Online Exams

Sri Lanka Institute of Information Technology

Suppose that 10 students face an aptitude test at SLIIT and the marks are stored in an array called **marks**. You are a
to complete the following C program to find the number of pass and fail students. The pass mark is the average ma
the students.

```
#include <stdio.h>
int main(void)
{
    float marks[10] = { 75.00, 45.00, 61.00, 91.00, 55.00, 43.00, 78.00, 56.00,95.00,12.00};
    .....
    .....
    .....
    return 0;
}
```

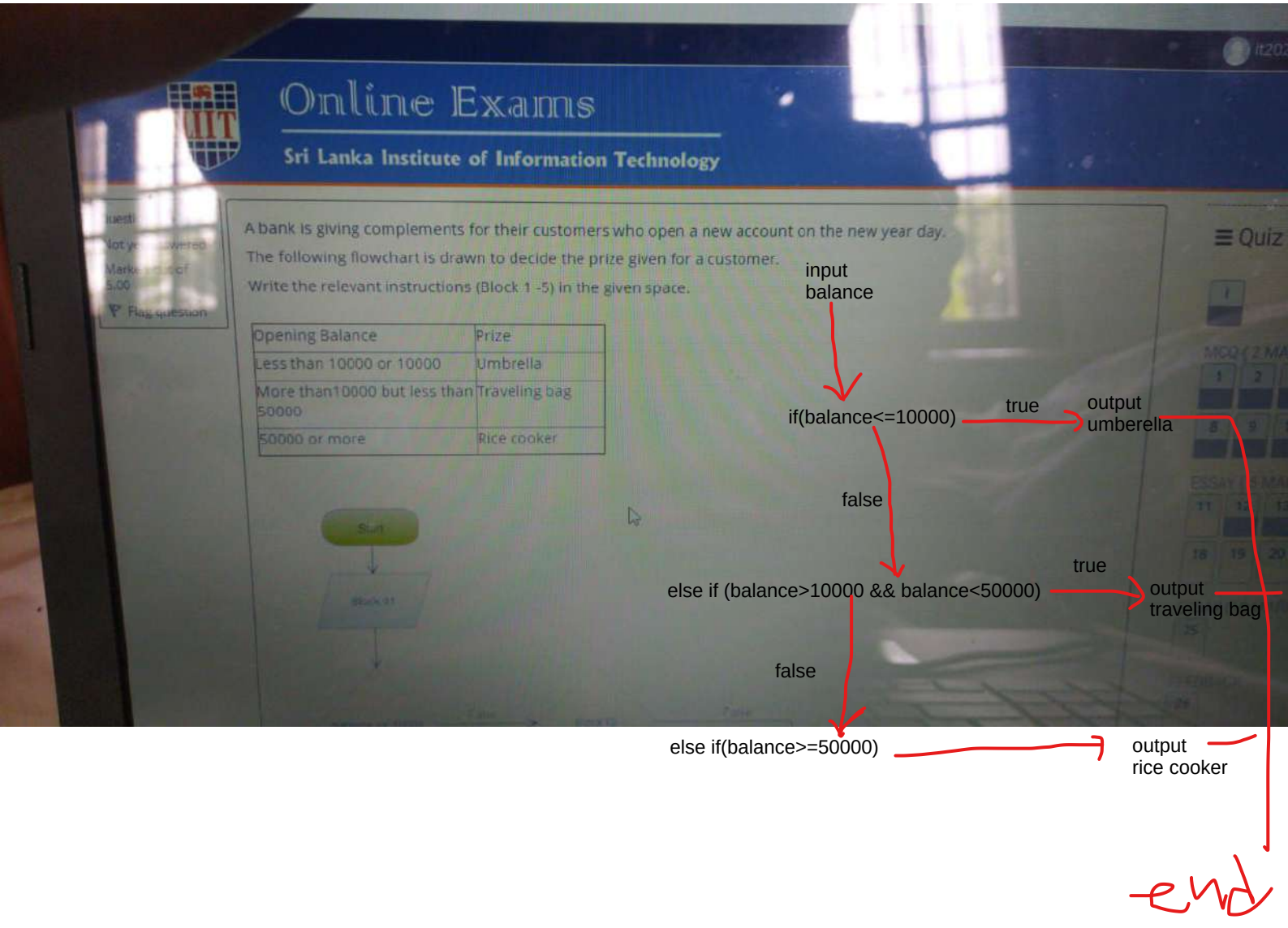
```
for(int i=0; i<10; i++)
{

if(marks[i] >=50)
   printf("pass");

else
printf("Fail");

}
```

Sri Lanka Institute of

Write two assert statements to test the following function.

```
int calculatePoints(float purchaseAmount)
{
        if(purchaseAmount >= 5000)
                return 500;
        else if(purchaseAmount >= 3000)
                return 200;
        else if(purchaseAmount >= 1000)
                return 100;
        else
                return 25;
}
```

```
assert ( calculatePoints(7000) == 500);
assert ( calculatePoints(4000) == 200);
```


Online Exams
Sri Lanka Institute of Information Technology
A bank is giving complements for their customers who open a new account on the new year day.
The following flowchart is drawn to decide the prize given for a customer.
Write the relevant instructions (Block 1 -5) in the given space.
Opening Balance
Prize
Less than 10000 or 10000
Umbrella
More than10000 but less than 50000
Traveling bag
50000 or more
Rice cooker
input balance
if(balance<=10000)
true
output umberella
false
else if (balance>10000 && balance<50000)
true
output traveling bag
false
else if(balance>=50000)
output rice cooker
end

Online Exams

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Complete the following C program to solve the given expression. Use **Standard C math library function.**

$$C = \sqrt{a^2 + b^2 - 2ab\,cos\emptyset}$$

Hint : if angle is 90 degrees, cosine will be cos (90 * 3.141592/180)

```
#include <stdio.h>
# include <math.h>
int main()
{
   float a = 3, b = 4, c;
   float angle = 90 * 3.141592/180;
   _____
   _____
   return 0;
}
```

c = sqrt(pow(a, 2)+ pow(b, 2) - 2*a*b*cos(angle));

9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

```
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
```

```
for(int i =1; i< 7; i++)
{

for(int j=1; j < 7; j++)
printf("*");

puts("");

}
```

```
7
1
3
1
10
1
5
1
9
1
11
1
```

Online Exams

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Question 17

Not yet answered

Marked out of 5.00

Flag question

Consider the following table having two columns. First column has line numbers and the second has differen expressions. Write the line numbers of the relevant statements in correct order to obtain the following outpu

No	Supportive components for program writing
1	{
2	}
3	for(int j=0;j<=6;j++)
4	printf("* ");
5	for(int j=1;j<=6;j++)
6	printf("\n ");
7	for(int j=0;j<=16;j++);
8	for(int j=1;j == 6;j++)
9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

519462

```
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
```

A company gives annual increments for their employees based on the following table.

Employee Category	increment %
A	4
B	6
C	8

increment amount = increment percentage * salary

Implement a function called calincrement( ) which calculates the increment when the salary and the empl
are passed as the parameters.

```
float calincrement( float salary, char empCategory)
{

switch(empCategory)
{

case 'A' :    return salary * (4.0/100.00); break;
case 'B' :    return salary * (6.0/100.00); break;
case 'C' :    return salary * (8.0/100.00); break;


}

}
```

Question 15

Not yet answered

Marked out of 5.00

Flag question

A 2D array called **att** is used to store the attendance of 4 students in a class. A sample dataset is shown below.

1	0	1	1	1
1	1	1	1	1
1	1	0	1	1
1	1	1	1	1

Complete the following C code to determine and display the students (row number) who has attended to the class all five days.

In this example the students numbers are 2, 4

```
# include <stdio.h>
int main(void)
{
    int att[5][5] = {{1, 0, 1, 1, 1}, {1, 1,1,1,1},{1,1,0,1,1},{1,1,1,1,1},{1,1,1,1,0}};
    .....
    .....
    .....
    return 0;
}
```

```
int i, j, sum=0;

for(i= 0; i<5; i++)
{

for(j=0; j<5; j++)
{
      if(att[i][j] == 1)
          sum++;
}

if(sum==5)
 printf("  %d", i);

sum=0;

}
```

≡ Quiz n
MCQ (2 MA
ESSAY (5 M
ESSAY (10
FEEDBACK

Moodle

Sri Lanka Institute of Information Technology

Question 17

Not yet answered

Marked out of 5.00

Flag question

A restaurant provides facility for their customers to check the price of the food items using an online menu. The menu details (item code , description and price) are stored in a text file called "menu.dat". Complete the following C code to display the menu on the screen.

A sample of menu.dat file is given below (ignore the headings)

item code	description	price
S1	Prawns	675.00
S2	Fish	850.00
S3	Chicken	575.00

```
# include <stdio.h>
int main(void)
{
    .....
    .....
    .....
    .....
  return 0;
}
```

```
char code[20], name[30];
float price;

FILE *ptr;

ptr = fopen("menu.dat", "r+");

if(ptr == NULL)
{
printf("File can not open");
return -1;
}

fscanf(ptr, "%s  %s %f", code, name, &price );

while (!feof(ptr))
{

printf(" %s \t %s \t %.2f ", code , name, price);
fscanf(ptr, "%s  %s %f", code , name , &price);

}

fclose(ptr);
```

≡ Quiz nav

Online Exams

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A bank uses a function called newBalance( ) to calculate the new account balance of a customer when the transaction type(w - withdrawal , d - deposit), deposit or withdrawal amount and current balance are given.

Implement a function called newBalance( ) which takes the transaction type(w - withdrawal , d - deposit), amount and current balance as parameters and calculate and return the new balance.

e.g. for withdrawal , new balance = current balance - amount

for deposit, new balance = current balance + amount

```
float newBalance(char traType, float amount, float cBalance)
{

switch(traType)
{

      case 'w' :
           return cBalance - amount ; break;
      case 'd' :
           return cBalance + amount ; break;

}

}
```

Quiz navigat

MCQ (2 MARKS EA

1 2 3 4

8 9 10

ESSAY (5 MARKS E

11 12 13

18 19 20

ESSAY (10 MARKS

25

FEEDBACK

26

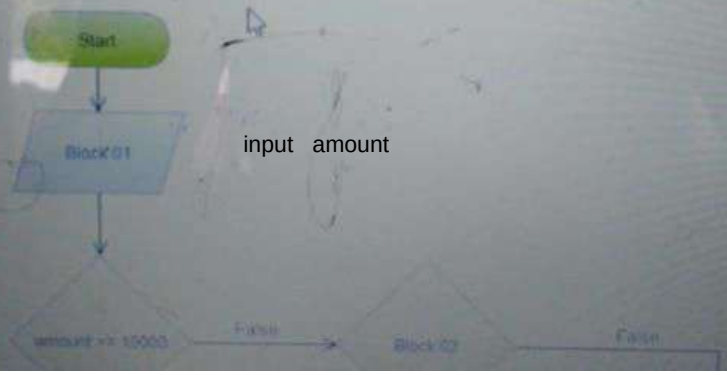
5.00

Flag question

The following flowchart is drawn to decide the prize given for a customer.

Write the relevant instructions (Block 1 -5) in the given space.

Transaction amount	Prize
More than 10000 or 10000	Sugar 1kg
Less than 10000 but more than 5000	Dhal 1kg
5000 or less	A soap



input amount

Sri Lanka Institute of Information Technology

A company gives annual increments for their employees based on the following table.

Employee Category	Increment %
A	4
B	6
C	8

increment amount = increment percentage * salary

Implement a function called callncrement( ) which calculates the increment when the salary and the employee category are passed as the parameters.

Moodle

Sri Lanka Institute of Information Technology

Question 17

Not yet answered

Marked out of 5.00

Flag question

A restaurant provides facility for their customers to check the price of the food items using an online menu. The menu details (item code , description and price) are stored in a text file called "menu.dat". Complete the following C code to display the menu on the screen.

A sample of menu.dat file is given below (ignore the headings)

item code	description	price
S1	Prawns	675.00
S2	Fish	850.00
S3	Chicken	575.00

```
# include <stdio.h>
int main(void)
{
    .....
    .....
    .....
    .....
    return 0;
}
```

Quiz nav

Question 3

Not yet answered

Marked out of 2.00

Flag question

Select incorrect statement/s regarding "w" file opening mode.

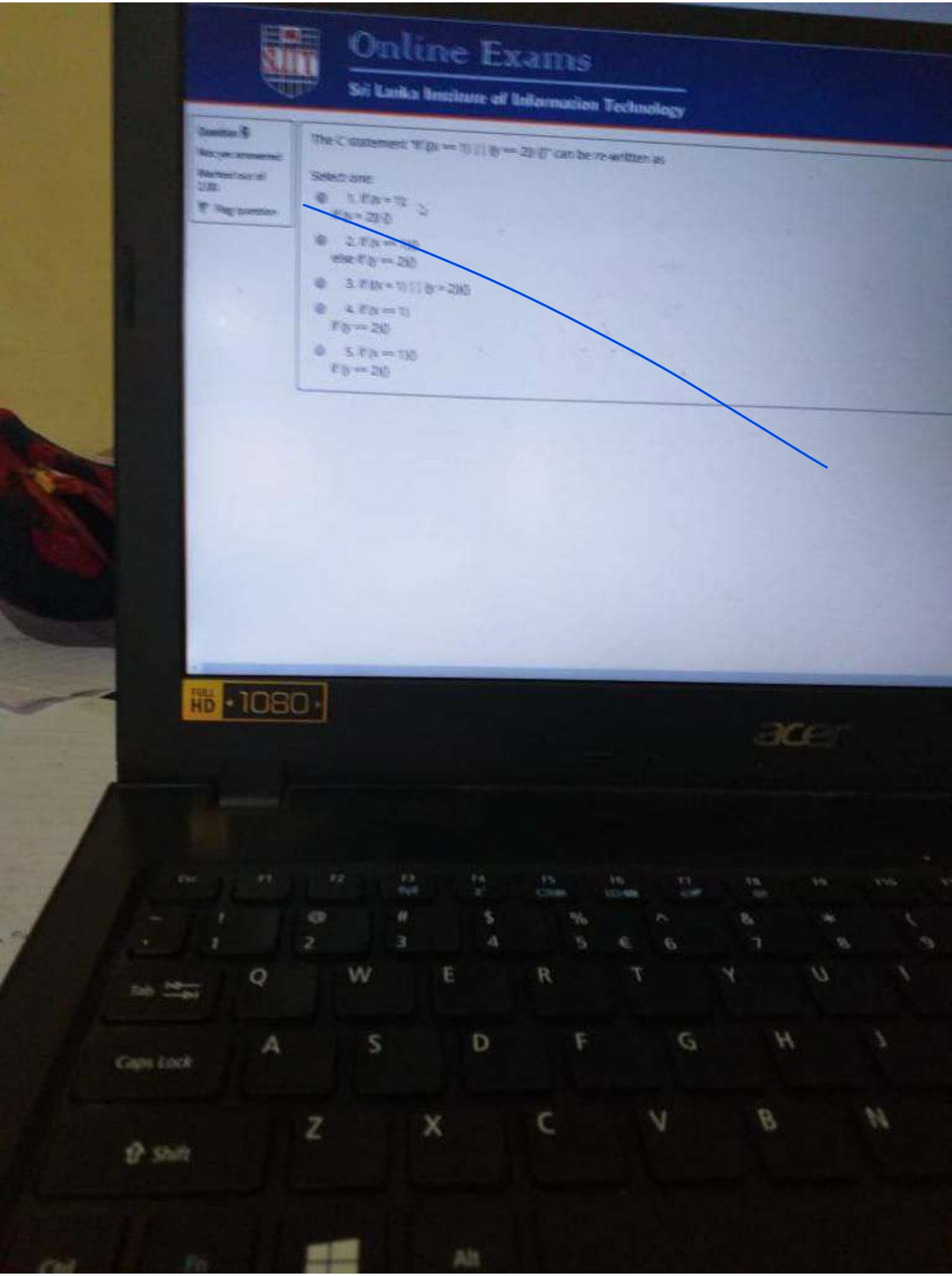
```
FILE *ptr;
ptr = fopen("readMe.dat","w");
```

Select one:

- 1. If the file doesn't exists, the file pointer will be always null
- 2. The "readMe.dat" file will be empty
- 3. The content will be added to the beginning of the file
- 4. If the file exist, it will over write the previous content.
- 5. If the file doesn't exist, a new file will be created.

FULL HD 1080

acer


Online Exams
Sri Lanka Institute of Information Technology
Select one:
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acer

5.00

Flag question

No	Supportive components for program writing
1	{
2	}
3	for(int j=0;j<=6;j++)
4	printf("* ");
5	for(int j=1;j<=6;j++)
6	printf("\n ");
7	for(int j=0;j<=16;j++);
8	for(int j=1;j == 6;j++)
9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

```
* * * * * *
* * * * *
* * * *
* * *
* *
*
```

5 1 10 4 6 2

Online Exams

Sri Lanka Institute of Information Technology

Question 17

Not yet answered

Marked out of 5.00

Flag question

Consider the following table having two columns. First column has line numbers and the second has differen expressions. Write the line numbers of the relevant statements in correct order to obtain the following outpu

No	Supportive components for program writing
1	{
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3	for(int j=0;j<=6;j++)
4	printf("* ");
5	for(int j=1;j<=6;j++)
6	printf("\n ");
7	for(int j=0;j<=16;j++);
8	for(int j=1;j == 6;j++)
9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

```
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
```

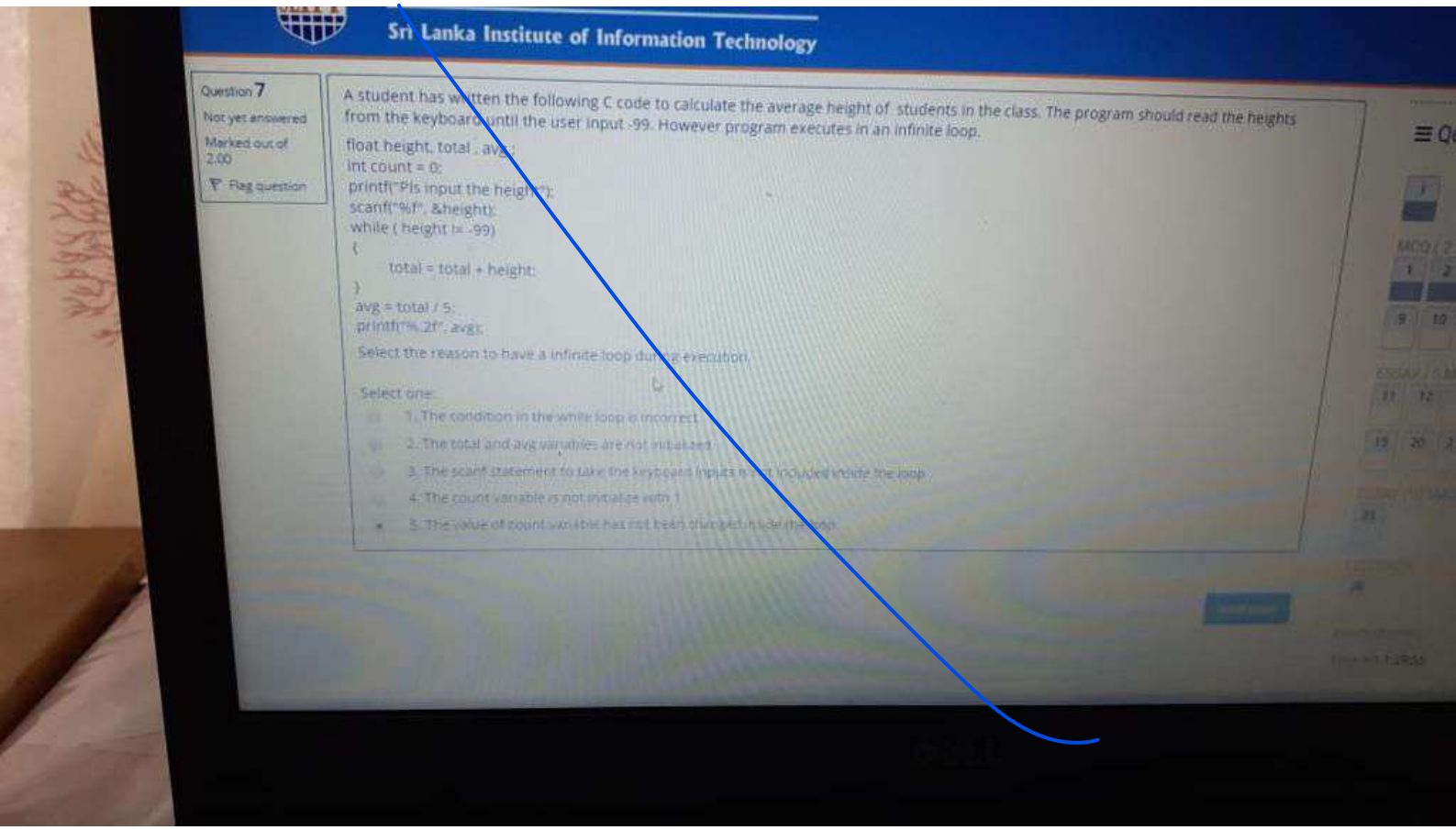
```
#include <stdio.h>

int main(void)
{
 int i, j;

 for(i=1; i<=6; i++)
 {
  for(j=1; j<=6; j++)
  {
   printf("* ");
  }
  printf("\n");
 }

 return 0;
}
```

5 1 9 4 6 2


Sri Lanka Institute of Information Technology
Question 7
Not yet answered
Marked out of 2.00
Flag question
A student has written the following C code to calculate the average height of students in the class. The program should read the heights from the keyboard until the user input -99. However program executes in an infinite loop.
float height, total , avg;
int count = 0;
printf("Pls input the height");
scanf("%f", &height);
while (height != -99)
{
total = total + height;
}
avg = total / 5;
printf("%.2f", avg);
Select the reason to have a infinite loop during execution.
Select one:
1. The condition in the while loop is incorrect
2. The total and avg variables are not initialized
3. The scanf statement to take the keyboard inputs is not included inside the loop
4. The count variable is not initialize with 1
5. The value of count variable has not been changed inside the loop

Suppose that 10 students face an aptitude test at SLIIT and the marks are stored in an array called **marks**. You are asked to complete the following C program to find the number of pass and fail students. The pass mark is the average mark of the students.

```
#include <stdio.h>
int main(void)
{
    float marks[10] = { 75.00, 45.00, 61.00, 91.00, 55.00, 43.00, 78.00, 56.00,95.00,12.00};
    .....
    .....
    .....
    return 0;
}
```

A shop maintains the item list in a text file called "item.dat", Complete the following C code to input the item details (item code , description , unit price, quantity) of 5 products from the keyboard and add new records to the existing file.

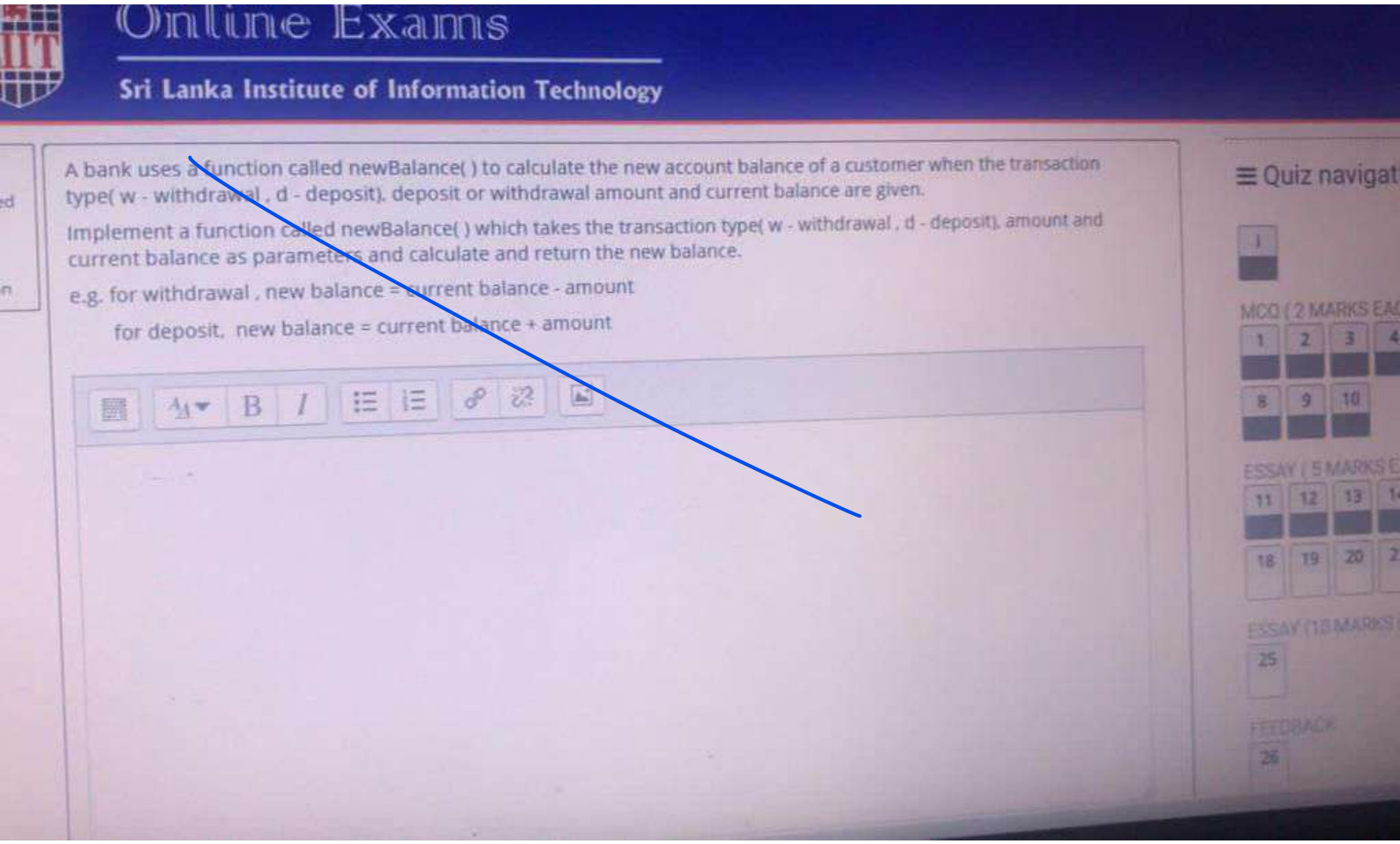
A sample of existing file is given below.

001 Sugar 135.00 150

002 Milk 345.00 55

003 Rice 98.00 200

```
# include <stdio.h>
int main(void)
{
    .....
    .....
    .....
    return 0;
}
```

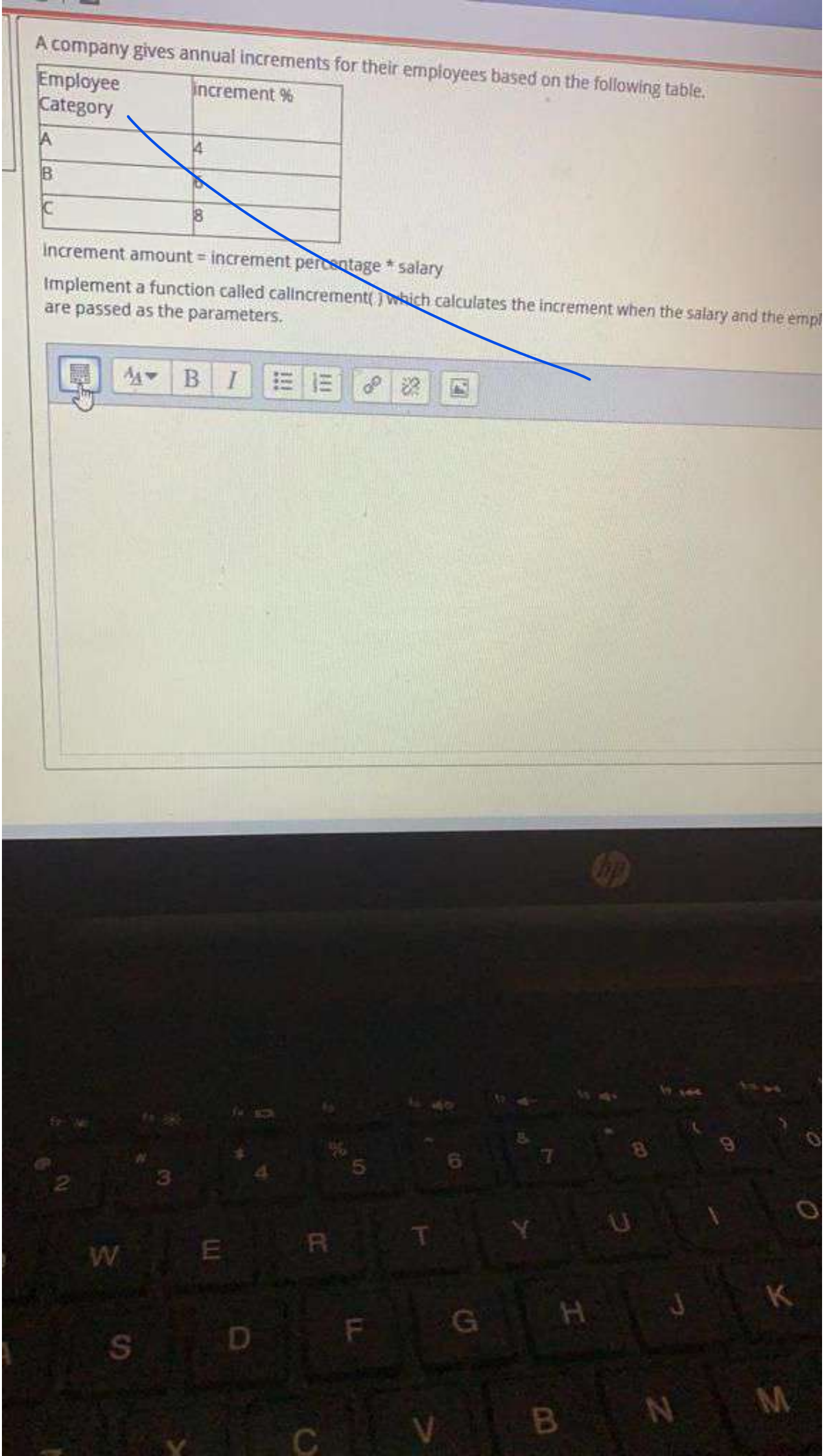

Online Exams
Sri Lanka Institute of Information Technology
A bank uses a function called newBalance( ) to calculate the new account balance of a customer when the transaction type(w - withdrawal , d - deposit), deposit or withdrawal amount and current balance are given.
Implement a function called newBalance( ) which takes the transaction type(w - withdrawal , d - deposit), amount and current balance as parameters and calculate and return the new balance.
e.g. for withdrawal , new balance = current balance - amount
for deposit, new balance = current balance + amount
Quiz navigat
MCQ (2 MARKS EA
ESSAY (5 MARKS E
ESSAY (10 MARKS
FEEDBACK

A company gives annual increments for their employees based on the following table.

Employee Category	increment %
A	4
B	6
C	8

Increment amount = increment percentage * salary

Implement a function called calIncrement( ) which calculates the increment when the salary and the empl
are passed as the parameters.



9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

```
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
```

```
7
1
3
1
10
1
5
1
9
1
11
1
```

Online Exams

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Question 1

Not yet answered

Marked out of 2.00

Flag question

Select the correct statement/s about assert statement

Select one or more:

- [x] 1. assert is used to test a function
- [x] 2. assert gives an error message
- [x] 3. assert statement always writes at the beginning of a program
- [ ] 4. assert statements written only in the main program
- [x] 5. assert can terminate a program

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Question 7

Not yet answered

Marked out of 2.00

Flag question

A fashion store has 4 branches and asks 7 customers to rate their customer service in each branch. The rate value

1 – Very poor, 2 – Week, 3 – Satisfactory, 4 – Good, 5 – Excellent

The fashion store expects to gather these details within 2D array that already created.

Select the suitable array/s to store these details.

Select one or more:

- [ ] 1. int service[6][3];
- [x] 2. int service[7][4];
- [x] 3. int service[4][7];
- [ ] 4. int service[5][7];
- [ ] 5. int service[7][5];

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Question 9

Not yet answered

Marked out of 2.00

Flag question

The C statement "if ((x == 1) || (y == 2)) {}" can be re-written as

Select one:

1. if (x = 1);
if (y = 2)) {}

2. if (x == 1){}
else if (y == 2){}

3. if ((x = 1) || (y = 2)){}

4. if (x == 1)
if (y == 2){}

5. if (x == 1){}
if (y == 2){}

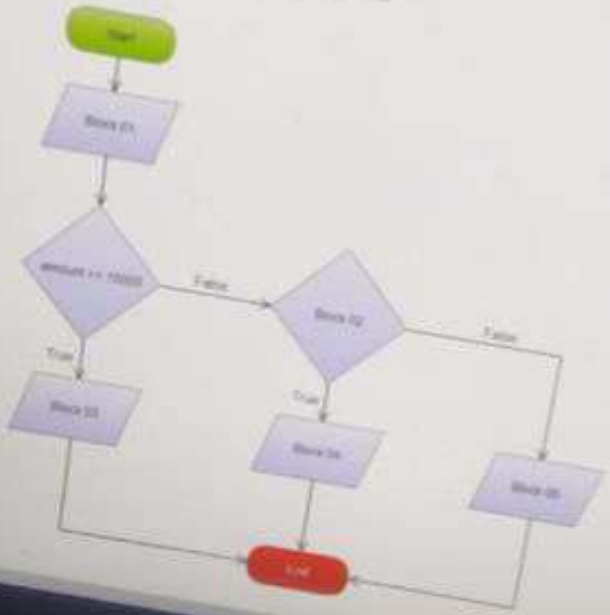
Moodle

Marked out of 3.00

Flag question

The following flowchart is drawn to decide the prize given for a customer.
Write the relevant instructions (Block 1 -5) in the given space.

Transaction amount	Prize
More than 10000 or 10000	Sugar 1kg
Less than 10000 but more than 5000	Dhal 1kg
5000 or less	A soap



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Online Exams

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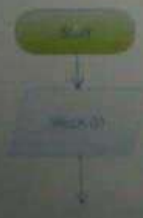
A bank is giving complements for their customers who open a new account on the new year day.

The following flowchart is drawn to decide the prize given for a customer.

Write the relevant instructions (Block 1 -5) in the given space.

Opening Balance	Prize
Less than 10000 or 10000	Umbrella
More than10000 but less than 50000	Traveling bag
50000 or more	Rice cooker



≡ Quiz

Consider the following table having two columns. First column has line numbers and the second has different programing statements and expressions. Write the line numbers of the relevant statements in correct order to obtain the following output.

No	Supportive components for program writing
1	{
2	}
3	for(int j=0;j<=6;j++)
4	printf("* ");
5	for(int j=1;j<=6;j++)
6	printf("\n ");
7	for(int j=0;j<=16;j++);
8	for(int j=1;j == 6;j++)
9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *
* * * * * *

Quiz navigation

Online Exams

Sri Lanka Institute of Information Technology

Copy and modify the given program to apply the coding conventions.

A bank states their interest rate of savings accounts and fixed deposits f the balance amount of the bank account. If the bank account holder's ag considered as senior citizens.

Account Type		Interest Rate
Savings Account (S)	Current amount <= 8000	4%
	Current amount > 8000	8%
Fixed Deposits (F)	Current amount <= 8000	10%
	Current amount > 8000	15%

User inputs the account type, balance amount of the account and the age o The program should calculate and display the corresponding interest amou should take user inputs until the user enters an age less than 60. (Not a seni

```
#include <stdio.h>
int main()
{float balance, interestAmount;
char type, answer;
int age;
printf("Enter age of the account holder : ");
scanf("%d", &age);
```

Sri Lanka Institute of Information Technology

A shop maintains the item list in a text file called "item.dat". Complete the following C code to input the item details (item code , description , unit price, quantity) of 5 products from the keyboard and add new records to the existing file.

A sample of existing file is given below.

001 Sugar 135.00 150
002 Milk 345.00 55
003 Rice 98.00 200

```
# include <stdio.h>
int main(void)
{
    .....
    .....
    .....
    return 0;
}
```

MCQ

1 2 3 4 5
8 9 10

ESSAY

11 12 13 14 15
18 19 20 21 22

ESSAY (10 MARKS EACH)

25

FEEDBACK

26

Sri Lanka Institute of Information Technology

Complete the following c program to read a password from the key board and check whether it is a valid password. A password is considered as valid if it has more than 10 characters and if it has at least one upper case alphabetical character, one lower case alphabetical character, one numeric character and one of @,&,$.

Characters	Equivalent ASCII
'A'	65
'Z'	90
'a'	97
'z'	122
'0'	48
'9'	57

```
# include <stdio.h>
int main(void)
{
    .....
    .....
    .....
    return 0;
}
```

```
#include <string.h>

char pword[56];
int i, upper=0, lower=0, num=0, symbol=0;

 if(strlen(pword) < 10)
{
       printf("invalid");
         break;
}

for(i=0; i<strlen(pword); i++)
{

    if(pword[i] >=65 && pword <= 90)
         upper++;

    if(pword[i] >=97 && pword <= 122)
         lower++;

    if(pword[i] >=48 && pword <= 57)
         num++;

    if(pword[i] == '@' ||  pword == '&'  || pword[i] == '$' )
         symbol++;
}
if(upper>=1 && lower >= 1 && num >= 1 && symbol>=1)
  printf("valid");

else printf("invalid");
```

Sri Lanka Institute of Information Technolo

Write two assert statements to test the following function.

```
int calculatePoints(float purchaseAmount)
{
        if(purchaseAmount >= 5000)
                return 500;
        else if(purchaseAmount >= 3000)
                return 200;
        else if(purchaseAmount >= 1000)
                return 100;
        else
                return 25;
}
```

Complete the following C code to reverse the data stored in an array. (use a loop)

starting array values

2	5	8	4	9

after reverse array values

9	4	8	5	2

```
# include <stdio.h>
int main(void)
{
    int num[5] = {2, 5, 8, 4, 9};
    .....
    .....
    .....
    return 0;
}
```

```
int i,j=0, rev[5];

for(i=4; i <=0 ; i--)
{
    rev[j] = num[i];
    j++;
}
```

Online Exams

Sri Lanka Institute of Information Technology

Copy and modify the given program to apply the coding conventions.

A bank states their interest rate of savings accounts and fixed deposits for senior citizens. The interest rate depends on the balance amount of the bank account. If the bank account holder's age is greater than or equals to 60 years, they are considered as senior citizens.

Account Type		Interest Rate
Savings Account (S)	Current amount <= 8000	4%
	Current amount > 8000	8%
Fixed Deposits (F)	Current amount <= 8000	10%
	Current amount > 8000	15%

User inputs the account type, balance amount of the account and the age of the account holder through the keyboard. The program should calculate and display the corresponding interest amount payed to the account holder. The program should take user inputs until the user enters an age less than 60. (Not a senior citizen)

```
#include <stdio.h>
int main()
{float balance, interestAmount;
char type, answer;
int age;
printf("Enter age of the account holder : ");
scanf("%d", &age);
while(age>=60){
printf("Enter account type : ");
```

Sri Lanka Institute of

Write two assert statements to test the following function.

```
int calculatePoints(float purchaseAmount)
{
        if(purchaseAmount >= 5000)
                return 500;
        else if(purchaseAmount >= 3000)
                return 200;
        else if(purchaseAmount >= 1000)
                return 100;

        else
                return 25;

}
```

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Sri Lanka Institute of Information Technology

uestion 12

ot yet answered

larked out of 00

Flag question

As student has written the following program to input the radius of a circle from the keyboard and calculate the display the area of the circle. However the program does not generate the required output. Identify four bugs in the following program and re-write the program with out errors.

```
#include <stdio.h>
int main()
{
  float r, area;

  printf("Enter radius of a circle : ");
  scanf("%f\n", r);

  area = 22 / 7.0 * r * r;

  printf("Area = %.2d", &area);

  return 0;
}
```

```
#include <stdio.h>
int main()
{
    float r, area;

   printf("Enter radius of a circle : ");
   scanf("%f", &r);

   area = (22/7.0) *r*r;

    printf("Area = %,2f", area);

    return 0;
}
```

}

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Question 15

Not yet answered

Marked out of 5.00

Flag question

Consider the following table having two columns. First column has line numbers and the second has different programing statements and expressions. Write the line numbers of the relevant statements in correct order to obtain the following output.

No	Supportive components for program writing
1	{
2	}
3	for(int j=0;j<=6;j++)
4	printf("* ");
5	for(int j=1;j<=6;j++)
6	printf("\n ");
7	for(int j=0;j<=16;j++);
8	for(int j=1;j == 6;j++)
9	for(int k=1;k<=6;k++)
10	for(int k=j;k<=6;k++)
11	if (j == k)
12	else

Output

```
* * * * * *
* * * * *
* * * *
* * *
* *
*
```

Quiz nav

1

MCQ (2 MARKS)

1 2 3

9 10

ESSAY (5 MARKS)

11 12 13

19 20 21

ESSAY (10 MARKS)

25

FEEDBACK

26

Finish attempt ...

Time left 0:43:22

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Assuming that the following C functions are implemented, write the main program to calculate the floor area of the above plan (excluding garden area).

//calculate the area of a rectangle

float area(float length, float width);

Online Exams

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Complete the following C program to solve the given expression. Use **Standard C math library function.**

$$C = \sqrt{a^2 + b^2 - 2ab\ cos\emptyset}$$

Hint : if angle is 90 degrees, cosine will be cos (90 * 3.141592/180)

```
#include <stdio.h>
# include <math.h>
int main()
{
   float a = 3, b = 4, c;
   float angle = 90 * 3.141592/180;
   _____
   _____
   return 0;
}
```

c = sqrt (pow(a,2) + pow(b,2) - 2*a*b*cos(angle));