Royal College - Colombo 07
රාජකීය විද්‍යාලය- කොළඹ 07

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Grade 11–First TermTest – June – 2021
පළමු වාර පරීක්ෂණය 2021 -ජූනි 11 -ශ්‍රේණිය

කාලය :පැය 2
Time : Two hours

Information and Communication Technology
තොරතුරු හා සන්නිවේදන තාක්ෂණය

Name :- ....Grade : -................ Index number:-...................

❊ *Answer five questions only, selecting the **first question** and **four others**.*
❊ *1ˢᵗ question carries **20** marks and each of other questions carries10 marks.*

(1)

i) Write two advantages of online education.

ii) Write two examples for High level programming languages.

iii) Binary codes are used to store numeric,alphabetic,special character ,images and sounds in storage devices of computers. Write **two** coding systems that can represent letters numbers and symbols.

iv) Construct the logic circuit diagram for the following Boolean expression.

$$Q=(A.B.C)'+ (A.B) + B'$$

v) Match column a with column B and write matching letters with the correct number.

Column A	Column B
1.Expansion slots	**A**. Clock speed
2.Giga Hertz	**B**.CD,DVD and Blue ray disk
3.Laser light	**C**. Mother board
4.Rj45	**D**. Network interface card

vi) The Router is considered as one of the main device needed to connect to the internet. Write down two main functions of the router.

vii) What are the values of 64 MOD 5 DIV 2 and 64 DIV 5MOD 2 respectively.

viii) Draw the relevant flow chart segment to present the following pseudo code.

T=0

For X=0 to 4 step 1

T=T+X

Next X

ix) Primary key is a key field used to uniquely identify each record in database table. Write two features of primary key?

x) State True or False of following statements given as P.Q.R and S .Write only the letters and state whether it is True or False. .

    P. Weather report, Science marks and road map are example for Information.

    Q. Timeliness, cost effectiveness and accuracy are considered as features of quality information.

    R.' Brown sugar', 'red rice' and 'beautiful flower' are examples of qualitative data.

    S. Barcode printer is an example of output device.

(2) The following spreadsheet is created to calculate the total sales, average and maximum sales of the every month within the 2021 1 st quarter of the ABC company. The profit is calculated by reducing the production cost from the total sales. 10% from the profit was allocated for the bonus.

	A	B	C	D	E	F	G
1	Sales and profit report -2021 ABC company Ltd						
2	CityNO	City	January(Rs)	February(Rs)	March(Rs)	Average(Rs)	Maximum sales(Rs)
3	01	Colombo	35000	46000	56800	45933.33	56800
4	02	Kandy	57000	39000	55670	50556.67	57000
5	03	Nugedoda	27000	56400	90000	57800.00	90000
6	04	Panadura	59000	45600	39000	47866.67	59000
7	Total sales		178000	187000	241470		
8	Cost		156000	154000	189700		
9	profit		22000	33000	51770		
10	10% bonus		2200	3300	5177		

    i.   Write down the formula using relevant function   that should be written in cell F3 to find the Average of Colombo.

    ii.   Write down the formula using relevant function   that should be written in cell G3 to find the maximum sales of Colombo.

    iii.   Write down the formula without using   function   that should be written in cell C7 to find the total sales of January.

    iv.   Write down the formula that should be written in cell C9 to find the profit of January.

    v.   Write down the formula that should be written in cell C10 to find the bonus of January.

(3) Amal enterprise sales a number of food items supplied by many suppliers. The company maintains a database with two tables to store vegetable items and suppliers details in a day. One supplier can supply many vegetables item but one vegetable item can supply only supplier.

Item table

ItemID	ItemName	Quantity	Unit price	SuppID
VG001	Carrot	170	120	Sp457
VG002	Beans	100	145	Sp456
VG003	Beetroot	85	180	Sp459
VG004	Cabbage	200	80	Sp457
VG005	Potato	500	170	Sp456
VG006	Red Onion	120	350	Sp456

Supplier Table

Phone	Suppliername	SuppID
0112850286	S.D.David	Sp456
0414556789	R.K.Deepal	Sp457
0915677895	G.H.Rasika	Sp458
0555674566	R.M.Ranjith	Sp459

i)   List two primary keys with corresponding table names.

ii)   Write foreign key and their table name of the above database.

iii)   The company decided to add tomato as new vegetable and purchased 100kg of them from the new supplier A.D.Mangala (suppid:Sp460)

   a. What table needs Updating?

   b.Write down the relevant updated record.

iv)   What is the relationship between Item table and supplier table of above database.

v)   What are the relevant data types for the field 'phone'?

(4)

a) Interconnected two or more computers and other devices is considered as a computer network and the largest computer network is known as Internet. The following picture shows how the Nods are connected to internet.
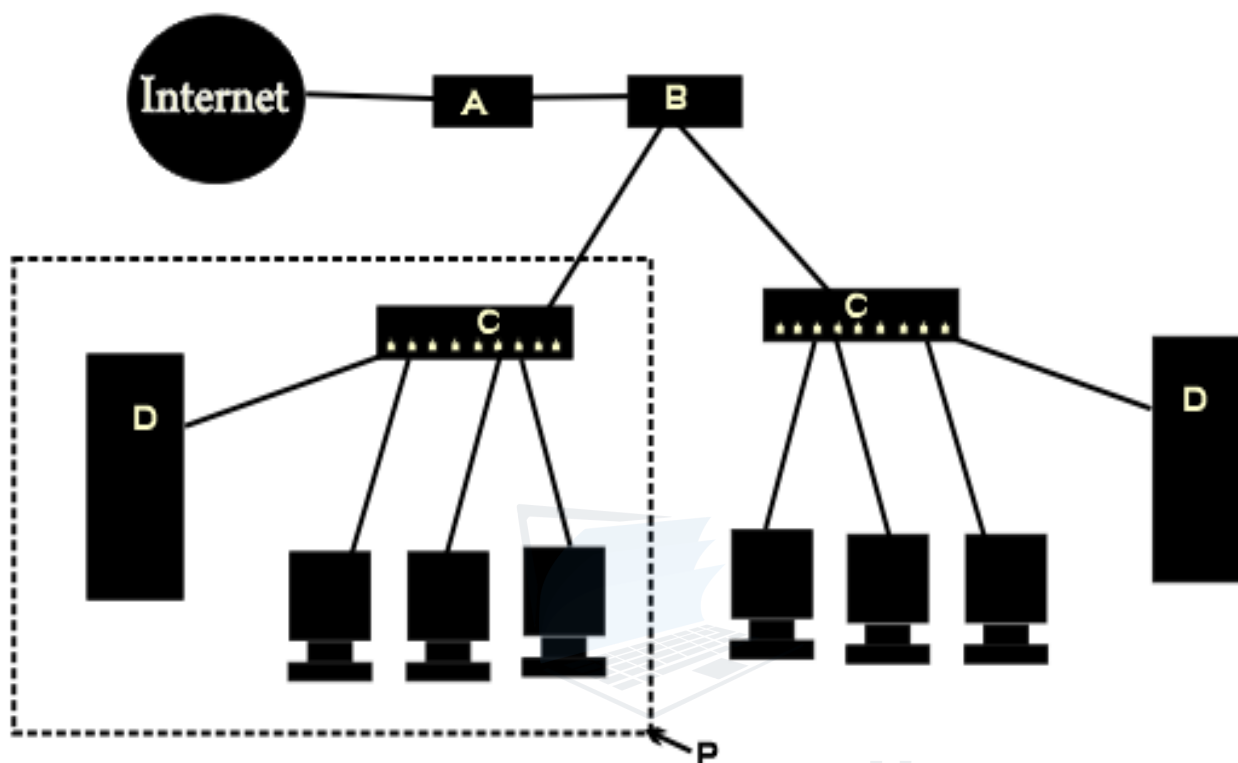

i)   Name the devices labeled as A,B,C and D.

ii)   Write two functions of the device labeled A.

iii)   Name the network topology labeled as P.

iv)   Name another network topology that is not mentioned above and draw the diagram.

b) Central processing Unit is the main component of a computer system.

i)   What are the two main components consist of CPU?

ii)   Single core, Dual core and Quad core are Types of CPUs according to their technology.

        What is the main difference between Dual core CPU and Quad core CPU?

(5) The following flowchart is designed to find the maximum and the minimum values of a number series consider that zero (0) is not included in the series.
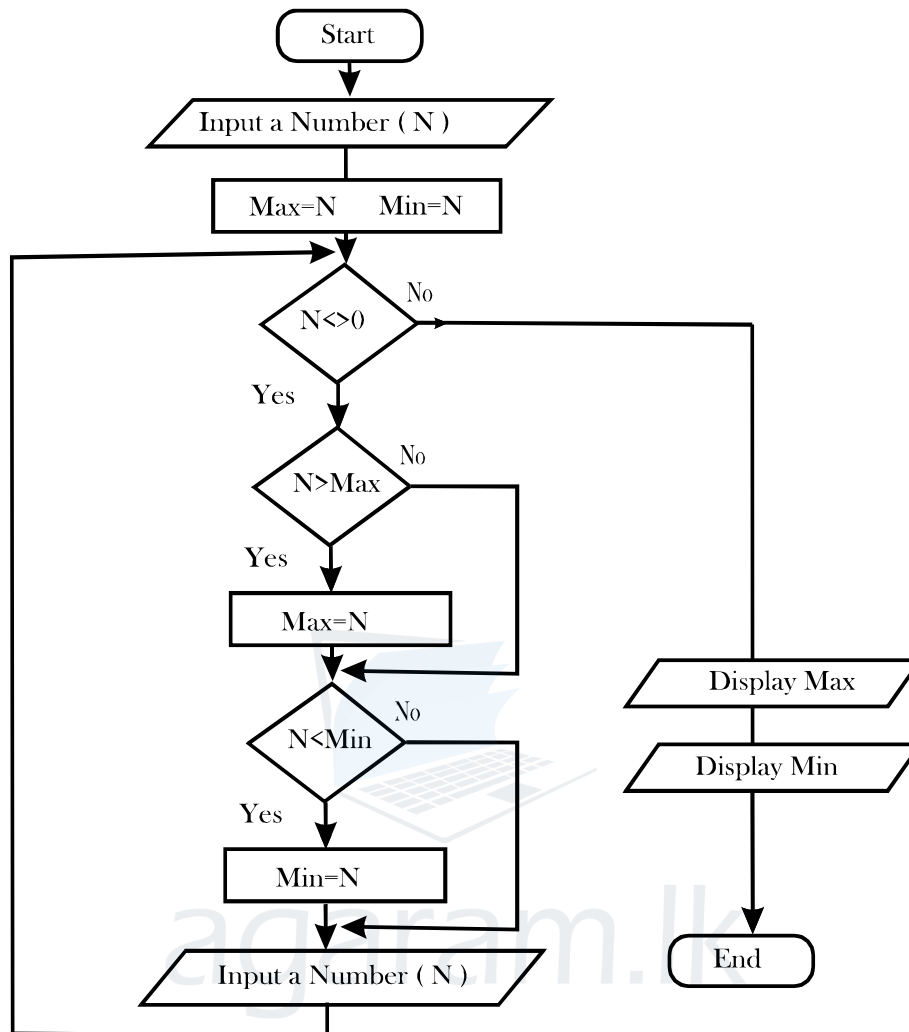
i) Write pseudo code for the above flow chart.

ii) What are outputs of the above flowchart if you try to enter **3,7,9,4,10,0,16,9** respectively to the above flow chart?

iii) Consider the following program segment in pascal.Write the expected output of it.

```
var num : array [0..4]  of string;

        x: integer;

begin

num[0]:='Colombo';

num[1]:='Rajagiriya';

num[2]:='Nugegoda';

num[3]:='Ragama';

num[4]:='Dehiwala';

for  x := 1 to 4 do
```

(6) a)

i) Copy the following table to your answer sheet and complete it.

Decimal number	MSD	LSD	BCD code
250			
45			
		3	1000100100010011

ii) Convert 245_8, 11101111_2, 120_{10} and 3_8 into hexadecimal number with steps of the conversion.

iii) Prove $(A.B.C)=(A.B).C$ Using a truth table.

iv) If RGB decimal value of Green colour is 0.255.0.Write the hexadecimal colour code of green colour?

b) We need a good quality presentation in order convey the message clearly to the audience.

i) Write two examples of presentation software.

ii) Title slide, title and content, section header, two content, and comparison are some examples of slide layouts of presentation software. Identify the following Layouts.
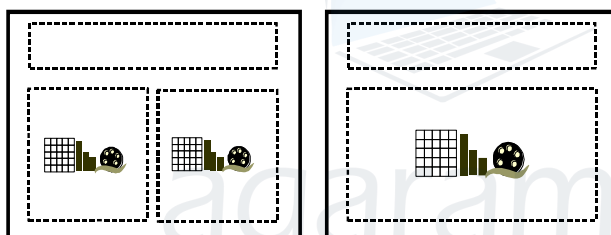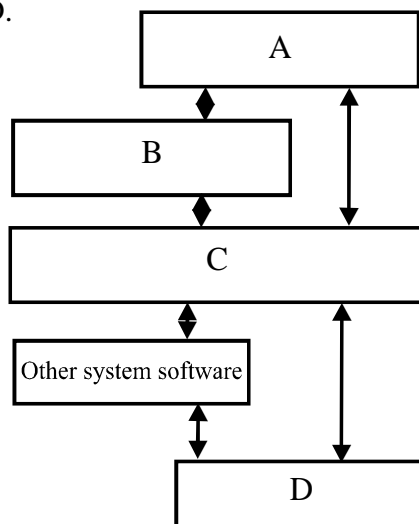

A   B

(7)

a) The software which facilitates the interaction between human user and hardware is the Operating system.

i) What are the main two services performed by Operating system.

ii) The following diagram represents the interaction between the Computer and the user. Name A ,B,C and D.

iii)   Write two examples of Graphical user interface operating systems.

iv)   Dividing an individual drive into multiple logical drives is call disk partitioning. Write two reasons for disk partitioning?

b)

i)   What are the facilities available in word processing packages for the following tasks.

     A. To send one letter to many recipients.

     B. Uniquely identify each page.

ii)   Identify A and B formatting used in the following table prepared using word processing software.

***
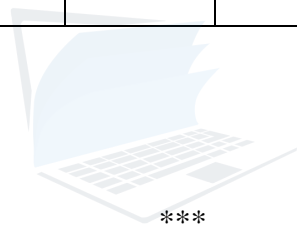
Royal College - Colombo 07
රාජකීය විද්‍යාලය- කොළඹ 07

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Grade 11–First TermTest – June – 2021
පළමු වාර පරීක්ෂණ -2021 ජුනි -11 ශ්‍රේණිය

කාලය :පැය 1
Time : One hour

Information and Communication Technology
තොරතුරු හා සන්නිවේදන තාක්ෂණය

Name :- ....Grade : -................   Index number:-...................

Answer all questions.

01. Select the machines which was invented by Charles Babbage and Blaise Pascal respectively?

    i. Analytical engine and mark I   ii. Analytical engine and Adding machine

    iii. ENIAC and UNIVAC   iv. Adding machine and EDVAC

02. What is the answer that includes special features of quality information?

    i. Accuracy, Timeliness, Cost effectiveness

    ii. Accuracy, Diligence, Efficiency

    iii. Speed, Versatility, Accuracy

    iv. Real time, Versatility, Completeness

03. Data and instructions are stored in a computer in ………………… Form. Which of the following is suitable to fill the above blank.

    i. Octal   ii. Binary   iii. Decimal   iv. Hexa Decimal

04. The hardware technology used in ENIAC is

    i. Transistor   ii. IC   iii. Vacuum Tube iv. VLSI

05. Out of the following computing devices which was the first to be invented?

    i. Napier's bore ii. Adding Machine iii. Abacus   iv. Slide Ruler

06. Select the statement which can be considered as information

    i. Body temperature   ii. Patient Name

    iii. Blood report   iv. Blood Pressure

07. ECG machine is an example of

    i.   Analog Computer   ii.   Digital Computer

    iii.   Hybrid Computer   iv.   Mini Computer

08. Laptop, Desktop and notebook computers are classified as

    i.   Mini Computer   ii.   Super Computer

    iii.   Analog Computer   iv.   Micro Computer

09. Given below is the memory hierarchy diagram according to access speed. Which of the following represents A, B & C respectively.
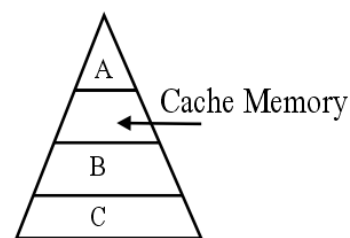
    i.   RAM, Register Memory, ROM   ii.   Register Memory, RAM, ROM

    iii.   ROM, Register Memory, RAM   iv.   ROM, RAM, Register memory

10. Which of the following contains only guided media.

    i.   Fiber Optic, Co-axial, Twisted pair   ii.   Microwave, Infrared, Radio wave

    iii.   Co-axial, Twisted pair, Infrared   iv.   Micro wave, Twisted pair, co-axial

11. In a particular network each computer is connected directly to a hub or switch. This topology is known as.

    i.   Bus topology   ii.   Ring topology

    iii.   Star topology   iv.   Tree topology

12. Which of the following is true.

    i.   Metropolitan area network covers a wide area

    ii.   The largest computer network is Internet.

    ii.   Wide area network covers small geographical area.

    iv.   Banking network in Sri Lanka is an example of Wide area network

13. Which of the following component can **not** be seen inside of the central processing unit of a computer.

    i.   ALU   ii.   Control Unit   iii.   RAM   iv.   Register Memory

14. Which of the following software program permanently stored into a hardware device.

    i.   Live ware   ii.   Malware   iii.   Spyware   iv. Firm ware

15. Which of the following statement about output device is correct.

    i.   Multimedia Projector is a hardcopy output device.

    ii.   CRT monitor consumes less electricity.

    iii.   LED screens are designed using light emitting diodes.

    iv.   Dot matrix printer is a fast printer which prints one row at time?

16.
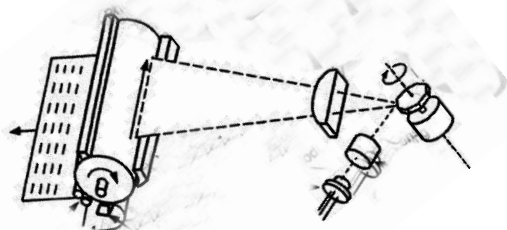
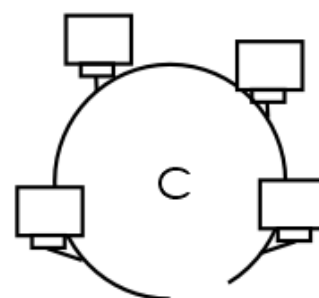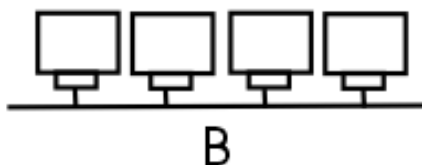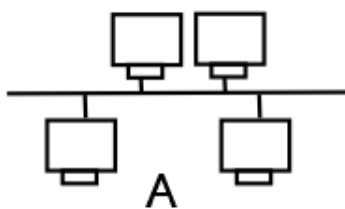The above diagram shows the technology of a printer. What can be the suitable printer   type?

    i.   Dot matrix   ii.   Laser   iii.   Inkjet   iv.   Bubble jet

17. Which of the following is false regarding a folder?

    i.   Ability to move to new location   ii.   Ability to delete

    iii.   Ability to hide   iv.   Ability to change the capacity

18. Which network diagram represents bus topology?

    i.A only   ii.   B & C   iii.   A and C   iv.   All A,B, and C

19. Consider the following three numbers in decimal, Octal and Binary respectively

    A -256_{10} B -64_8 C - 100000000_2

    Which of the above is / are equivalent to 100_{16}?

   i.   A and B   ii.   A and C   iii.   B only   iv.   All A, B, C

20. What is the decimal equivalent to the binary 1000010_2

     i.   65   ii. 66   iii. 125   iv. 92

21. Which one is the largest out of the following Binary coded decimal (BCD) representation?

     i. 10011001000   ii. 011110000001 iii. 100110011001   iv. 100110001001

22. A pen drive has a capacity of **8GB**. Which of the following represents the capacity of   pen drive in bits?

     i. 10^{36} bits   ii. 2^{36} bits   iii. 2^{30} bit   iv. 10^{30} bit

23. Which of the following are advantages of computer networking?

     A – Sharing of resources   B – Sharing of hardware devices

     C – Providing the user interface

     i.   A   ii. A, C   iii. A, B   iv. All A, B, C

24. Which of the following is / are true about open source software?

     A   -   Windows XP is an example for an open source software.

     B   -   Mint and Ubuntu are some examples for open source software

     C   -   No any owner for the open source software

     i.   A   ii. B   iii. A and C   iv. B and C

25. The which of the following is the output of the circuit?
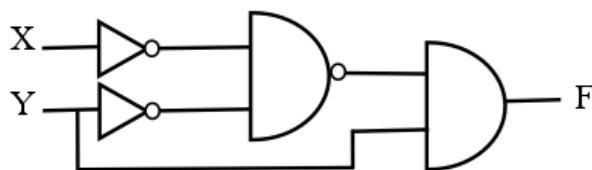
     i.   (x'. y')'. y   ii.   (x'. y')'+ y

     iii.   (x'+ y')'.y   iv.   (x . y)'.y'

26. BCD, ASCII, EBCDIC and UNICODE are example of coding systems. Which type of computer was used EBCDIC coding system?

     i.   Mini computer   ii.   Super Computer

     iii.   Micro Computer   iv.   Mainframe Computer

27. Which of the following contains the terms referred to the formatting labeled A, B and C respectively.

$$CO_2 + H_2O \gg \gg \gg C_6H_{12}O_6 + O_2$$

A   B   C
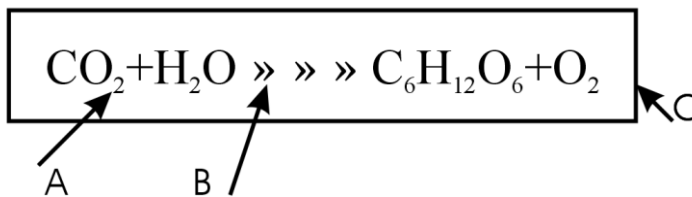
    i.   Super Script, Symbol, Text Box   ii.   Super Script, Word art, Text Box

   iii.   Subscript, Symbol, Text Box   iv.   Grow font, Strikethrough, Auto Shape

28. What are the names of the following word processing tools respectively?

    i.   Spelling & grammar, Word Count, Line space.

    ii.   Auto Correct, Find & Replace, Justify.

    ii.   Save, Change case, Copy.
    iii.   Spelling & Grammar, Word count, Line Space.

29. The purpose of using Keyboard shortcuts Ctrl + F and Ctrl + H for a selected text in a word processing documents is

    i.   Cut and Paste   ii.   Find and Hide

   iii.   Format ad Hide   iv.   Find and replace

Consider the following database table to answer questions 30 to the table shows data about items available for sale at a bookshop.

Item Name	Item_Id	Unit_Price	Quantity	Sup_Id
CR Book	0001	120	1000	5002
Marker pen	0002	100	500	5001
Pencil	0003	20	300	5002

30. How many records are there in the table.

    i.   05   ii.   03   iii.   15   iv.   04

31. Which of the following field can be used as the primary key?

    i.   Sup_ID   ii.   Item Name

   iii.   Unit_Price   iv.   Item_ID

32. Sup_Id in the above table is

    i.   Primary Key   ii.   Alternate Key

   iii.   Foreign Key   iv.   Candidate Key

33. What is the most suitable data type for Item_ID?

    i.   String   ii.   Real   iii.   Text   iv.   Memo

34. Consider the following statements about relation database.
A – one to one one to many and many to many are examples of relationships.
B –Fist column of a table is always used to build the relationship between two tables.
C –Foreign key is a primary key of another table
Which of the above statement are correct.

    i.   A   ii.   A and B   iii.   A, C   iv.   C only

35.consider the spreadsheet given below.

	A	B	C
1	6567	Q	1065
2	P	9045	248
3	4945		R
4			5
5			

What is the correct formula to be written in cell C4 to display the number of Values in the spread sheet.

    i.   = COUNTA (Al : B4)   ii.   = COUNTIF (A1 : A4)

    iii.   = COUNTA (Al : C3)   iv.   = COUNT (A1 : C3)

36. How many times will the following while loop execute?

    Number=5

    While Number>=5

    Number =Number-1

    End while

    i.   1   ii.   2   iii.   3   iv.   5

37. Consider the following assignments on a program segment which are executed in the given order?

    VALUE1:=500;

    VALUE2:=VALUE1 MOD 375

    VALUE1:=VALUE2;

Content of VALUE1 and VALUE2 after execution of the above three statements are respectively.

    i.   500,125   ii.   125,175

    iii.   125,125   iv.   500,500

38. Which of the following Pascal statement is having syntax error?

    i.   var student_name:=string;   ii.   total:=total+marks;

    iii.   For i:=0 to 9 do   iv.   Marks:=marks+10;

39. Which of the following are correct regarding machine language?

    i.   Machine independent   ii.   Easy to understand

    iii.   Use binary numbers and symbols   iv.   Slower than other languages

40. What will be the value output by display R of the given pseudo code?

```
Begin
P=4
Q=8
For R=P to Q step1
    Display R
Next R
End
```

    i.   4,8   ii.   4,5,6,7   iii.   4,5,6,7,8   iv. 5,6,7,8

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