Royal College - Colombo 07
රාජකීය විද්‍යාලය - කොළඹ 07

Grade 11 –Second Term Test – January 2022
දෙවන වාර පරීක්ෂණය - 2022 ජනවාරි - 11 ශ්‍රේණිය

	Time -1 hour
	කාලය – පැය 1

Information & Communication Technology I

80	E	I

Additional Reading Time – 10 minutes

Name : …………………………………….…………Grade : …………………   Index …………..

Note:
* *Answer **all** questions.*
* *In each of the question 1 to 40, pick one of the alternatives (1), (2), (3), (4) which is **correct** or **most appropriate**.*
* *Mark a cross (×) on the number corresponding to your choice in the answer sheet provided.*
* *Further instructions are given on the back of the answer sheet. Follow them carefully.*

1. Consider the following table

Name	Subject Marks			Total Marks	Average Marks
	Science	English	ICT		
Shri	75	78	90	243	81
Krish	67	90	95	252	84

   Which of the following is represent above table Data and Information respectively?
   (1) Total Marks and Average Marks   (2) Total Marks and Name

   (3) Name and Average Marks   (4) Science and ICT

2. Which of the following is not a system?
   (1) ATM card   (2) QR Code used to find information

   (3) Processing business information   (4) Automatic Teller Machine

3. Gross domestic product (GDP) refers to the market value of all final goods and services produced in a country in a given period. But GDP is calculated by the market value of some final goods and services is not sufficient as an indicator of a country's standard of living. Which of the following characteristic of quality of information is not satisfied in the above calculation of GDP?
   (1) Relevancy   (2) Completeness

   (3) Timeliness   (4) Cost Effectiveness

4. Telemedicine is made possible by remotely connecting the patient with hospital's specialist unit. The process of providing emergency care by a trained person in consultation with a specialist in a hospital via telecommunication network, when a patient cannot reach a hospital is called
   (1) Home health medicine   (2) Telemedicine Consultation
   (3) Medical Tele training   (4) Emergency Telemedicine

5. Which of the following is not a use of robotic technology?
    (1) Increase the cost of production   (2) 24 hours service
    (3) Efficiency   (4) Hygiene

6. Which of the following system is invented as second generation computer and major hardware technology as transistor?
    (1) ENIAC   (2) EDSAC   (3) IBM7030   (4) IBM701

7. Major hardware technology of fourth generation computer is
    (1) LSIC   (2) IC   (3) ULSI   (4) Transistor

8. A computer is used to perform many tasks simultaneously. This special feature is called
    (1) Efficiency   (2) Speed   (3) Versatility   (4) Accuracy

9. The computer, which have higher computing power is used for scientific and engineering functions to solve complex mathematical problems. These computers are used in institutes like NAZA, large scale businesses and for military purposes. Which of the following classification is belong to this type of computer?
    (1) Mini Computer   (2) Micro Computer
    (3) Mainframe Computer   (4) Super Computer

10. When we input Data and instructions using an input device, it is first going to the
    (1) Primary Memory   (2) CPU
    (3) Secondary storage   (4) Output Device

11. Which of the following device is commonly used in libraries and in government institutes to capture text in a document and to edit that captured text in the document?
    (1) OMR   (2) OCR   (3) MICR   (4) ATM

12. Which of the following type of a printer is applied dried ink on the paper to produce the printout?
    (1) Laser   (2) Dot matrix   (3) Bubble   (4) Ink Jet

13. Hard Disk is made of several components. Which of the following component is transmits data to the platter?
    (1) Head   (2) Spindle
    (3) Actuator   (4) IDE Connector

14. What is the difference between USB flash drive and memory card?
    (1) The ability to read data   (2) The ability to write data
    (3) Portability   (4) The method of connecting

15. Consider the following Ports
    A – PS/ 2 Port   B – Parallel Port   C – HDMI Port   D – RJ 45 Port
    E – USB Port   F – Graphic Port
    Which of the above ports are used to connect monitor or multimedia projector to the computer?
    (1) A and E   (2) B and D   (3) C and F   (4) E and F

16. Arrange the following four numbers presented by different number systems in ascending order.

    A - 11011111_2

    B - 254_{10}

    C - FF_{16}

    D - 345_8

    (1) BACD   (2) ADBC   (3) ABCD   (4) ABDC

17. What is the MSD and LSD of 0111111010_2 respectively?

    (1) 0,0   (2) 0,1   (3) 1,0   (4) 1,1

18. The maximum capacity of a file that can be stored on a flash drive is 2GB. Which of the following is represent the same capacity?

    (1) 1024 MB   (2) 2000 MB   (3) 2^{10} MB   (4) 2048 MB

19. Consider the following comparisons

    A - $100_8 > 3E_{16}$

    B - $101_8 = 65$

    C - $3F_{16} <> 0011\ 1111_2$

    Which of the above statement/s is / are true?

    (1) A only   (2) A and B   (3) B and C   (4) All A, B, C

20. Which of the following included for the BCD coding system?

    (1) 1101 0101 1000   (2) 1000 0011 1111

    (3) 0100 1101 0110   (4) 1001 1001 0011

21. Consider the following Pascal program code.

```
Program  olexam_2022;
Var a,b : integer;
Begin
a := 1 ;
b := 1 ;
Repeat
a := a + 1 ;
b := b + 1 ;
write (a,b) ;
Until a>3 ;
End.
```

    What is the output of the above program?

    (1) 11223344   (2) 223344   (3) 11,22,33,44   (4) 112233

22. Consider the following pseudo code segment. What is the value of A after this loop execute?

```
A=5
for B:= 1 to 5 do
A: = A+ B
Next A
```

    (1) 11   (2) 36   (3) 20   (4) 10

23. What is the result after execution of the following expression?

    ```
    7^2+(4*2-1)-4
    ```

    (1) 34   (2) 12   (3) 62   (4) 52

24. What is the expected output of the following pseudo code segment?

    ```
    A=1
    B=0
    While A<=4
    B=A*A
    A=A+1
    Display B
    End while
    ```

    (1) 1 4 9 16   (2) 16   (3)1 2 3 4   (4) 0

25. Which is not a valid data type in Pascal?
    (1) Text   (2) Integer   (3) Real   (4) String

26. Which of the following statement/s is / are true?
    A - Information is obtained by processing data in a systematic way
    B - Since the data is manually processed, there is more room for error
    C - Data is more important than information in decision making
    (1) A only   (2) A and B   (3) B only   (4) All A, B, C

27. Computer system interface configuration at what stage of the system development life cycle?
    (1) System Analysis   (2) System Design
    (3) System Deployment   (4) Coding

28. A process that takes place at the Maintenance phase,
    (1) The complete system is tested for its outputs for the given inputs.
    (2) Adopting new, technology into the new system to improve efficiency
    (3) Identification of main hardware systems and its components
    (4) The existing system is totally terminated and the new system is installed

29. The Category that includes only computer languages is,
    (1) Visual Basic, C, Microsoft Excel   (2) C++, MS DOS,PHP
    (3) Java, Visual Basic, Windows   (4) Java, C++, PHP

30. Identify the three successive phases of the System Development Life Cycle (SDLC) that appear in the correct order
    (1) Design, Deployment, testing   (2) Testing, Design, Deployment
    (3) Design, Maintenance, Testing   (4) Coding, Testing, Design

31. Consider the excel sheet given below.

	A	B	C	D	E
1	10	40	44	85	
2	50	95	56	65	
3	42	87	68	66	
4	65	74	49	68	
5	53	71	80	70	
6	88	54	84	64	
7					
8					
9		Total	1528		

Which of the statement/s is/are correct, to get the total marks?
  A. =sum(A1:D6) can be inserted to the cell C9
  B. =sum(A1:D1,A2:D6) can be inserted to the cell C9
  C. =sum(A1+B1,C2:D2,A2:D6) can be inserted to the cell C9

  (1) A only   (2) A and B only   (3) A and C only   (4) All A,B and C only

32. Which of the following statement is false about MS Excel spreadsheets?
  (1) When hide the columns of the spreadsheet those columns will not display in the visible area of the spreadsheet.
  (2) Text wrapping make all content visible within a cell by displaying it on multiple   lines.
  (3) Filtering option will arrange the cells with numbers according to the ascending or descending order.
  (4) Excel allows to span multiple columns and rows

33. A formula is needed to be written in cell B2 and copy it to the other cells to find the multiples of 8 as in the excel sheet given below.

	A	B	C	D	E	F	G	H	I	J	K
1	X	1	2	3	4	5	6	7	8	9	10
2	8	8	16	24	32	40	48	56	64	72	80

What is the formula that is needed to be insert in cell B2?
 (1) =A2*B1   (2)=$A2*$B1   (3) =A2*B1   (4) =$A2*B1

[see page5

34. A survey was conducted to find the preference of online learning to traditional learning. Students of grade 10 participated for that and number of students who like each learning method are given in the table below. Finally, results were analyzed and represented graphically with percentages.

	A	B
1	Learningmethod	No of students
2	Onine learning	222
3	Traditional learning	452

What is the most suitable chart type to display the above results?
(1) Pie chart (2) Line chart (3) Scatter chart (4) Bar chart

35. Which of the following is a Boolean expression for the circuit?
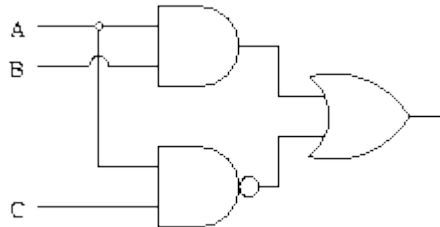
(1) $(A.B).(\overline{A+C})$ (2) $(A.C).(\overline{A+B})$ (3) $(A.B)+(\overline{A.C})$ (4) $(\overline{A+C}).(\overline{A.B})$

36. Which of the following is an output for y in the given flowchart?
(1) 10, 8, 6, 4, 2, 0 (2) 12, 18, 22, 24
(3) 12, 18, 22, 24, 24 (4) 14, 20, 14, 26, 26, 24 36.
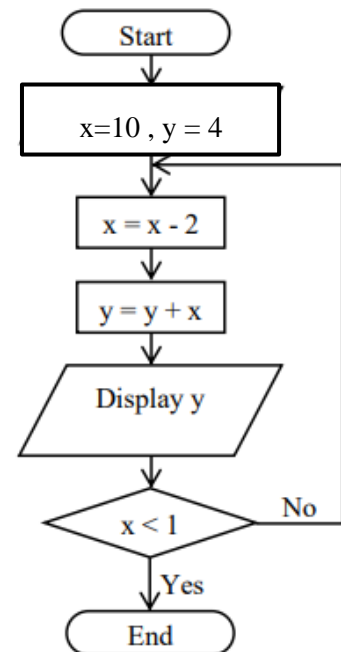
37. What is the most appropriate iteration structure that can be used to convert this flowchart into pseudo code?

(1) While do loop (2) Repeat until loop
(3) For do loop (4) If then else loop

[see page6

38. What is the output after executing the following array?

```
program FindHouse;
var str:array[0..3] of string;
i:integer;
begin str [0]:='Harward';
str [3]:='Boake';
str [1]:='Marsh';
str [2]:='Hartly';
for i:= 1 to 3 do
   begin
       writeln (str [i]);
     end;
end.
```
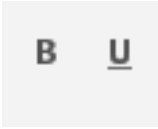
(1) Marsh   (2) Harward   (3) Marsh, Hartly, Boake   (4) Harward, Boake, Marsh
     Hartly   Marsh
     Boake   Hartly
               Boake

39. What are the formatting tools used to format the following sentence A, into the sentence B?
A – computer hardware includes the physical parts of the computer.
B – *computer hardware includes the physical parts of the computer.*

(1) **B** <u>U</u>   (2) <u>U</u> *I*   (3) **B** ~~abc~~   (4) ~~abc~~ *I*

40. Which of the following is included only the Word Processing software?
(1) Microsoft Office Word, Open Office Writer, VisiCalc
(2) Open Office Writer, Libre Office Writer, Google Sheet
(3) iWork Pages, Open Office Writer, Office 365 Word
(4) Kingsoft Office Writer, Open Office Writer, Libre Office Calc

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Time -2 hours
කාලය – පැය 2

Information & Communication Technology II

| 80 | E | II |

* *Answer **five (05)** questions only, including the **first question** and **four** others.*
* *First question carries **20** marks and each of the other questions carries **10** marks.*

(1). (i) A system consists of three basic components. Write down the three basic components of a system.

(ii) In the system development life cycle to resolve errors there are several methods to test a system. Write down all the testing methods.

(iii) There are several models are used in system development life cycle. Write down the difference between the water fall model and Iterative incremental model.

(iv) The internet is controlled by protocols. Write down the four protocols used in the internet.

(v) Cloud computing is facilitated to retrieving and storing information from anywhere at any time. List three main services of cloud computing.

(vi) Drawing or images are created with the use of digital graphics. Write down the fundamental of digital graphics.

(vii) The memory of a computer contains data and instructions in binary. The following instruction is stored in a location of the memory.

| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

(a) Convert the instruction into hexadecimal.

(b) Give one use of hexadecimal notation in computer science

(viii) (a) Write down the Boolean expression for the logic circuit given below
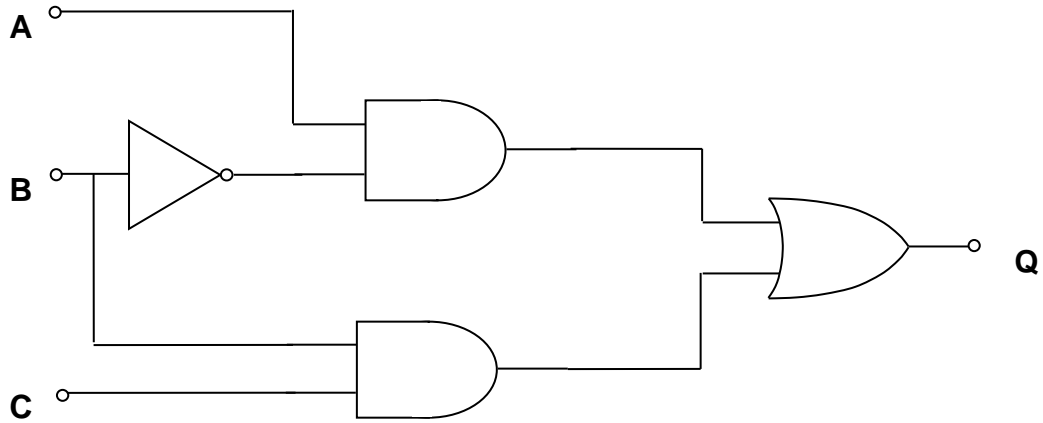
(b) Prove that the following Boolean expressions are equal by using truth table.

$$A.\overline{B}+B = A+B$$

(ix) The following are the slide layout / office themes. Identify the office theme and select the correct answer from the list.

(Title slide / Title and content./ Two content / Comparison /Content with caption)
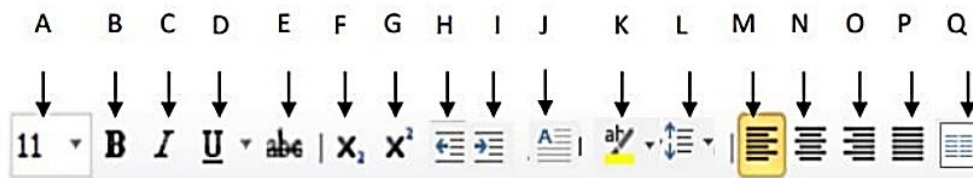

    (A)   (B)   (C)   (D)

(x)   Following table shows a formatted text in Word Processing Software. Use the given set of tools and write the relevant letter of the tool for each formatting.

(2). The following chart shows quadratic function of $y = x^2 + 2x - 5$ in a spread sheet
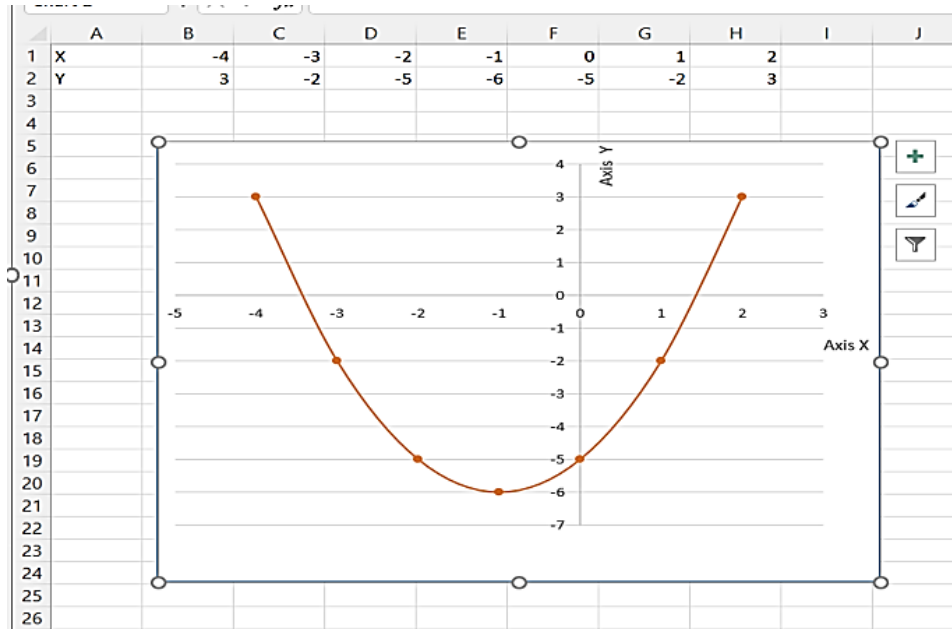
(i) Write down the most suitable chart type available in spread sheet software to draw the above graph. (Pie, line, scatter, Area)

(ii) Write down the formula that should be entered into cell B2 to get the value of Y?

(iii) Write the formula that appear in cell **F2?**

(iv) After Marking the data range of **A1:H2**,   write down the steps to draw the chart shows above.

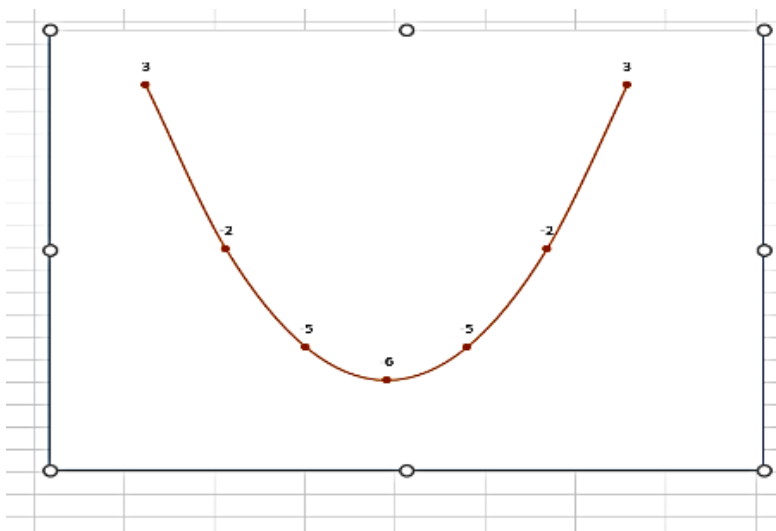(v) Which **chart elements** type you select to display the value of each point in the graph as shown?

(3). (a) The Grade 11 ICT students to design a learning management system. Therefore, the students have commenced designing the learning management system.

    (i)   Write two information gathering techniques are using the system analysis phase.

    (ii)   Give three different types of testing that should be used during the testing stage

    (iii)   The system was first set up for Grades 6 to 9 and then extended to other grades. What kind of deployment type used for it?

    (iv)   Write suitable development model for above system.

    (b)   Select from the list given below and write down, the most appropriate term/phrase for each of blanks labeled (a) to (f) in the following sentences. (You are required to write only the label number and the corresponding term/Phrase.

    (i)   In the ……………………., the application is made available to users

    (ii)   …………………… should ensure that each function works correctly.

    (iv)   ……………… is the actual writing of the program.

    (iv)   A …………………. is like one of the early versions of software in the Iterative software.

    (v)   …………………. also include defining the resources needed to build the project.

    (vi)   A .... is a collection of components that interact to achieve a specific task

    [***Testing, Prototype, system, maintenance, design, coding, requirements phase, deployment, Information system.***]
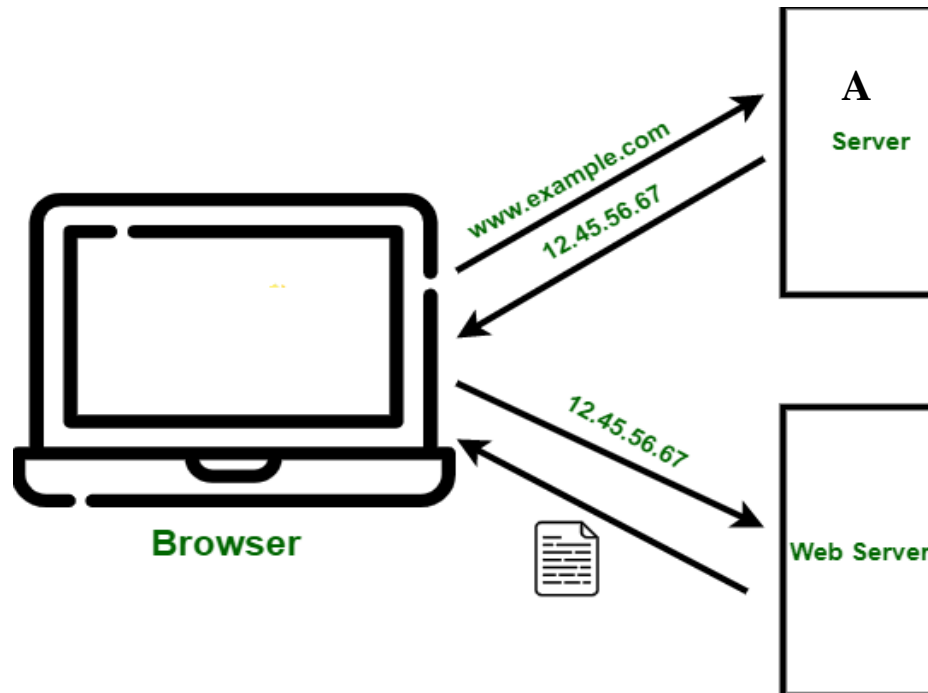
(4).(a) Consider the following Uniform Resource Locator

<p align="center" style="font-size:2em">http://www.edupub.gov.lk/e-Books/english/ict.pdf</p>

<p align="center">A   B   C   D   E</p>

    (i) The parts of a uniform resource locator are labeled as A, B, C, D and E. Identify the relevant parts and write down the parts against each relevant label.

    (ii) What is the main function of labels A, B and C

(b) The following figure shows how the internet work.

(i)   The IP address notation shown in the figure is separated by a decimal point. Therefore, this notation is called using a special name. Write down the name of the notation.

(ii)   State that the two main services providing by the ISP and they charge a fee for the service.

(iii) The above figure is shows when a URL is entered to the browser to view a website, the request translated to readable written address into an IP address by a server. Write down the full name of the label **A** to translate the correct IP address.

(iv) We rarely see the numbers as URL on the internet to view a website. What is the main reason   behind this?

(c) An user can save time, when collecting information from the internet and store those information in the computrer using shortcut key. Write down the shortcut keys for the following functions.

  (i) Name the document and to save
  (ii) Get a new document
  (iii) Select the document
  (iv) Replace words
  (v) copy letters
  (vi) Paste letters

(5). Assume that the following database tables are used to calculate the salary of an employee in ABC Company.

Employee_Data Table

Name	Emp_No	Type
K.S. Perera	E001	F
J.L. Dharmasiri	E002	P
S.J. Withana	E003	F
A.L. Hakam	E004	P

Hourly Rate

Type	Rate
F	150/-
P	100/-

Worked_Hours table

Month	Emp_No	Hours
March	E001	120
April	E002	80
May	E003	130
June	E004	100

   i.   What is the most suitable table to add the field *Employee_phone_number*?
   ii.   Which table/s should be updated if a new full time employee joined in month of July named S.K. Lakanath (Emp_No E005)?
   iii.   Write down the updated rows and their respective table names for the updates given (ii) above. (Assume he worked 90 hours in the month of July)
   iv.   Assume hourly rate table has updated for the type F – 175/- and for the type P – 120/-. What are the other relevant tables which need to be updated according to that update?
   v.   What tables should be joined to run a query to find out the total salary for J.L Darmasiri for April?

(6). (a)(i) Consider the following web page about gardening and select the correct tags or parameters from the following list for label numbered 1 -8 in the HTML source code given below and write them down against each number.

List: (li, br, ul, center, align, title, sub, ol, u, h2, color, face, strong, sup)

```
<html>
        <head>
                <❶> Gardening </❶>
        </head>
        <body>
                <❷><❸> <u> Home Gardening </u> </❸> </❷ >
                <img src = "Flower Garden.JPG" border = "2">

                <p ❹ = "justify"> Home Gardening, in simple terms, can be called as the process of
                growing   plants and taking care of them in your own home for various purposes.
                Whether you're learning the ropes or you're looking for different gardening styles
                to be able to grow more food, you must know what your options are it is considered
                as a <❺> gratifying hobby </❺>, as it reaps benefits both in the form of mental
                relaxation and provides you with homegrown organic fruits and vegetables. </p>
                                <❻ type = "A">
                                                <❼ > <li> Types of gardening </li> </❼ >
                                <❾ >
                                        <li> Butterfly Gardening </li>
                                        <li> Container Gardening </li>
                                        <li> Organic Gardening </li>
                                        <li> H<❽ >2</❽>O Gardening </li>
                                </❾ >
                                                <❼> <li> Gardening Tools </li> </❼ >
                                <❾ >
                                        <li> Trowel </li>
                                        <li> Spade </li>
                                        <li> Fork </li>
                                </❾ >
                                </❻ >

                                <font ❿ = "Arial" size = "2"> <a href = "Next Page.html"> Next </a>
        </font>
                </body>
        </html>
```

(b) Each of the following statements has a blank space. Identify the most suitable term(s) to fill in the blank space from the three options given within brackets at the statement.

(i) Every website you've ever visited is hosted on a …………. (Computer, Server, super computer)

(ii) A ………………… is an Internet resource name that is universally understood by Web servers and online organizations and provides all pertinent destination information (IP address, Web Server, Domain Name)

(iii) Proper security methods should be followed in order to protect the website from ………………. (Malfunction, multifunction, multiprocessing)

(iv) …………………………. is built on a client–server model architecture using separate control and data connections between the client and the server. (FTP ,TCP/IP,   HTTP)

(v) Dynamic web sites can be created by using ……………….………… (Content Management System, HTML, CSS)

(7). The following Pascal program uses to enter five students' subject marks and calculate the total and display it.

```
program ary_2021;
var marks: array [0..4] of integer;
    i,tot: integer;
begin
tot:=0;
for i := 4 downto 0 do
begin
writeln('Enter marks');
readln(marks[i]);
tot:=tot+marks[i];
end;
writeln('total is   ',tot);
readln();
end.
```

(a) Answer the following questions according to the above Pascal program.

  (i) How many elements contains of the array?
 (ii) What is the data type of the array?
(iii) What is the name of the array?
 (iv) Show how the array will display when entering marks 60,90,82,45 and 92 respectively

[0]	[1]	[2]	[3]	[4]

(vi)   What is the output of the above program.

(b) Consider the following pseudo code.

```
Begin
For x = 0 to 9 step 1
Marks[x]=x*x
Next x
```

Enter data to the following marks array according to the above pseudo code?