main(){
   double radius, dimeter, cricumference, area;
   printf("Enter radius of the circle: ");
   scanf("%lf", &radius);

   dimeter=2*radius;
   cricumference=2*3.1415*radius;
   area=3.1415*radius*radius;

   printf("Demeter: %.2f\n",dimeter);
   printf("Cricumference: %.2f\n", cricumference);
   printf("area: %.2f\n", area);
}
```

```
05. #include <stdio.h>
int main(){
    int no1, no2;
    printf("Enter first integer: ");
    scanf("%d",&no1);
    printf("Enter first integer: ");
    scanf("%d",&no2);

    if (no2 !=0 && no1%no2==0)
        printf("%d is a multiplies number %d",no1,no2);
    else
        printf("%d is a non multiplies number %d",no1,no2);

}
```

```
06. #include <stdio.h>
int main() {
    char character;
    printf("Enter a character: ");
    scanf("%c", &character);
    if (character >= 'A' && character <= 'Z')
```

```
        printf("Uppercase letter\n");
    else if (character >= 'a' && character <= 'z')
        printf("Lowercase letter\n");
    else if (character >= '0' && character <= '9')
        printf("Digit\n");
    else if (character == '$' || character == '*' || character == '+' || character == '/')
        printf("Special symbol\n");
    else if (character == ' ')
        printf("Blank character\n");
    else
        printf("Unknown character\n");

    return 0;
}
```

```
07. #include <stdio.h>
int main() {
    float bsalary,msales,al=0,bp=0,ab=0,gr;
    int yservice;
    char city[20];
    printf("Enter the basic salary: ");
    scanf("%f", &bsalary);
    printf("Enter the years of service: ");
    scanf("%d", &yservice);
    printf("Enter the city: ");
    scanf("%s", &city);
    printf("Enter monthly sales: ");
    scanf("%f", &msales);

    if (yservice > 5) {
        al = bsalary * 0.1;
    }
    if (city == 'C') {
        al += 2500;
    }
    if (msales >= 0 && msales <= 25000) {
        bp = 10;
    } else if (msales > 25000 && msales <= 50000) {
        bp = 12;
    } else if (msales > 50000) {
        bp = 15;
    }
    ab = (msales * bp) / 100;
    gr = bsalary + al + ab;
    printf("Monthly Remuneration: %.3f\n",gr);


}
```

Practical no 4

```
01. #include <stdio.h>
int main() {
   int no;
   printf("Enter an integer: ");
   scanf("%d", &no);
   if (no%2==0)
   {
      printf("%d is even\n",no);
   }
   else
   {
      printf("%d is odd\n",no);
   }
}
```

```
02. #include <stdio.h>
int main() {
   int choice;
   float no1, no2, result;
   printf("Menu-Driven Calculator\n");
   printf("1. Addition\n");
   printf("2. Subtraction\n");
   printf("3. Multiplication\n");
   printf("4. Division\n");
   printf("Enter your choice: ");
   scanf("%d", &choice);
   printf("Enter the first number: ");
   scanf("%f", &no1);
   printf("Enter the second number: ");
   scanf("%f", &no2);

   if (choice == 1) {
      result = no1 + no2;
      printf("Result: %.2f\n",result);
   } else if (choice == 2) {
      result = no1 - no2;
      printf("Result: %.2f\n",result);
   } else if (choice == 3) {
      result = no1 * no2;
      printf("Result: %.2f\n",result);
   } else if (choice == 4) {
      if (no2 != 0) {
         result = no1 / no2;
         printf("Result: %.3f\n",result);
```

```
        }
    } else {
        printf("Invalid choice.\n");
    }


}
```

03.
```
#include <stdio.h>
int main() {
    int choice;
    float radius;
    float result;

    printf("1. Circumference of a circle\n");
    printf("2. Area of a circle\n");
    printf("3. Volume of a sphere\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);

    printf("Enter the radius: ");
    scanf("%f", &radius);

    if (choice == 1) {
        result = 2 * 3.14159 * radius;
        printf("Circumference of the circle: %.3f\n", result);
    } else if (choice == 2) {
        result = 3.14159 * pow(radius, 2);
        printf("Area of the circle: %.3f\n", result);
    } else if (choice == 3) {
        result = (4 * 3.14159 * pow(radius, 3)) / 3;
        printf("Volume of the sphere: %.3f\n", result);
    }

}
```

04.
```
#include <stdio.h>
int main() {
    char letter;
    printf("Enter a letter: ");
    scanf("%c", &letter);
    switch (letter) {
        case 'a':
        case 'A':
        case 'e':
        case 'E':
        case 'i':
        case 'I':
```

```
        case 'o':
        case 'O':
        case 'u':
        case 'U':
            printf("The letter '%c' is a vowel.\n", letter);
            break;
        default:
            printf("The letter '%c' is not a vowel.\n", letter);
            break;
    }

}
```

```
05. #include <stdio.h>

int main() {
    int month;

    printf("Enter the month number: ");
    scanf("%d", &month);

    switch (month) {
        case 1:
            printf("January has 31 days.\n");
            break;
        case 2:
            printf("February has 28 days.\n");
            break;
        case 3:
            printf("March has 31 days.\n");
            break;
        case 4:
            printf("April has 30 days.\n");
            break;
        case 5:
            printf("May has 31 days.\n");
            break;
        case 6:
            printf("June has 30 days.\n");
            break;
        case 7:
            printf("July has 31 days.\n");
            break;
        case 8:
            printf("August has 31 days.\n");
            break;
        case 9:
            printf("September has 30 days.\n");
```

```
        break;
      case 10:
        printf("October has 31 days.\n");
        break;
      case 11:
        printf("November has 30 days.\n");
        break;
      case 12:
        printf("December has 31 days.\n");
        break;
      default:
        printf("Please enter number between 1 and 12.\n");
        break;
   }

}
```

Practical no 5

Section A

01. **while loop:**

```
        #include <stdio.h>
int main() {
   int num = 0;
   while (num <= 100)
   {
      printf("%d ", num);
      num++;
   }
}
```

do while loop:

```
        #include <stdio.h>
int main() {
   int num = 0;
   do {
      printf("%d ", num);
      num++;
   } while (num <= 100);
}
```

for loop:

```
        #include <stdio.h>
int main() {
   for (int num = 0; num <= 100; num++) {
```

```
        printf("%d ", num);
    }
}
```

02.
```
#include <stdio.h>
int main() {
    int marks[10],i,total=0;
    float average;
    printf("Enter your marks:\n");
    for (i = 0; i < 10; i++) {
        printf("Mark %d: ", i + 1);
        scanf("%d", &marks[i]);
        total += marks[i];
    }
    average = (float)total / 10.0;
    printf("Total: %d\n", total);
    printf("Average: %.2f\n", average);
    if (average < 50) {
        printf("Fail!\n");
    } else {
        printf("Pass!\n");
    }
}
```

03.
```
#include <stdio.h>
int main() {
    int number, i;
    long factorial = 1;
    printf("Enter a number: ");
    scanf("%d", &number);
    for (i = 1; i <= number; i++)
    {
        factorial *= i;
    }
    printf("Factorial of %d is %llu.\n", number, factorial);

}
```

04.
```
#include <stdio.h>
int main() {
    int number, digit, sum = 0;
    printf("Enter number: ");
    scanf("%d", &number);
    while (number > 0) {
        digit = number % 10;
        sum += digit;
        number /= 10;
    }
```

```
    printf("Sum of the digits: %d\n", sum);

}
```

05.
```
#include <stdio.h>
int main() {
    int number,no1 = 0, remainder;
    printf("Enter a number: ");
    scanf("%d", &number);
    do {
        remainder = number % 10;
      no1 = no1 * 10 + remainder;
        number /= 10;
    }
    while (number != 0);
    printf("Reversed number: %d\n", no1);
}
```

06.
```
#include <stdio.h>
int main() {
    int result = 1, base,exponent;
    printf("Enter the base number: ");
    scanf("%d", &base);
    printf("Enter the exponent: ");
    scanf("%d", &exponent);
    int i;
    for (i = 0; i < exponent; i++) {
        result *= base;
    }
    printf("%d raised to the power of %d is %d\n", base, exponent, result);
}
```

07.
```
#include <stdio.h>
int main() {
    int no1 = 0, no2 = 1, secondno, i;
    printf("First 10 numbers:\n");
    printf("%d, %d, ", no1, no2);
    for (i = 2; i < 10; i++)
    {
        secondno = no1 + no2;
        printf("%d, ", secondno);
        no1 = no2;
        no2 = secondno;
    }
    printf("\n");
}
```

08.
```
#include <stdio.h>
```

```
int main() {
   int no1, ono, remainder, result = 0, n = 0;
   printf("Enter a number: ");
   scanf("%d", &no1);
   ono = no1;
   while (ono != 0) {
      ono /= 10;
      ++n;
   }
   ono = no1;
   while (ono != 0) {
      remainder = ono % 10;
      result += pow(remainder, n);
      ono /= 10;
   }
   if (result == no1) {
      printf("%d is an Armstrong number.\n", no1);
   } else {
      printf("%d is not an Armstrong number.\n", no1);
   }
}
```

```
09. #include <stdio.h>
int main() {
   char letter;
   printf("ASCII values for letters A to Z:\n");
   for (letter = 'A'; letter <= 'Z'; letter++)
   {
      printf("%c: %d\n", letter, letter);
   }
}
```

```
10. #include <stdio.h>
int main() {
   int rows = 5;
   int i, j;
   for (i = 1; i <= rows; i++)
   {
      for (j = 1; j <= i; j++)
      {
         printf("*");
      }
      printf("\n");
   }
}
```

```
11. #include <stdio.h>
bool isPrime(int number) {
```

```
    if (number <= 1) {
        return false;
    }
    for (int i = 2; i * i <= number; i++) {
        if (number % i == 0) {
            return false;
        }
    }
    return true;
}
int main() {
    int number;
    printf("Enter a number: ");
    scanf("%d", &number);
    if (isPrime(number)) {
        printf("%d is a prime number.\n", number);
    } else {
        printf("%d is not a prime number.\n", number);
    }
}
```

12.
```
#include <stdio.h>
void printFactors(int number) {
    int i;
    printf("Factors of %d are: ", number);
    for (i = 1; i <= number; ++i) {
            if (number % i == 0) {
            printf("%d ", i);
        }
    }

    printf("\n");
}
int main() {
    int num;

    printf("Enter an integer: ");
    scanf("%d", &num);

    printFactors(num);
}
```

13.
```
#include <stdio.h>
int main() {
    int number, sum = 0;
    printf("Enter numbers:\n");
    while {
        printf("Enter a number: ");
```

```
        scanf("%d", &number);
        if (number == -1) {
        break;
        }
        sum += number;
    }
    printf("The sum is: %d\n", sum);
}
```

```
14. #include <stdio.h>
int main(){
    int array[10];
    int i;

    printf("Enter integers: \n");
    for (i=0; i<10; ++i){
        printf("Enter element %d: ",i+1);
        scanf("%d",&array[i]);
    }
    printf("The Array is: ");
    for (i=0; i<10; ++i) {
    printf("%d",array[i]);
    }

    printf("\n");

}
```

```
15. #include <stdio.h>
int main() {
   itn array[10];
   printf("Enter element %d:\n");
   for (i=0; i<10; ++i){
    printf("Enter element %d: ",i+1);
    scanf("%d",&array[i]);
   }
   for (i=0; i<10; ++i){
    if (array[i]%2==0){
        count++;
    }
   }
   printf("The count of even numbers in the array is:%d\n",count);
}
```

Section B

```
01. #include <stdio.h>
int main() {
```

```
    int number[10];
    int i, positivenum = 0, negativenum = 0, zero = 0;
    printf("Enter 10 number:\n");
    for (i = 0; i < 10; ++i) {
        printf("Enter number %d: ", i + 1);
        scanf("%d", &number[i]);
        if (number[i] > 0) {
            positivenum++;
        } else if (number[i] < 0) {
            negativenum++;
        } else {
            zero++;
        }
    }
    printf("Number of positive numbers: %d\n", positivenum);
    printf("Number of negative numbers: %d\n", negativenum);
    printf("Number of zeros: %d\n", zero);
}
```

```
02. #include <stdio.h>
int main() {
    int marks[10];
    int i, maxmarks, minmarks, sum = 0;
    float average;
    printf("Enter the mark:\n");
    for (i = 0; i < 10; ++i) {
        printf("Enter marks for student %d: ", i + 1);
        scanf("%d", &marks[i]);
        sum += marks[i];
        if (i == 0 || marks[i] > maxmarks) {
            maxmarks = marks[i];
        }
        if (i == 0 || marks[i] < minmarks) {
            minmarks = marks[i];
        }
    }
    average = (float)sum / 10;
    printf("Maximum marks: %d\n", maxmarks);
    printf("Minimum marks: %d\n", minmarks);
    printf("Average marks: %.2f\n", average);
}
```

```
03. #include <stdio.h>
int main() {
    float prices[10];
    int i, count = 0;
    float sum = 0, average;
```

```
    printf("Enter the price:\n");
    for (i = 0; i < 10; ++i) {
        printf("Enter the price of item %d: ", i + 1);
        scanf("%f", &prices[i]);
        sum += prices[i];
        if (prices[i] > 200) {
            count++;
        }
    }
    average = sum / 10;
    printf("Item average value: %.2f\n", average);
    printf("Number of item: %d\n", count);
}
```

```
04. #include <stdio.h>
int main() {
    int employeeNo, count = 0;
    float basicsalary;
    printf("Enter the basic salary:\n");
    while (1) {
        printf("Employee No: ");
        scanf("%d", &employeeNo);
        if (employeeNo == -999) {
            break;
        }
        printf("Basic Salary: ");
        scanf("%f", &basicsalary);
        if (basicsalary >= 5000) {
            count++;
        }
    }
    printf("Number of Employees with Basic Salary >= 5000: %d\n", count);
}
```

```
05. #include <stdio.h>
int main() {
    int employeeNo;
    float hworked, opayment, totp = 0;
    int count = 0, countExceeding4000 = 0;
    printf("Enter the Employee No and Hours Worked:\n");
    while (1) {
        printf("Employee No: ");
        scanf("%d", &employeeNo);
        if (employeeNo == -999) {
            break;
        }
        printf("Hours Worked: ");
        scanf("%f", &hworked);
```

```
        if (hworked > 40) {
            opayment = 150 * 40 + 200 * (hworked - 40);
        } else {
            opayment = 150 * hworked;
        }
        totp += opayment;
        count++;
        if (opayment > 4000) {
            countExceeding4000++;
        }
    }
    printf("Employee No\tOvertime Payment\n");
    printf("Total\t\t%.2f\n", totp);
    printf("Percentage of Employees with Overtime Payment > 4000: %.2f%%\n",
        (float)countExceeding4000 / count * 100);
}
```