Q4 code

```
#include <stdio.h>
int main(){
int cattegory;
int more;
printf("enter the cattegory 1 for snacks and 2 of drinks");
scanf("%d", &cattegory);
switch (cattegory)
{
case (1):
    printf("which snacks 2 for chips 3 for rolls");
    scanf("%d", &more);
    break;
switch (more)
{
case (2):
    printf("dispensing chips");
    break;
case (3):
 printf("dispensing rolls");
 break;
default:
 printf("not avalible");
    break;
}case (2):
 printf("which drink 2 for pepsi 3 for fanta");
    scanf("%d", &more);
switch (more)
{
case (2):
    printf("dispensing pepsi");
    break;
case (3):
printf("dispensing fanta");
default:
printf("not avaiable");
    break;
}
default:
```

```
    break;
}
return 0;
```

Result

```
enter the cattegory 1 for snacks and 2 of drinks2
which drink 2 for pepsi 3 for fanta2
dispensing pepsi
PS C:\Users\lenovo\Desktop\c programing\pf lab 4 tsk.c>
```

Q5

```
#include <stdio.h> <math.h>
int main(){
    int a;
    int b;
    int c;
    int discriminant;
    // a is the coefficient of x square b is of x and c the constant

    printf("give value of a");
    scanf("%d", &a);
    printf("give value of b");
    scanf("%d", &b);
     printf("give value of c");
    scanf("%d", &c);

discriminant = b * b - 4 * a * c;
if (discriminant>0)
{
     printf("the roots are distinct and real");
}
else if (discriminant < 0)
{
     printf("the roots are imagnary and distinct");
}
else if (discriminant = 0)
{
```

```
  printf("the roots are real and equal");
}
printf("discrimanat\n", discriminant);
return 0;
}
```

Result

```
give value of a1
give value of b3
give value of c4
the roots are imagnary and distinctdiscrimanat
```

Q6

```
#include <stdio.h>



int main() {
    int shapes;
    int category, width;
    int area, side, height;
    int perimeter;

    printf("Which shape? Type 1=triangle, 2=square, 3=rectangle: ");
    scanf("%d", &shapes);

    switch(shapes) {
        case 1:
            printf("Want area or perimeter? Type 1 or 2: ");
            scanf("%d", &category);
            switch(category) {
                case 1:
                    printf("Input base length: ");
                    scanf("%d", &side);
                    printf("Input height: ");
                    scanf("%d", &height);
                    area = (0.5) * (height * side);
                    printf("Triangle area = %d\n", area);
                    break;
                case 2:
                    printf("Input side 1 length: ");
                    scanf("%d", &side);
```

```
            printf("Input side 2 length: ");
            scanf("%d", &height);
            printf("Input side 3 length: ");
            scanf("%d", &width);
            perimeter = width + side + height;
            printf("Triangle perimeter  %d", perimeter);
            break;
        default:
            printf("Invalid choice\n");
            break;
    }
    break;

case 2:
    printf("Want area or perimeter? Type 1 or 2: ");
    scanf("%d", &category);
    switch(category) {
        case 1:
            printf("Input side length: ");
            scanf("%d", &side);
            area = side * side;
            printf("Square area = %d\n", area);
            break;
        case 2:
            printf("Input side length: ");
            scanf("%d", &side);
            perimeter = 4 * side;
            printf("Square perimeter = %d\n", perimeter);
            break;
        default:
            printf("Invalid choice\n");
            break;
    }
    break;

case 3:
    printf("Want area or perimeter? Type 1 or 2: ");
    scanf("%d", &category);
    switch(category) {
        case 1:
            printf("Input length: ");
            scanf("%d", &side);
            printf("Input width: ");
            scanf("%d", &width);
```

```
            area = side * width;
            printf("Rectangle area = %d\n", area);
            break;
        case 2:
            printf("Input length: ");
            scanf("%d", &side);
            printf("Input width: ");
            scanf("%d", &width);
            perimeter = 2 * width + 2*side;
            printf("Rectangle perimeter  %d", perimeter);
            break;
        default:
            printf("Invalid choice\n");
            break;
    }
    break;

  default:
    printf("Invalid shape selection\n");
    break;
 }
 return 0;
}
```

Result

```
Which shape? Type 1=triangle, 2=square, 3=rectangle: 1
Want area or perimeter? Type 1 or 2: 2
Input side 1 length: 5
Input side 2 length: 13
Input side 3 length: 13
Triangle perimeter  31
```

Q7 .

```c
#include <stdio.h>
#include <string.h>
#define  MAX_LENGTH 50
int main (){
char username[ MAX_LENGTH];
int password = 1234;
printf("enter username ");
fgets(username, MAX_LENGTH, stdin);
```

```
printf("enter password ");
scanf("%d", &password);

if (strcmp(username, "admin" )== 0){
    if (password==1234)
    {
      printf("you got the correct username and pasword");
    }
}
else{
    printf("wrong usernname or password \n ");
}

return 0;
}
```

Result

```
enter username admin
enter password 1123
wrong usernname or password
```

Q8
Code

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

int main(){
double  loanAmount, interest_rate, emi;
int typesYears,instrestType;
 printf("input loanAmount");
    scanf("%lf", &loanAmount);
  printf("input times in years");
    scanf("%d", &typesYears);
 printf("Enter annual interest rate  ");
    scanf("%lf", &interest_rate);

    printf("Select interest type:\n");
    printf(" Simple Interest\n");
    printf(" Compound Interest (compounded annually)\n");
```

```
    printf("Enter choice (1 or 2): ");
    scanf("%d", &instrestType);
    if (instrestType==1)
    {
    double totalAmount = loanAmount * (1 + (interest_rate * typesYears) /
100);
    emi = totalAmount / typesYears;
     printf("Monthly Installment (EMI): ₹%.2lf\n", emi);
    }
    else if (instrestType==2)

    {
        double totalAmount = loanAmount * pow(1 + interest_rate/100,
typesYears);
        emi = totalAmount / typesYears;
        printf("Monthly Installment (EMI) %lf\n", emi);
    }

    else {
        printf("invalid");
    }
      return 0;
}
```

Result

```
input loanAmount22
input times in years2
Enter annual interest rate  3
Select interest type:
 Simple Interest
 Compound Interest (compounded annually)
Enter choice (1 or 2): 1
Monthly Installment (EMI): ┌é11.66
```

Q9 .

```c
#include <stdio.h>
int main(){
int course;
int department;
printf("enter the department 1 for CS and 2 of EE and 3 for BBA");
scanf("%d", &department);
switch (department)
{
case (1):
    printf("which course you want 1 for AI 2 for cyber");
    scanf("%d", &course);
    break;
switch (course)
{
case (1):
    printf("registering for AI");
    break;
case (2):
 printf("registering for cyber");
 break;

default:
 printf("not avalible");
    break;
}case (2):
```

```
 printf("which course you want 1 for ciruit analysis and 2 for control
system");
    scanf("%d", &course);
switch (course)
{
case (1):
    printf("regitering for circuit analysis");
    break;
case (2):
printf("registering for control system");
break;
default:
printf("not avaiable");
    break;
}
return 0;
case (3):
 printf("which course you want 1 for buisness and 2 for retail");
    scanf("%d", &course);
switch (course)
{
case (1):
    printf("regitering for buiness");
    break;
case (2):
printf("registering for retail");
break;
default:
printf("not avaiable");
    break;
}


default:

printf("no department avaliable");

    break;
}
return 0;
```

Result

```
enter the department 1 for CS and 2 of EE and 3 for BBA2
which course you want 1 for ciruit analysis and 2 for control system2
registering for control system
```

Q10

```c
#include <stdio.h> <math.h>
int main(){
    int age;
    int selection;
    int c;
    int discriminant;
    // a is the coefficient of x square b is of x and c the constant

    printf("input age");
    scanf("%d", &age);

if (age<12)
{
     printf("child ticket");
}
else if (12< age < 60)
{
     printf("adult ticket");
}
else if (age > 60)
{
  printf("senior ticket ");
}
printf("\n which kind of movie you wanna see 1 for action 2 for comedy and
3 for horror");
    scanf("%d", &selection);
switch (selection)
{
case (1):
     printf("you are seeing action movie");

     break;
```

```
case (2):
     printf("you are seeing comedy movie");
     break;
case (3):
     printf("you are seeing horror movie");
break;
default:
printf("movie not avaliable");
     break;

}


return 0;
}
```

Result

```
input age22
adult ticket
 which kind of movie you wanna see 1 for action 2 for comedy and 3 for horror3
you are seeing horror movie
```