

වජ්‍යාතිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව மேல் மாகாணக் கல்வித் திணைக்களம் Department of Education - Western Province	වර්ෂ අවසාන ඇගයීම ஆண்டிறுதி மதிப்பீடு - 2016 Year End Evaluation		
ශ්‍රේණිය } 10 தரம் } 10 Grade } 10	විෂය } Information and Communication மூலம் } Technology I, II Subject }	පත්‍රය } I வினாத்தாள் } I Paper }	කාලය } 03 Hours காலம் } 03 Hours Time }

Important :

- Answer all questions.
- In each of question 1 to 40, pick one of the alternatives 1), 2), 3), 4) which is correct or most appropriate and mark your response.

1. Which of the following contains the features of third generation?
  - 1) Transistor, Assembly language, Low electricity usage
  - 2) Vacuum tube, Machine language, High heat generation.
  - 3) Processor, Graphical Interface, Portability.
  - 4) Integrated circuits, Use of high level languages for coding, Low electricity consumption.
  
2. Which of the following does not explain the attributes of quality of information?
  - 1) It is an example of completeness of an information, when obtaining data covering all districts to calculate population for the year of 2016.
  - 2) It is an example of accuracy of an information when obtaining all marks of all students to calculate average marks of grade 10 A students.
  - 3) It is an example of timeliness when obtaining data of wind speed, humidity, temperature to predict weather condition for next Monday.
  - 4) It is the accuracy of information when a patient with high blood pressure forwards his latest report to a Doctor.
  
3. Which one of the following benefits can be received by a student who registered in a Learning Management System?
  - 1) Ability to supervise activities and display results.
  - 2) Use of an automatic bell system to separate periods.
  - 3) Ability to upload answers to school assignments as soon as they are completed at home.
  - 4) Ability to obtain data for school development society and to school community through e-mail.
  
4. Which of the following represents the correct order when the devices are arranged in descending order of data access speeds?
  - 1) Magnetic Tape, CD, Hard Disk, Register Memory
  - 2) Register, Flash Memory, Cache Memory, DVD
  - 3) Register Memory, Cache Memory, Flash Memory, DVD
  - 4) DVD, Flash Memory, Cache Memory, Register Memory

5. Which of the following is true about Network topology?
- 1) Ring topology uses lowest amount of wires.
  - 2) All computers are connected to a main single wire in ring topology.
  - 3) Total computer network collapses when one commuter breaks down in Bus topology.
  - 4) The Disadvantage of tree topology is that the total computer network is connected to one of the main computer

6. Which of the following feature/s is/are relevant to data transmission of fiber optic cables ?

- A. Velocity of light
- B. Voltage
- C. Full internal reflection

- 1) A and B only.    2) B and C only.    3) A and C only.    4) C and D only.

7. Which of the following is equivalent to decimal value of 53?

- 1)  $101101_{16}$     2)  $110101_2$     3)  $101011_2$     4)  $10101_2$

8. Which of the following is not equal to the binary value of  $101011_2$ ?

- 1)  $2B_{16}$     2)  $53_8$     3)  $13_{10}$     4) None of the above

9. Which of the following s are the equivalent values of 190 and 277 respectively?

- 1)  $BE_{16}$  and  $425_8$     2)  $425_8$  and  $BE_{16}$     3)  $EB_{16}$  and  $425_8$     4)  $BE_{16}$  and  $524_8$

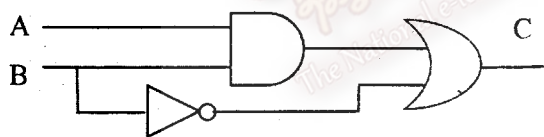
10. What is the lowest number of bits that is necessary represent hexadecimal  $F35_{16}$ ?

- 1) 1    2) 3    3) 9    4) 12

11. Which of the following is equivalent to 2 Giga Byte?

- 1)  $2^{10}$  Megabytes    2)  $2^{20}$  Kilobytes    3)  $2^{10}$  Byte    4)  $2^{34}$  Bit

12. The truth table of the logic circuit is incomplete, which of the following matches the out put C in the truth table?



A	B	C
0	0	
0	1	
1	0	
1	1	

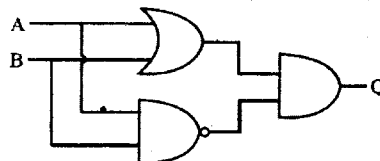
- 1) 1,1,0,1    2) 1,0,1,1    3) 1,1,0,0    4) 1,0,1,0

13. Sri Lanka cricket board has selected the player A and B as the opening pair. They are going to decide one of the players out of C and D to play as the third player. Which of the following Boolean expression represents the above scenario?

- 1) A AND B OR (C OR D)    2) A OR B AND (C OR D)  
 3) A AND B AND (C OR D)    4) A AND B AND (C AND D)

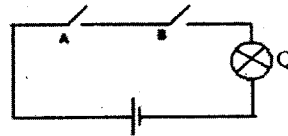
14. Which of the following Boolean expression represents the output(q) of the logic circuit ?

- 1)  $(A + B) \cdot (\overline{A \cdot B})$
- 2)  $(A + B) + (\overline{A \cdot B})$
- 3)  $(A \cdot B) \cdot (\overline{A + B})$
- 4)  $(A \cdot B) + (\overline{A + B})$



15. Which of the following logic circuit is represented by the circuit?

- 1) NAND
- 2) OR
- 3) NOT
- 4) AND



16. What are the most significant (MSB) and least significant (LSB) bits of 0.07864?

- 1) 4 and 0
- 2) 4 and 7
- 3) 0 and 4
- 4) 7 and 4

17. Which of the followings will be the result if you hit (Ctrl+ backspace) keys while typing a document in a word processing software?

- 1) It deletes the letter to the left of cursor
- 2) It deletes the letter to the right of cursor
- 3) It deletes the word to the left of cursor
- 4) It deletes the word to the right of cursor

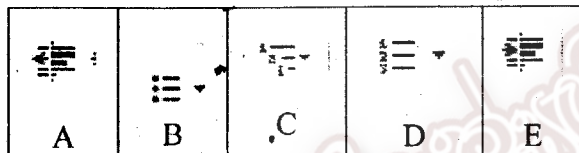
18. Consider the following facilities available in a Word Processing package.

- A. Landscape
- B. Layout
- C. Portrait

Which of the above are used to set paper orientation?

- 1) A and B only.
- 2) A and C only.
- 3) B and C only
- 4) All of A, B, C

19. Following tools have been used to prepare the list 1. Which of those icons, given below, have been used in order to prepare the list?



1. RAM
    - 1.1. SRAM
    - 1.2. DRAM
  2. ROM
    - 2.1. PROM
    - 2.2. EPROM
    - 2.3. EEPROM

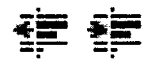
- 1) A
- 2) B
- 3) C
- 4) D

20. Which of the following is **not** an advantage of cloud computing?

- 1) Receipt of web space to save your documents.
- 2) Necessity to use a computer space to store.
- 3) Possibility to access and edit the document in any computer connected to Internet.
- 4) It is not necessary to install word processing package in a computer.

21. These tools in a word processing package, are used -----

- 1) to get a number list and a bulleted list.
- 2) to increase space between words.
- 3) to increase space between lines.
- 4) to increase indentation.



22. Logical segmentation of a new hard disk, according to user's choice is called.....**1**.....,This hard disk cannot be used at once. Each segment should be .....**2**..... before sorting data.

Which of the following is best suitable to fill in the blanks **1** and **2** respectively?

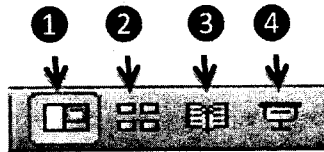
- 1) Partitioning, Formatting.
- 2) Formatting, Partitioning.
- 3) Partitioning, Defragmentation.
- 4) Defragmentation, Formatting.

23. 2GB-space out of 8 GB remains free in a certain USB flash drive. Which of the following file/s can be stored using maximum free space?

(File Name)	(Size)
x.mp4	1 GB
y.docx	524 KB
z.gif	1500 MB

- 1) x.mp4 and z.gif only.                      2) y.docx and z.gif only.  
 3) x.mp4 only.                                      4) all of above.

Consider the following figure to answer question 24 and 25.



24. Which number of the icon in the above picture is used to change the slide order in an electronic presentation?

- 1) No 1 icon.    2) No 2 icon.    3) No 3 icon.    4) No 4 icon.

25. Which number of the icon in the above picture is used to go to full-view of a slide in an electronic presentation?

- 1) No 1 icon.    2) No 2 icon.    3) No 3 icon.    4) No 4 icon.

26. Consider the following statements regarding electronic presentation software.

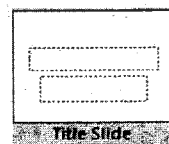
- A. Slide transition is used to change from one slide to another
- B. Styles can be set in its master page of an e-presentation.
- C. Status bar displays no of slides in the presentation and the number of slide that is selected at the moment.

Which of the above statement(s) is / are true regarding an electronic presentation?

- 1) A and B only.    2) A and C only.    3) B and C only    4) All of A, B, C

27. Which of the following facility can be used to change slide structure from A to B?

- 1) slide sorter
- 2) slide design
- 3) slide layout
- 4) slide transition



A



B

28. Which of the following key combination is used to insert a new slide to a presentation?

- 1) ctrl + M    2) ctrl + N    3) alt + M    4) alt + N

Consider the following spread sheet segment to answer questions 29 to 32.

	A	B	C	D
1	6	5	2	
2	7	3	8	
3	4	11	10	
4				

29. Which of the following function is used in D1 cell to add values in cells A1, A2, A3 and B3?

- 1) =sum(A1:A3)                                      2) =sum(A1:B3)  
 3) = sum(A1:A3+B3)                              4) =sum(A1:A3,B3)

30. Consider the following functions to calculate the highest value in cell D4.

A. =max(A1:C3)

B. =max(A1:A3,B1:B3,C1:C3)

C. =max(A1,A2,A3,B1,B2,B3,C1,C2,C3)

Which of the above functions are correct?

- 1) A and B only.    2) A and C only.    3) B and C only    4) All of A, B and C

31. Which of the following function is used to calculate the minimum value in cell C4 in the cell range of A1:C3?

1) =count(A1:C3)

2) =max(A1:C3)

3) =min(A1:C3)

4) =rank(A1:C3)

32. Which of the following key combination is used to move to the extreme end of right hand cell of the given spread sheet segment?

1) Alt + End

2) End

3) Ctrl + End

4) Shift + End

33. Which of the following value is displayed, if the formula =2 \*3+5^2 is entered in a cell of a spread sheet?

1) 16

2) 31

3) 20

4) 21

The following data base tables in an OPD of a hospital that stores data of registered patients, Doctors and channel information. Consider tables to answer question no 34 to 39.

Patient Table

Patient ID	P Name	Address	Phone
P001	Kasuni	Nugegoda	0112855060
P002	Vishwa	Panadura	0382565982
P003	Thimathi	Homagama	0342222449
P004	Kavindu	Kottawa	0112893258

Doctor Table

Doctor_ID	Doctor_Name	Phone_No	Specialty
D001	Dr. N. Fernando	0112855063	Arthritis
D002	Dr. Amal Silva	0112458978	Diabetes
D003	Dr. C. Pathirana	0342248963	Cardiologist
D004	Dr. A Anuradha	0382558964	Dentist

Channel Table

Patient_ID	Doctor_ID	Add Date	Is_paid
P002	D003	2016/08/23	Yes
P001	D001	2016/09/07	Yes
P004	D002	2016/08/25	No
P002	D002	2016/08/23	Yes
P003	D004	2016/09/20	Yes

34. How many records are there in the channel table?

1) 4.

2) 3.

3) 5.

4) 6.

35. Which of the following is an example of a foreign key in this Data base?  
1) Patient\_ID of Channel table      2) Doctor\_ID of Doctor table  
3) Patient\_ID of Patient table      3) Phone\_No of Doctor table
36. Which of the following data type is suitable for the field - Is\_paid in the channel table?  
1) Text      2) Yes / No      3) Number      4) Memo
37. Which of the following doctors has the patient, Vishwa channeled?  
1) Dr. C. Pathirana and Dr. A Anuradha      2) Dr. N. Fernando and Dr. Amal Silva  
3) Dr. A Anuradha and Dr. Amal Silva      4) Dr. C.Pathirana and Dr.Amal Silva
38. What is the specialty of the doctor that the patient Thimathi has channeled?  
1) Cardiologist      2) Dentist      3) Arthritis      4) Diabetes
39. If more than one field is required to uniquely identify a record, which of the following term is referred to such a key.  
1) foreign key      2) special primary key  
3) connective key      4) composite key
40. "Under utilization of information technology has deviated the present student population on wrong channels." stated by a scholastic to a newspaper. Which of the following statements do you think that confirms or supports the above statement?  
A. Getting to un-suitable friends groups in online social networks.  
B. Difficulty to concentrate on education due to obsession to technology.  
C. Displaying of deformed pictures and videos that ruins personal good name.  
D. Inclination to reading e-newspapers and e-books.  
1) A and C only      2) A, B and C only      3) B,C and D only      4) all A,B,C, D

බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව  
மேல் மாகாணக் கல்வித் திணைக்களம்  
Department of Education - Western Province

වර්ෂ අවසාන ඇගයීම  
ஆண்டிறுதி மதிப்பீடு - 2016  
Year End Evaluation

ශ්‍රේණිය } 10  
තරම }  
Grade }

විෂය } Information and Communication  
பாடம் }  
Subject } Technology I, II

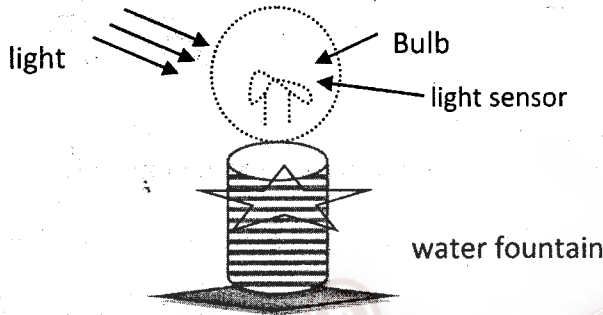
පත්‍රය } II  
வினாத்தாள் }  
Paper }

Important :

- Answer five (05) questions only selecting the first question and four others.
- 1<sup>st</sup> question carries 20 marks and each of the other questions carries 10 marks.

1.

(i) Given below is a light-system to illuminate a garden fountain with a light sensor.



- ❖ The two conditions to be fulfilled to light the bulb are - the environment should be dark and the fountain should be working.
- ❖ X equals 1, when the light sensor is activated in a dark environment and the value equals 0, when the light sensor is not activated during daytime.
- ❖ Consider that Y equals 1 when the fountain is working and it equals 0, when it is not working.
- ❖ Consider that Z equals 1, when the bulb is on and it equals 0, when the bulb is off.
  - Write the Boolean expression when the bulb is on, using the variables X, Y and Z
  - Write the truth table to above expression.

(ii) Consider the following list labeled P to T.

- P. Computerized axial tomography(CAT))
- Q. Electrocardiogram (ECG))
- R. Magnetic resonance imaging (MRI)
- S. Electro-encephalogram. (EEG)
- T. Cardiac Screening Machine

Match the devices labeled P to T from the above list with the following situations. Write the letter of the situation and the matching label of the device in your answer script.

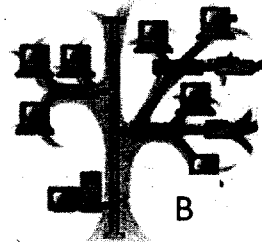
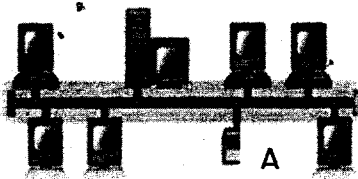
- to observe electric pulses of the heart when pumping blood to organs of the body.
- to display brain activity on a TV screen, using generated electric pulses in the brain.
- to identify the cause of an illness by taking a 3D picture of internal parts of the body.
- to take detail pictures of internal parts of body using radio and magnetic echoing.

- (iii) Mr. Subash – an environmentalist uses his smart phone to take photos and he uses his phone's touch screen to select best photos before he saves them in his laptop, next he backup it in his 16GB USB pen and takes printed photos through a laser printer and some photos are used in electronic presentations to display over multimedia projector.

Identify the devices mentioned in the **above scenario** and classify them suitably in the grid given below

device type	example/s
Input device/s	
Output device/s	
Storage device/s	
input / output device/s	

- (iv) Identify the flowing network topologies and write the term that refers to each of them with a main feature.



- (v) Consider the following situations.

- A. Only to inter-connect 41 computers of technology lab of Monarathenna school.
- B. A customer who has registered of an e-banking system to pay bills using his/her mobile phone.
- C. To link the main office of a company with its Store, Factory and the Regional Office in a same town.

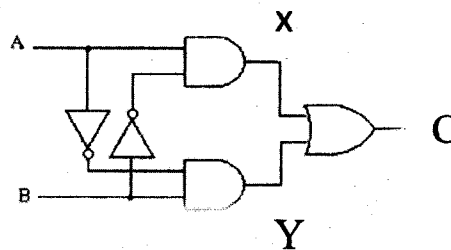
Identify the matching network type for each of the above situation.

List {Wide area network (WAN), Local area network (LAN), and Metropolitan area network (MAN)}

- (vi) Complete the blanks of the following table using your knowledge of number conversions.

Decimal	Binary	Octal	hex decimal
47	.....	.....	2F <sub>16</sub>
.....	101110 <sub>2</sub>	56 <sub>8</sub>	.....

- (vii) Write the Boolean value and the expression for each of X, Y, and C of the following logic circuit.





(viii) Match column A with B and write only the matching label pairs in your answer script.

Group A
① Utility Software
② Operating System
③ Language Translator
④ Application Software

Group B
(P) Interpreter
(Q) Computer Game
(R) Anti-Virus Software
(S) Hanthana Linux

(ix) Mention two of object- types that can be inserted in to slide of an e-presentation.

(x) Operating systems are classified as follows. Write one example for each of the following operating system type, selecting words from the list.

- A. single user
- B. multi user
- C. single task
- D. real-time

List:	MS DOS	Windows Server	MS Word
	Mac OS	OS of an ATM machine.	

2.

- i. Convert 175 into a hex decimal number with steps of the conversion.
- ii. Copy the following table in your answer script and complete.

Coding system	Number of bits used.
.....	7
BCD	.....
.....	8
Unicode	.....

iii. Draw the logic circuit to the following Boolean expression and write the truth table.

$$A. \bar{B} + \bar{A}. B. C$$

iv. Draw the basic circuit diagram to represent the NAND gate.

3. Answer the following questions using the given part of spread sheet that provides statistical information of a base hospital.

(i)

	A	B	C	D
1				
2	<b>Disease analysis -open patient department. 2013-2015</b>			
3		<b>No of patients who received treatments.</b>		
4	<b>Disease</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
5	High blood pressure	1120	1200	1318
6	diabetic	1800	1120	1952
7	cardiologic illnesses	813	710	798
8	Kidney problems	390	258	210
9	Bone related Diseases	720	620	593
10				
11	<b>Total number of patients</b>	4843	3908	4871
12	<b>Patients who received highest number of treatments.</b>	1800	1200	1952
13	<b>Percentage of highest no of Disease</b>	37.17	30.71	40.07
14				

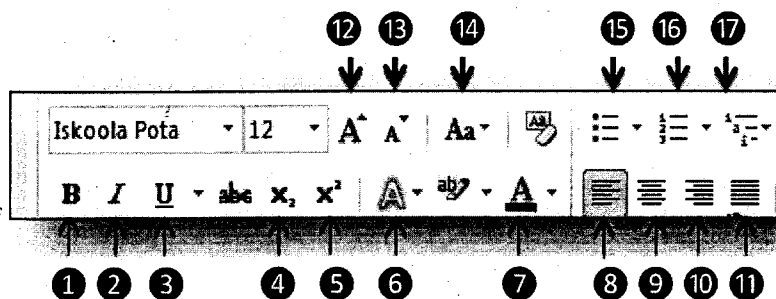
- (a) Write the function in cell –B11 to calculate the total number of patients that received treatments from OPD in 2013.
- (b) Write the function in C12 cell to calculate the highest value for-which decease that people got treatments in the year -2014.
- (c) The percentage of the highest number of people who received treatment for an illness is calculated by dividing the highest number of patients, by the total number of patients of the year and multiplying it by 100. Write the formula in cell C13 to calculate the percentage of the decease with the highest number of patients for an illness in the year 2014.
- (d) Suggest a suitable chart type to plot data of “Blood pressure”, “Blood sugar” and “heart deceases” showing their differences for each of the 3 years given in spread sheet.
- (ii) Given below is a table with key combination and their results, in spread sheet software. Write the matching pairs in your answer script.

	Group A		Group B
1	Ctrl + Home	P	to change right hand side sheets of a work sheet.
2	Ctrl + End	Q	to go to extreme end of cell of data cell range
3	Home	R	to move into cell A1
4	Ctrl + Page Down	S	to move to bottom right hand cell of a data cell range.
5	Ctrl + Arrow Keys	T	to move to column A of active cell row.

4. The text in column “P” is formatted as in Column “Q” in word processing software.

	P Before formatting	Q After formatting
(i)	RAM ROM	• RAM • ROM
(ii)	super computer	SUPER COMPUTER
(iii)	H2o	H <sub>2</sub> o
(iv)	Classification according to size	Classification according to size
(v)	Mainframe Computer	<b>Mainframe Computer</b>
(vi)	Mini Computer	<u>Mini Computer</u>

The above formats, from ① to ⑰ have been done with the following tools. Write the number of the tool/s against each of the numbers from (i) to (vi) in column “p”.  
(Important:- writing un-necessary number of tools gets no marks.)



(b) Key combinations are used to perform a task quickly. Write the performance of each key combination given below.

- i. Ctrl+N
- ii. Ctrl+O
- iii. Ctrl+X
- iv. Ctrl+HOME

(c)

- (i) Mention two of free and open presentation software.
- (ii) Mention 3 features of a quality e-presentation.

5. "e-City" is a store that sells computer parts. They purchase items from consignment supplies and the details of supplied items and supplier is recorded in following tables of a database.

✓ **Item Table**

Item ID	Item Name	Stock
A001	15" LED Monitors	15
A002	1 TB Hard Disk	20
A003	16 GB USB Flash Drive	15
A004	1 Tb RAM	20

✓ **Supplier Table**

Sup ID	Supp Name	Phone No
S01	Tech Lanka	034 2231452
S02	IT Zone	011 2543217
S03	City Smart	038 1237564
S04	Tech Park	0112 342256

✓ **Purchase Table**

Date	Supp ID	Item ID	Count
20/04/2016	S01	A001	40
29/05/2016	S03	A004	20
12/06/2016	S02	A002	30
22/06/2016	S04	A003	15
13/06/2016	S02	A001	20

- i. Mention two of the suitable primary keys with their respective fields in table.
- ii. Avishka goes to e-city and buys five 16GB USB flash drives.
  - (a) Which table(s) should be updated?
  - (b) Write the updated record/(s) in table.
- iii. The e-city decided to start a sale of a new item called "Optical Mouse". They purchased 40 units of the item from the supplier -"A to Z IT Parts" on 02/08/2016 and communicated with that supplier on 0384532261.
  - (a) Which of the above table(s) should be updated?
  - (b) Write the updated record as it appears in table(s).
- iv. Mention two methods that can be used to protect this database.

6. (i) Copy the column X and Y to your answer script and draw arrows between matching items in column X and column Y.

X
A. physical components of a computer system.
B. a feature of a computer
C. a method of computer classification
D. the main process of a computer system.

Y
P. accurately responds to instructions
Q. analog computer
R. input, process, output
S. hard ware

- (ii) Read the following statements and mark with a tick (✓) if the statement is correct and mark with a cross (✗) if the statement is wrong.

- Data transmission speed is measured with Hearts.
- Hub transmits data in one direction at a given time.
- A modem is a must when setting up a computer network.
- A Router is used to connect two or more computer networks.
- Wi-Fi and blue tooth are examples of radio wave usage.

- (iii) Computer memories are generally classified for educational purpose. Following terms refer to some of the memory types

Random Access Memory (RAM)  
 Read Only Memory (ROM)  
 Cache Memory  
 Hard Disk/Floppy Disk/Magnetic Tape  
 CD/DVD/Blue-ray  
 USB flash drive

- Mention an example of primary memory device and a Secondary memory device,
- Give one example for each of the following memory types..
  - magnetic media
  - optical media
  - solid state media
- Which of the above memory type enhances the efficiency of the process?
- Flash drives are used to transport data from one computer to another. Mention two of the advantages

7.

- Telemedicine is one such advantage of information and communication technology. State what is meant by Telemedicine and give two instances where telemedicine is used.
- A member of hardware team stated that the partitioning is an important activity in utility program of an operating system. state
  - What is meant by partitioning and mention when to do it.
  - Give two reasons for partitioning.
- Kavidu hopes to follow a foreign computer course using computer technology. State how you would explain the above situation and mention 3 features of it.
- Vihangee has registered herself in an electronic banking system. She uses this facility to do online shopping.
  - Mention two advantages for her in online shopping
  - Mention two other facilities for her from e-banking system.