SPREADSHEET SOFTWARE

Exercises

01

	A	B	C	D	E
1	**Cake Friday Stats**				
2					
3		*4C*	*4G*	*4W*	*4S*
4	Children in Class	24	22	19	27
5	Cakes Needed				
6					
7	Cakes per child	3			
8	*plus add 2 cakes for each class for the teachers!*				
9					

02

	A	B	C	D	E	F
1	**Printer Cartridge Reps Commission for This Month**					
2						
3	*Sales Rep*	*Sales*	*Commission This Month*		Commission Rate	12.50%
4	Emily	£25,000.00				
5	Rob	£19,000.00				
6	Michael	£27,500.00				
7	Francine	£14,000.00				
8	Mircea	£33,300.00				
9	Helena	£41,800.00				
10	Bridget	£17,300.00				
11	Paolo	£23,800.00				
12	**TOTAL**	**£201,700.00**	**£0.00**			

03

	A	B	C	D	E	F	G
1	**Holiday Spending Money - European Trip**						
2							*Static Rates*
3	*Family Member*	*UK £ Sterling*	*Euros*	*Czech Korunas*		Euro rate	1.13
4	Dad	500				Czech Koruna rate	28.43
5	Mum	500					
6	Annie	150					
7	Josh	150					
8	Sarah	200					
9	Grandma	300					
10	Grandpa	300					
11	FAMILY TOTAL:						
12							

04

	A	B	C	D	E	F	G
1	METALLICA	**T-Shirt Orders for this Month**					
3	*Order No.*	*Quantity*	*Colour*	*Order Cost*		Price	**£17.99**
4	AS/1101A-03	1,500	Black				
5	AS/1101A-04	950	Black				
6	AS/1101A-05	2,000	White				
7	AS/1101A-06	4,000	Black				
8	AS/1101A-07	800	Blue				
9	AS/1101A-08	1,200	Black				
10	AS/1101A-09	750	Black				
11	AS/1101A-10	1,100	Blue				
12	AS/1101A-11	1,700	Black				
13	**TOTALS**						
14							

05

	A	B	C	D
1	*Year Summary of Concerts*			
2			Ticket Sales	
3		*Adult Sales*	*Child Sales*	*Revenue*
4	Christmas concert	120	35	
5	Easter Eggstravaganza	147	22	
6	Summer Concert	191	15	
7	CONCERT TOTALS	458	72	
8				
9	Adult Ticket Price	£7.50		
10	Child Ticket Price	£2.00		
11				

06

(ii) The following worksheet contains details related to the cultivation of vegetables using organic fertilizers in several areas of the North-Western Province.

	A	B	C	D
1	**Area**	**Acres of land**	**Cost of organic fertilizers**	**Fertilizer price** **1**Kg - Rs.
2				100.00
3	Wariyapola	100		
4	Nikaweratiya	170		
5	Galgamuwa	180		
6	Puttalam	90		
7	Chilaw	120		
8	**Total cost of fertilizer**			

a. Write down the appropriate formula that should be entered in the cell C3 to calculate the price to be allocated for each area to supply fertilizer, if 50 kg of organic fertilizer is required for one acre of land. Note that this formula is copied to other related cells.
(Cost of organic fertilizers = Acres of land *x* fertilizer is required for one acre *x* Fertilizer price for 1Kg)

b. Write down an appropriate formula that should be entered in the cell C8 to calculate the total cost of organic fertilizers.

c. Write a suitable formula to find the maximum amount of money allocated to each area for organic fertilizers.
d. The cost of supplying fertilizer to each area is expected to be represented in a chart. Suggest a suitable chart type for it.

07

Given below is a part of an electronic spreadsheet of a stock book used in an fuel distribution outlet located in Galle area. This is used for the fuel price amendment of Ceypetco on 31st August 2023.

	A	B	C	D	E	F	G	H
1			Ceypetco Price Index				Propritetor Stock Book	
2	Product Symbol	Fuel Type	Current price of one liter (Rs.)	Amended price of one liter (Rs.)	New price of a liter (Rs.)	Quantity of fuel available at the time of price increment (liters)	Additional profit (Rs.)	Percentage of price increase
3	A0023199	Lanka Petrol 92 Octane	348.00	13.00	361.00	250	3250.00	
4	A0018199	Lanka Petrol 95 Octane Euro 04	375.00	42.00	417.00	300	12600.00	
5	A0013199	Ceylon White Diesel	306.00	35.00	341.00	450	15750.00	
6	A0016199	Lanka Super Diesel Smart Euro 04	358.00	1.00	359.00	465	465.00	
7	A0017199	Sri Lanka Kerosene	226.00	5.00	231.00	324	1620.00	
8							33685.00	

(I) Write down a formula for **cell E4** to get the new price of "Ceylon Petrol 95 Octane Euro 04 ".

(II) Assume that the formula written in cell E4 is copied to cell E7. Write down the updated formula displayed in **cell E7**.

(III) Write down the formula written in **cell G3** to calculate the additional profit earned by the supplier due to the Ceylon Petrol 92 octane fuel price increment.

(IV) Write down the function for **cell F8** to find the maximum amount of fuel liters stored in suppliers' storage.

(V) Write the function written in **cell G8** to calculate the supplier's total additional profit due to the quantity of fuel available at the time of the price increment.

(VI) Write the formula using cell address to find the percentage of price increase in Ceylon Petrol 92 Octane fuel in **cell H3**.

08

(i). (The following spreadsheet shows loan details, granted by a loan company called "Pay Ease". It offers loans to customers subject to a maximum of 300,000/- loan, with an interest rate of 14.5% for that loan amount, and recovers loans by a maximum of 12 installments or less. Answer the following questions using this worksheet.

	A	B	C	D	E	F	G
1	Pay Ease Loan Company						
2	Customer Name	Loan Amount	No of Installments	Down Payment	Loan Balance	Settlement Amount	Monthly Installment
3	Sisira Kumara	300,000.00	12	75,000.00	225,000.00	257,625.00	21,468.75
4	Jagath Perera	150,000.00	8	37,500.00	112,500.00	128,812.50	16,101.56
5	Kumari Herath	225,000.00	10	56,250.00	168,750.00	193,218.75	19,321.88
6	Nayana Balasooriya	75,000.00	6	18,750.00	56,250.00	64,406.25	10,734.38
7	Ajith Lokuge	125,000.00	4	31,250.00	93,750.00	107,343.75	26,835.94
8							
9	Interest Rate	14.50%					
10	Highest Loan Amount	300,000.00					
11	Least No. of Installments	4					
12							

(a) When a customer takes a loan amount, 25% of that amount must be paid as a down payment. Write the formula to be entered in cell D3 to calculate the amount for the first customer.
(Down Payment=Loan Amount x 25/100)

(b) Write the formula to be entered in cell E3 if it is necessary to get the balance loan amount (Loan Balance) related to the first customer in cell E3.
(Balance Loan Amount = Total Loan Amount - Down Payment)

(c) Write the formula to be entered in cell F3 to calculate the Settlement Amount.
(Settlement Amount = Balance Loan Amount + (Balance Loan Amount x Interest Percentage))

(d) To calculate the Monthly Installment in cell G3, write the formula to be entered in that cell. (Monthly Installment = Settlement Amount / Number of Installments)

(e) Write the formula to get the maximum loan amount applied for, in cell B10.

(f) Write the formula in cell B11 to get the minimum number of installments in which the loan will be repaid.

Note: Formulas related to (e) and (f) above should be written as =function(cell1:cell2).

09

(5)   Consider the following income report of Mahaweli Maha Vidyalaya and answer questions i to vi.
Each house collected money from the students for the expenses of the sports festival and 10% of the total collected by each house should be given to the school.

	C	D	E	F	G	H	I
3				Sportsmeet -2019 Income Report			
4	Date	House Name	No.of Students	Fee per Student	Amount	Contribution to School	Amount after Contribution
5	5-Jan-19	Hansa	1040	Rs. 100.00	Rs. 104,000.00	Rs. 10,400.00	Rs. 93,600.00
6	10-Jan-19	Lihini	1030	Rs. 100.00	Rs. 103,000.00	Rs. 10,300.00	Rs. 92,700.00
7	14-Jan-19	Mayura	1025	Rs. 100.00	Rs. 102,500.00	Rs. 10,250.00	Rs. 92,250.00
8	16-Jan-19	Parevi	1035	Rs. 100.00	Rs. 103,500.00	Rs. 10,350.00	Rs. 93,150.00
9		Total					Rs. 371,700.00
10	Contribution Percentage		10%				

   i.   Write down the correct formula to find the amount collected by Hansa House in cell G5.

   ii.   The **Contribution Percentage** is given in cell E10. The amount of **Contribution to School** is calculated by multiplying the **Amount** by the **Contribution Percentage.** Write down the formula to display the **Contribution to School** in cell H5 for Hansa house. Assume that this formula will be copied to other cells to calculate the **Contribution to School** for all houses.

   iii. Write down the correct formula to find the total **Amount After Contribution** of Hansa House in cell I5.

   iv.   Write down the correct formula to find the total income (**Total Amount After Contribution**) in cell I9.

   v.   Organizing committee decided to change the contribution percentage from 10% to 12%. What are the cells you need to change after this?

   vi.   Name two types of charts, to display the **house name** vs **amount after contribution**.

Web Design using HTML

Exercises

01

(iii) The HTML source of the web page shown below is given with certain missing tags labeled ① to⑥.
Write down the label number and the corresponding HTML tag selecting from the list given below.

List : {sup, sub, colspan, rowspan, a, ul, ol, dl, hr, u, h1, h2}

```
<html><head></head><body>
<center>
<h1>DRAWING/PAINTING CONTEST - 2023</h1>
<①> <img src="girl.jpg"> </center>
<②>
<li>Theme :<i> "LIFE"</i></li>
<li>Registration :
<a href="www.contest.lk">www.contest.lk</a>
</li>
<li>Deadline :
25<③>th</③> of  May 2023</li>
</②>

<table border="2">
<tr><th ④="2">Prizes & Certificates</th></tr>
<tr>
<td>1<③>st</③> Prize</td>
<td ⑤ ="3">Cash Prizes</td>
</tr>
<tr><td>2<③>nd</③> Prize</td></tr>
<tr><td>3<③>rd</③> Prize</td></tr>
</table>
<center><⑥>Hurry up! Apply Soon ...<⑥></center>
</body></html>
```

DRAWING/PAINTING CONTEST - 2023

- Theme : *"LIFE"*
- Registration : www.contest.lk
- Deadline : 25th of May 2023

Prizes & Certificates	
1st Prize	Cash Prizes
2nd Prize	
3rd Prize	

Hurry up! Apply Soon ...

02 **(III)** The output of the web page shown in Figure 1 is given below. Certain missing tags of HTML source labeled 1 – 12 are given in Figure 2.

Figure 1: HTML Output

```
<html>
        <①><title>ICT</title></①>
<body>
        <② face="Bradley Hand ITC"><h1 align="center">ICT in Education</h1></②>
        <③><④ src="C:/Users/HP/Desktop/OL ICT/3rd term ICT paper/image.png" width="500px"
height="200px" /></③>
        <⑤>"Information and Communications Technology (ICT) can impact student learning when teachers are
digitally literate and understand how to integrate it into curriculum. </⑤>
        <h2><② face="Comic Sans MS">The Importance of ICT in Education</②></h2>
        <⑥>
    <⑦>E-learning or Online Learning</⑦>
    <⑦>ICT brings inclusion</⑦>
    <⑦>ICT promotes higher-order thinking skills</⑦>
    <⑦>ICT in education improves engagement and knowledge retention</⑦>
        </⑥>
        <hr>
        <h2 align="center"><②  face="Curlz MT">Future of ICT</②ﾞ></h2>
        <⑧ border="1" cellpadding="5" cellspacing="6" align="center">
<⑨><⑩>Modern Technologies</⑩><⑩>Job Opportunities</⑩><⑩>Top New Programming Languages to
Learn</⑩></⑨>
                <⑨><⑪>Extended Reality (XR)</⑪><⑪>AI/Machine Learning
Engineer</⑪><⑪>Kotlin</⑪></⑨>
                <⑨><⑪>AI-enhanced Everything</⑪><⑪>Data
Scientist/Analyst</⑪><⑪>TypeScript</⑪></⑨>
                <⑨><⑪>Quantum Computing</⑪><⑪>Cybersecurity
Analyst/Expert</⑪><⑪>Rust</⑪></⑨>
        </⑧>
<⑤>For your knowledge :-<⑫ href="https://www.yourteaminindia.com/blog/emerging-trends-in-information-
technology ">2023 Emerging Technologies</⑫></⑤>
</body>
</html>
```

Figure 2: HTML Source

tags – (p, font, table, center, tr, head, th, td, a, img, ol, ul, li, h1, hr, h2)

03 HTML code and corresponding web page are shown in following figure. Answer the questions based on it.

```
<❶>
 <head><❷>Rambutan</❷>
</head>
 <❸><❹>Rambutan Season </❹>
<p><center><img ❺=rambutan.jpg  width =200 height=150>
<p ><❻ size=2>rambutan is a tasty fruit</❻></p></center>
<p align="justify">Commonly known as Rambutan it is known
botanically as Nephelium lappaceum. The
Rambutan is a tropical tree which belongs to the
Sapindaceae family and also the fruit of this tree.
Although it does not grow very tall, it produces an
ample harvest. Rambutan is widely distributed
throughout
<❼ type="circle"><li>Indonesia</li>
<li>Malaysia</li><li>Sri Lanka</li>
<li>Southeast Asia</li> </❼>
 and is identified in some countries,</p>
 <h4>Important Dates</h4>
<i>June 15<❽>th</❽> of 2018</i> - Rambutan Festival
 <h4>Links</h4>Here is a link to details
<❾ ❿="www.rambutan.com">Further information</❾>
</❸>
</❶>
```

Rambutan Season

rambutan is a tasty fruit

Commonly known as Rambutan it is known botanically as Nephelium lappaceum. The Rambutan is a tropical tree which belongs to the Sapindaceae family and also the fruit of this tree. Although it does not grow very tall, it produces an ample harvest. Rambutan is widely distributed throughout

- Indonesia
- Malaysia
- Sri Lanka
- Southeast Asia

and is identified in some countries,

Important Dates

June 15th of 2018 - Rambutan Festival

Links

Here is a link to details Further information

i.   Name suitable tag element or attribute for the positions labeled as (1) to (10)
ii.   What is the domain name of the web page which you can see when you click on the link "further information"
iii.   According to the code written for get rambutan.jpg image into the web page, where should be the image saved in?
iv.   Write HTML code to change above bulletin list in to numbered list

ALGORITHMS

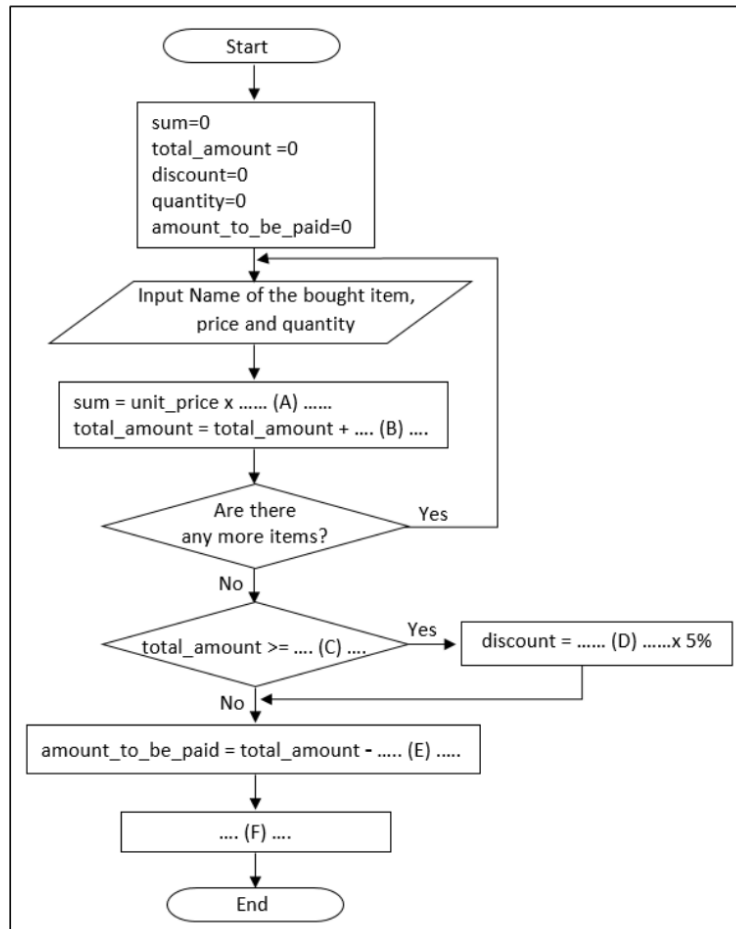**01** (i) Write **one** similarity and **one** difference between *a variable* and *an array* in a computer programme.

(ii) Write down the output of the Pascal code below.

```
Program writeAnswer;
Var k,j:integer;
Begin
        k:=1;
        j:=2;
        while(k<=30) do
        Begin
                writeln(k);
                k:=k+j;
                j:=j+1;
        End;
End.
```
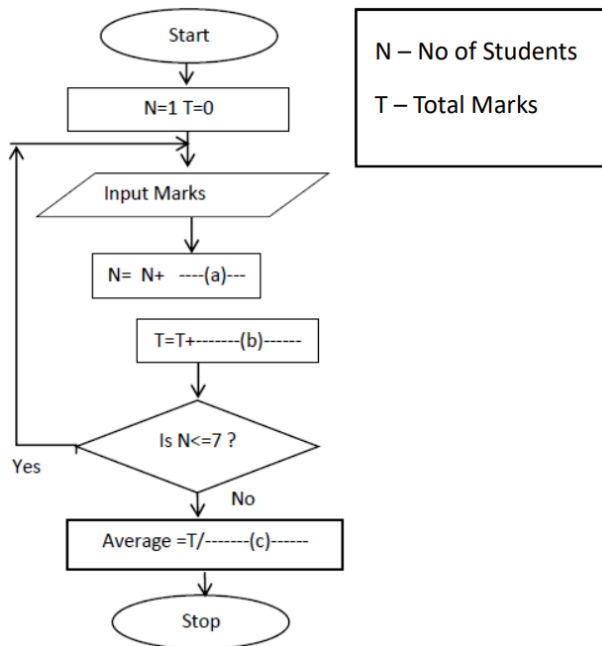
(iii) When a person goes to a store and buy the goods he needs, if the total amount of the purchased goods is Rs. 10000 or over, a 5% discount is given to him.
The flow chart to find the amount to be paid by the person is given with blank labelled from A to F.

Write down the appropriate answer to match the labels from A to F in the **label ⟶ answer** format

02

(I) The following flowchart has been created to Input marks obtained by each student in grade 12 for the group project, and find the average marks obtained by the group. Write down the appropriate answer to match the labels **a, b, c**.

```
            Start
              │
              ▼
        ┌──────────┐
        │ N=1 T=0  │          ┌──────────────────────┐
        └──────────┘          │ N – No of Students    │
              │               │                       │
     ┌────────▼────────┐      │ T – Total Marks       │
     │                 │      └──────────────────────┘
     │   Input Marks   │
     │                 │
     └────────┬────────┘
              │
        ┌─────▼──────────┐
        │ N= N+  ----(a)---│
        └─────┬──────────┘
              │
        ┌─────▼──────────┐
        │ T=T+-------(b)------│
        └─────┬──────────┘
              │
         ◇────▼────◇
         │ Is N<=7 ? │
Yes  ────◇─────────◇
 │            │ No
 │       ┌────▼───────────────┐
 └───────│ Average =T/-------(c)------│
         └────┬───────────────┘
              │
            Stop
```

(II) The names of 100 students registered for a course are stored using an array. Below is a segment of a program prepared for that. Answer the questions given below using this segment of program.

```pascal
var student:array[0..99] of integer;
    i:integer;
    stu_name:string;
    begin
        for i:=0 to 99 do
        begin
            writeln('Plese Enter Student Name');
            readln(stu_name);
        end;
    end.
```

(a) What is the name of this array?
(b) How many elements are there in this array?
(c) What are the variables declared in this program?

(III) What would be the values of p, q, r and s after executing the following pseudocode on array A.

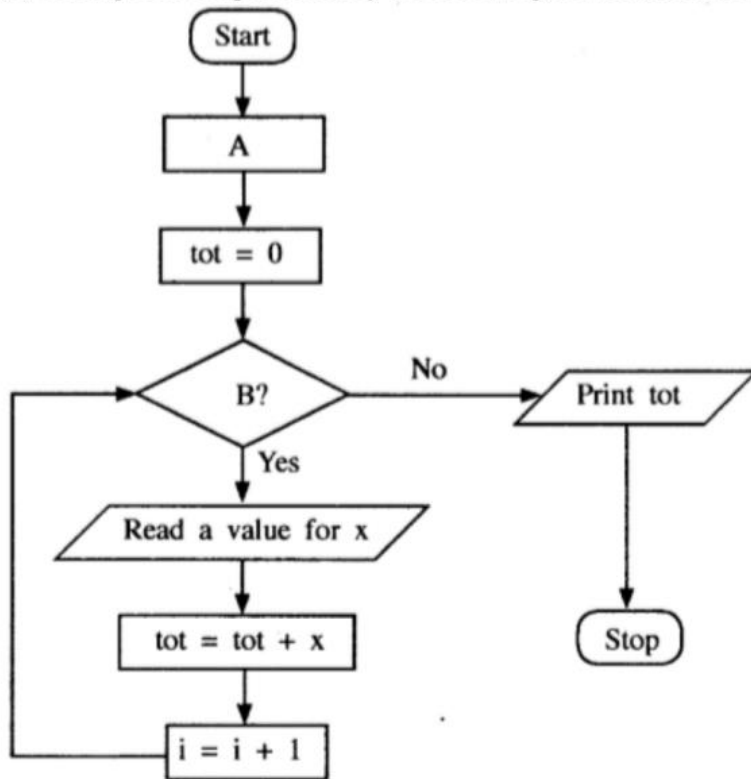| A[0]	A[1]	A[2]	A[3]
p	q	r	s

```
BEGIN
        value=0;
        j=0;
        while j<4 do
                A[j]=value;
                value=value+3;
                j=j+1;
        End while
END
```

03 (6) The algorithm represented by the following flowchart reads 5 numbers and prints the sum of them.
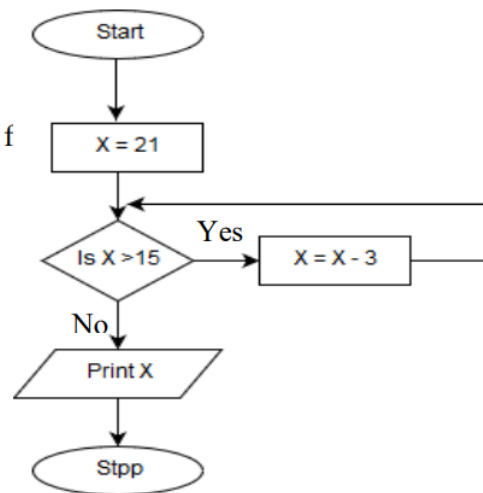

i.   Identify and write down the appropriate statements for labels **A** and **B**.
ii.   Write a pseduocode to represent the above flowchart.

04 A. Following is a flowchart design for certain task

      i.   Find the output of this flowchart
      ii.   write the corresponding pseudo code to this f

B. Following is a pascal program which written to display whether a given number is a multiples of seven or not.

```pascal
program multiples;
var     n:integer;
        result:string;
begin
        writeln("Enter number");
        readln(n);
        while n>=7 do
        begin
                if n mod 7 = 0 then
                        result:="Multiple of seven"
                else
                        result:="Not a Multiple of seven";
                writeln(n, "is ",result);
                writeln("Enter number");
                readln(n);
        end;
end.
```

   i.   What is the requirement to terminate the loop?
  ii.   What is the output when enter 15 as input?
 iii.   Draw the flowchart which based to write this program.

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