(a)	(i)	State the function	n of a pivot elem	ent as used in o	data structures.	(2 marks)
	(ii)	Outline the functi	ion of a <i>break</i> st	atement as used	1 in programming.	(2 marks
	(iii)	State two circums	stances under w		yould be used in a pr	rogram. (2 marks)
(b)	(i)	Describe the term	n <i>binary tree</i> as		uctures.	(2 marks)
	(ii)	system developm			program coding sta	ges of (4 marks)
(c)	if, C	following is a list of fonst, define, write, a tify four C program	double, Char, flo	pat		(2 marks)
(d)	_	Name	n input file. Use	it to answer the	e question that followshop3	ws.

Item Name Tooth paste 100g Wheat flour 2 Kgs Cooking Oil 3 Ltrs	80 120 520	Shop2 85 119 518	Shop3 90 121 522	90 121 522
- 10	,	<u> </u>		
	<u> </u>			
	<u></u>			
				
	-			
- Edu	no	tes.c	o.k	e
Edu	no	tes.c	o.k	e
Edu	noi	tes.c	co.k	e
Edu	no	tes.c	co.k	e
Edu	no	tes.c	co.k	<u>e</u>
Edu	101	tes.c	co.k	e
Edu	101	tes.c	co.k	e
Edu	101	tes.c	co.k	
Edu	101	tes.c	co.k	e
Edu	101	tes.c	co.k	C
Edu	noi	tes.c	co.k	

```
2.
                   Outline one advantage and one disadvantages of using bubble sort algorithm to
      (a)
            (i)
                   sort elements in a program.
                                                                               (2 marks)
            (ii)
                   State four examples of white space as used in C programming.
                                                                            (2 marks)
      (b)
                   Explain one importance of external documentation as applied in programming.
                                                                              (2 marks)
                  With the aid of an example, explain the purpose of a comment in a C program.
            (ii)
                                                                              (3 marks)
            The following is a C program. Use it to answer the question that follows.
     (c)
               #include <stdio.h>
                main(){
                   int n, c;
               printf("Enter a number\n");
                   scanf("%d", &n);
               if (n == 2)
                       printf("Number.\n");
                   else
                   {
                        for (c = 2 ; c \le n - 1 ; c++)
                             if (n % c == 0)
                                 break;
                        if (c!= n)
                            printf("Not correct.\n");
                        else
                            printf("Number.\n");
                   return 0;
               }
```

	(4 marks
(d)	Write a Pascal program that accepts heights of 10 students and stores them in an array,
	the program should then prompt the user to enter a height and then search through the array of entered heights to check whether the height entered is found. If the height is found then the program displays "found" otherwise "not found". (7 marks
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(a)	(i) 	Define the term modular programming.	(2 marks)
	(ii)	Outline two methods of passing parameters to a subprogram.	(2 marks)
_			
(b)	(i)	Describe the general syntax of a case control structure as used in programming.	Pascal (2 marks)
	(ii)	Explain a circumstance under which an endless loop may occur in	a program. (2 marks)
(c)		en that a=6, b=4, and c=10. Compute the output from each of the followers.	owing C
	(i) 	(a>6)&&((a*c) <b)< td=""><td>(2 marks)</td></b)<>	(2 marks)
_	(ii)	(a<=b) (a*c)>(a*b)	(3 marks)

	(iii)	(a*b)/2+(c/2*b)	(1 marks)
(d)	Ann, of all prog	a computer student, intends to write a program the the even numbers from 20 to 50. Draw a flowcharam.	at computes the total and average art to represent the logic of the (6 marks)
			(0 1111111)
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(a)	Outli	ne two disadvantages of monolithic programming.	(2 marks)
(b)	(i)	Describe two features of third generation programming languages.	(4 marks)
	(ii)	Differentiate between a text file and a record as used in programming	. (4 marks)
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(c)	(i)	Differentiate between for loop and switch control structures.	(4 marks
_			

(ii) Under what circumstance would a continue command be used in	(2 marks)
With the aid of an example, describe divide and conquer algorithms as u structures.	sed in data (4 marks
	(2 4
Define the term structure as used in C programming.	(2 marks
Explain the function of each of the following flowchart symbols:	
(i)	(2 marks
	With the aid of an example, describe divide and conquer algorithms as u structures. Define the term structure as used in C programming. Laure

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	(ii)							(2 marks)
(c)	(i)	Char	rlee a c	ompute	r student	intends to write	a computer pro	gram that would be
(0)	(1)	used 1	to gene	erate the	following	g output.	a compact pro	gram mar would be
		1 1	2 2 2	3	4			
		Rep	resent th			gram using a fl	owchart.	(5 marks)
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	(ii)	The following is a C program segment. Use it to answer the question that	
		follows. int main<>	
		f main	
		int number;	
		char symbol;	
		for (i=1; i=10; i)	
		{	
		<pre>scanf("intial");</pre>	
		<pre>printf(symbol);</pre>	
		<pre>printf(/n);</pre>	
		}	
		}	
		Identify six errors in the program. (3 mark	re)
		identity six errors in the program.	
			_
			_
			_
(d)	capita	e a C program that accepts ten characters using a loop, determines the number of all letters and small letters. The program should then output the number of capitals and the number of small letters entered. (6 markets)	
		Edditotes.co.Re	_
			_
			_
			_
			_
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		(2 marks)
(b) (i)	Explain the way of each of the fall of the	
(b) (i)	Explain the use of each of the following debugging technique in C programming:	es as used
	I. tracing;	(2 marks)
	II. stepping.	(2 marks)
(ii)	Ann would like to write a program that reads records from a tyour answer, outline two appropriate control structures that s	
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then		he program should in the alphabet.
then	te a Pascal program that accepts a character from the keyboard. To determine whether the character appears before or after letter K	he program should in the alphabet.
then	te a Pascal program that accepts a character from the keyboard. To determine whether the character appears before or after letter K	he program should in the alphabet.
then	te a Pascal program that accepts a character from the keyboard. To determine whether the character appears before or after letter K	he program should in the alphabet.
then	te a Pascal program that accepts a character from the keyboard. To determine whether the character appears before or after letter K	he program should in the alphabet.

(d)	Write a C program that prompts a user to enter the number of elements in a list sorted and then the elements themselves. The program should then bubble sort elements in ascending order and output the sorted list.	to be the (6 marks)
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_	NAME OF TAXABLE PARTY.	
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(a) 	(i)	State the function of the stdio.h command as used in C programs.	(2 marks)
	(ii)	State the circumstance under which an extreme test data would be uprogramming.	sed in (2 marks)
(b)	Expla	ain two reasons that necessitate the use of functions in a program.	(4 marks)
(c)	(i)	State two benefits of using structure charts when designing a programmed to the structure charts when designing the structure charts when the structure charts when the structure charts when the structure charts when the struct	am.(2 marks)
	(ii)	Amanda, a computer student, chose to use the <i>switch</i> statement instatement while developing a program. Justifying your answer, expethat prompted the student to make that choice.	tead of if blain a reason (2 marks)
_			

(d)	Write a C program that uses three functions named circle, cube and sphere to calculate the area of a circle, volume of a cube and volume of a sphere respectively. The program prompts the user to select one of the functions and prompts the user to enter the dimensions for the		
	sphere = $4/3 * \pi r^3$	(8 marks)	
_			
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(a)	(i)	Outline the function of each of the following Pascal programming declarations:		
		I. type;	(1 mark)	
		II. label.	(1 mark)	
	(ii)	Explain one effect of a logical error in a program.	(2 marks)	
(b)	Diffe	erentiate between a pointer and a linked list as used in data structures.	(4 marks)	
(c)	Disti	nguish between an array and a queue as used in data structures.	(4 marks)	
(d)	1. Ti	e a Pascal program that accepts a number less than or equal to 10 but go ne program should then compute and output the factorial of the number of a procedure.	reater than through the (8 marks)	