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දෙවන වාර පරීක්ෂණය - 10 ශ්‍රේණිය - 2019 Second Term Test - Grade 10 - 2019

Name/Index No:- Information & Communication Technology Time:- 03 hours

- Answer all the questions.
- In each of the questions 1 to 40 pick one of the alternative I, II, III and IV which consider as correct or most appropriate.

- The Tsunami disaster occurred in 2004 was discussed massively those days but now everybody has forgotten it. In which characteristic can be seen in the above incident.
 - Relevance
 - Timeliness
 - Completeness
 - Accuracy
- A grade 10 student has invented a machine to check the bags of those who enter a bank when the bag is inserted into the machine, the machine checks it. If there isn't anything suspicious a green bulb will be lit and if there is anything suspicious. a red bulb will be lit. Which of the following answers display the input, process & output of this machine in order?
 - Input the bag, check the bag lit the bulb
 - Lit the bulb, check the bag, input the bag
 - Input the bag, lit the bulb, check the bag
 - Check the bag, Lit the bulb, Input the bag
- The government used e-government facility for organize government activities. What are services that provide to government employees from the government?
 - Cash payment services
 - Providing loan facilities to the government employees
 - Providing gazette and application forms.
 - Only A
 - Only A and B
 - Only A and C
 - all of the above
- The following table, column A slows the devices which used in Health sector, column B shows the functions of those devices.

| A | B |
|---|---|
| E ECG(electrocardiogram machine) | L monitors the heartbeat. |
| F MRI(magnetic resonance imaging machine) | M machine displays the physiology of the heart. |
| G EEG(electro encephalography) | N create digitalized images of the internal organs of the body. |
| H CSM Cardiac screening machine | H Rerecord the activities of the brain. |

- Match A and B
- E-L, F-N, G-O, H-M
 - E-O, F-N, G-M, H-N
 - E-M, F-N, G-L, H-O
 - E-M, F-N, G-O, H-L

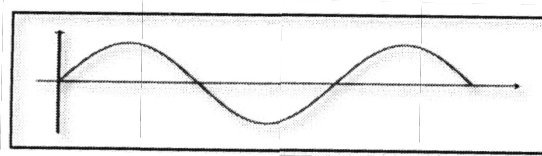
05. Consider the following statements related to computer evolution.

- A - Blaise Pascal invented the Adding machine
- B - Joseph Jacquard Invented weaving machine with punch card system.
- C - Howard Aiken Invented Analytical engine.

1. Only A 2. Only A and B 3. Only A and C 4. All of the above

06. What is the correct example for equipment which uses the type of signal indicated in the following illustration?

- 1. Smart Phone
- 2. Speed Meter
- 2. Laptop
- 4. Desktop



07. Piumi use a wireless mouse in her laptop because easy to use. What is the media of data transfer of this mouse?

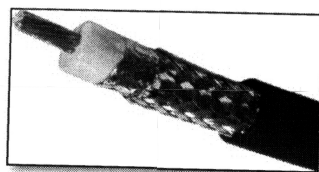
1. Wi-Fi 2. Radio wave 3. Microwave 4. Infrared

08. Consider following statements related to be data communication Medias.

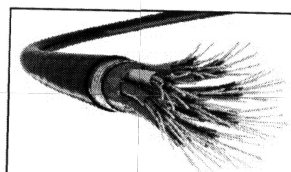
X –Use in modern telephone networks.

Y –Transfer data to maximum distance of 100m

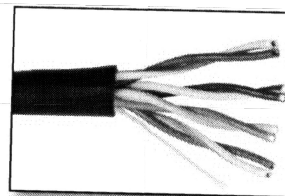
Z –Used in the CCTV cables and television antennas



A



B



C

Match the above sentences with the given pictures and select the answer.

- | | |
|------------------------|------------------------|
| 1. X – B, Y – C, Z – A | 2. X – C, Y – B, Z – A |
| 3. X – A, Y – B, Z – C | 4. X – C, Y – A, Z – B |

09. Which of the following is a function of OMR?

- | | |
|-------------------------------|---------------------------|
| 1. Check number of the cheque | 2. Check the MCQ answers. |
| 3. Scanning characters | 4. Reading barcode |

10. Consider following statements related to be secondary memory

- A. can store data and information permantly
- B. It is a volatile memory.
- C. can connect both internal & external computer.

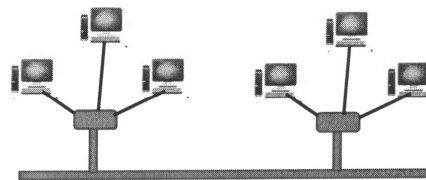
Which of the above statements is /are correct?

1. Only A 2. Only A and B 3. Only A and C 4. All of the above

11. Which of the following is mostly used port for the television & audio devices?

1. HDMI port 2. Serial Port 3. Parallel Port 4. USB Port

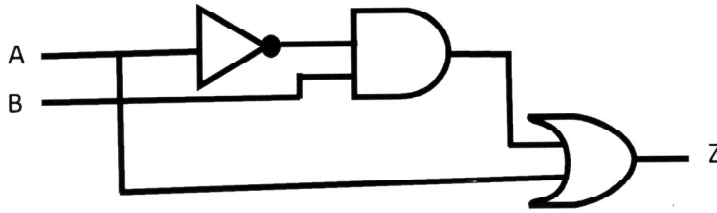
12. Which of the followings is correct?
 A –Internet & walkie-talkie is a full duplex communication media.
 B –Data transfer from the computer system to the monitor using simplex communication.
 C –E-mail is a Half-duplex communication
1. Only A 2. Only A and B 3. Only B and C 4. All of the above
13. Staying in this country Sumudu is a who following a foreign degree in British university. He should deposit 30 pounds in ABC international Bank for the first term. He should do this in this country itself. Which computer network is used for this transaction?
1. LAN 2. WAN 3. MAN 4. CAN
14. What is the device which can be used as a Hardware and Software security barrier when connecting a computer network with the internet?
1. Modem 2. Router 3. Firewall 4. Switch
15. The following network topology is
1. Mesh Topology 2. Tree Topology
 3. Star Topology 4. Bus Topology
16. What is the numbers equivalent decimal 157_{10}
- A. 10011101_2
 B. 235_8
 C. 575_8
1. A and B 2. B and C 3. A and C 4. A, B and C
17. What is the decimal value equivalent Hexadecimal 2F?
1. 42_{ten} 2. 47_{ten} 3. 52_{ten} 4. 49_{ten}
18. The value of P+Q is, ($p=1100_2$, $Q=1111_2$)
1. 11011_2 2. $1A_{16}$ 3. 46_8 4. 26_{10}
19. Which of the following is representing Ascending order of these numbers?
1. 10011101_{two} , $5B_{sixteen}$, 234_{eight} , 126_{ten} 2. $5B_{sixteen}$, 126_{ten} , 234_{eight} , 10011101_{two}
 3. $5B_{sixteen}$, 234_{eight} , 126_{ten} , 10011101_{two} 4. 126_{ten} , 234_{eight} , $5B_{sixteen}$, 10011101_{two}
20. what is the BCD code equivalent decimal 69?
1. $0110\ 1010_{BCD}$ 2. $0110\ 1001_{BCD}$
 3. 10010110_{BCD} 4. $0100\ 0101_{BCD}$
21. If the character “E” is represented as 1000101 in ASC ii coding system, what is the ASCII code for character G?
1. 1000010_2 2. 1000111_2
 3. 1000110_2 4. 1000011_2
22. Which of the following BCD has least value?
1. 10010010 2. 01000101
 3. 10000011 4. 1001.1000



23. Nuwan borrowed 85 rupees from a friend. He paid the loan completely in two installments as A and B. find the binary numbers from the following answer, which is equipment to the installments.

1. $A = 101000_2$ $B = 101101_2$ 2. $A = 100110_2$ $B = 101101_2$
3. $B = 101101_2$ $B = 101101_2$ 4. $B = 101101_2$ $B = 101111_2$

24. What is the correct output regarding the following circuit?



1. 2. 3. 4.

| A | B | Z |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

| A | B | Z |
|---|---|---|
| 0 | 0 | 1 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 0 |

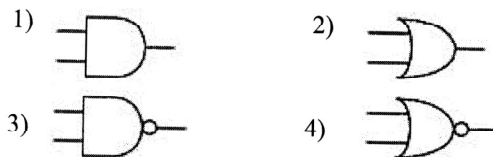
| A | B | Z |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 0 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

| A | B | Z |
|---|---|---|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

25. What is the logic gate created through the output of the logic circuit with three gates given below?

1. AND 2. OR 3. NAND 4. NOR

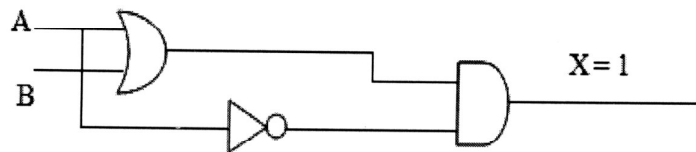
26. What is the logic gate of following truth table?



| Input | | Output |
|-------|---|--------|
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 1 |

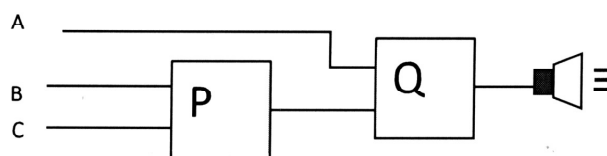
27. What is the correct value that should be input in to A and b inputs in order to get one as the output of X gate, given below.

1. $A=0$ and $B=0$
2. $A=1$ and $B=0$
3. $A=0$ and $B=1$
4. $A=1$ and $B=1$



28. There is a house with a front and a back door to enter it. This house has a electric bell for its safety. The bell will ring if someone tries to enter by any of the 2 doors after 10p.m.

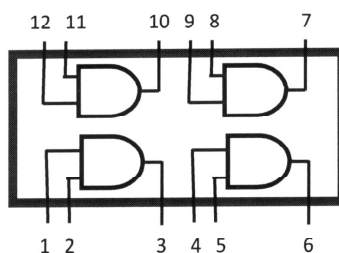
(A input = 1: after to p.m.) Take passing 10p.m. as A, trying to enter by the front door as B, trying to open the back door as C, and name the logic gates in order P and C and name the logic gates in order for P and Q of the following logic circuit.



1. AND gate and OR gate
2. OR gate and AND gate
3. NAND gate and OR gate
4. NOT gate and OR gate

29. What is the output of third pin integrated following circuit when inserting 1 from pin 1 and zero from pin 2 to the pins 1 and 2

1. 1
2. 0
3. inconclusive
4. none of the above.



30. "Organizing the hard disk by rearranging clusters of small spaces together and creating a larger free space." This process is called,

1. Disk Formatting
2. Disk Partition
3. Disk Defragmenter
4. Disk Scan

31. Which of the following is not a function of an operating system?

1. Memory management
2. File management
3. Scanning virus
4. Providing user interface

32. Consider following statement regarding to operating systems.

- A. Allocating memory that is necessary for a process expected to function.
- B. Allocating time for the process by the CPU
- C. The internet using for operating the process.

Which of the above statements is /are correct?

1. Only A
2. Only B
3. B and C
4. A,B and C

33. Operating system can be divided into two parts. There are,

1. Command line interface, Graphical user interface
2. Online, offline
3. Offline
4. Command line interface (CLI), online

34. Which of the followings is not belongs to the Microsoft word software?

1. AbiWord, Microsoft Office Word, Libre Office writer
2. AbiWord, Microsoft Office Word, King soft Office writer
3. Word Perfect, AbiWord ,Microsoft Office Word
4. Word Perfect, Libre Office Calc, Libre Office writer

35. Consider following statements regarding to the Microsoft word.

- A. can use successfully for the create and editing documents
- B. can add images charts and objects easily
- C. can create and edit video files

Which of the as one statement is/are correct?

1. Only A
2. Only A and B
3. Only B and C
4. A,Band C

36. What is the facility in MS word we can use to send the same letter several people at once?
1. Cut and Paste
 2. Mail Merge
 3. Hyperlink
 4. E-mail
37. It is mistakenly type in different place “device” which device can be used to change “device” at once.
1. Spelling and Grammar
 2. Find and Replace
 3. Auto corrects
 4. Delete and Retype

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |

38. what is the range of the cells which is selected in the following worksheet?
1. C2:D4
 2. C2:C4
 3. C2:D2
 4. D2:D4
39. “mindada” company enters of their workers in a spreadsheet. What are things to be considered when entering the contact numbers of the workers?
1. Format the cell range with the contact numbers to” Numbers”
 - 2.Format the cell range with the contact numbers to”Scientific”
 - 3.Format the cell range with the contact numbers to “Text”
 - 4.Format the cell range with the contact numbers as”Special Symbols”
40. what is the value displayed in the cell, when the formula $= 8/2*3-2^3+5$ is entered?
1. 10
 2. 11
 3. 9
 4. 35

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Second Term Test - Grade 10 - 2019

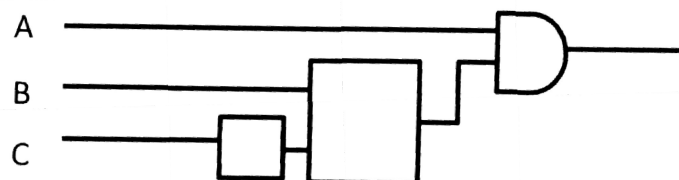
Name/Index No:- **Information & Communication Technology**

- Answer 3 questions with the first question.

- Convert $35B_{16}$ Hexadecimal number in to Octal number. Write the steps.
 - Amara went to address point and selected a dress and took it to the counter to pay money. There, the barcode which was tagged in that dress was entered into the information system of the shop. She received a printed bill after the payment made. Write down the Input, Process and Output of this information system according to the above incident.
 - Write down the technologies of storage devices such as Blue-ray, flash Drive, memory cards.
 - Information communication technology is used in various fields. Name two automatic control systems used to make transportation easy.
 - Write down two software features which can be seen in the fifth generation computers with the advent of modern technology.
 - The principal has designed a monitoring system that operates from 7.30 a.m. to 1.30 p.m. to regulate the supervision process in a school. The monitoring system functions when students go out of the classroom during learning periods or students behave restlessly in the classroom. In the above situations, the monitoring camera system capture students' photograph and send to the principal's mobile phone.

| | | |
|---|---|---|
| A | Time is 7.30 a.m. to 1.30 p.m. | 1 |
| | Time is not 7.30 a.m. to 1.30 p.m. | 0 |
| B | Students go out of the classroom during learning periods | 1 |
| | Students do not go out of the classroom during learning periods | 0 |
| C | Students keep calm in the classroom | 1 |
| | Students behave restlessly in the classroom | 0 |

Below is the incomplete logic circuit for the school's monitoring system. Complete the logic circuit by drawing the correct logic gates. (Draw the circuit on the answer sheet and complete.)

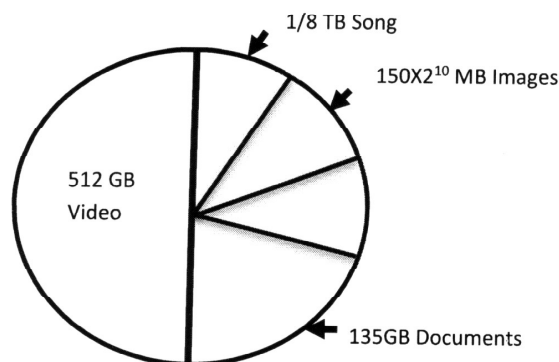


- Operating system is a system software which essential to run a computer. Name two main functions of operating system under managing hardware.

- (viii) Write down two word processing software developed for using with mobile phones and tablet computers.
- (ix) Match the numbers in column A with the letters in column B and write down in order.

| Column A | Column B |
|-------------------------|-------------------------|
| 1) Utility Software | P) Interpreter |
| 2) Language Translators | Q) Computer Games |
| 3) Operating System | R) Anti -Virus Software |
| 4) Application Software | S) Isuru Linux |

- (x) Sumedha's computer has a total capacity of 1TB and the memory usage of each file type to store data is shown in the picture below



- (a) What is the capacity of this hard disk in GB?
- (b) What is the capacity allocated for songs in GB? (2 × 10 = 20 marks)

02. (i) e-government can maintain government functions efficiently and effectively. Name two services provided by e-government to other governments. (02 marks)
- (ii) Tele Medicine is a main IT tool in the health sector. Define Tele medicine and write two examples of the use of that service. (03 marks)
- (iii) Complete the following table using your knowledge on computer generation. (Copy the table to the answer sheet and complete it.)

| Generation | Technical device used for processing | Computer language used |
|-------------------|--------------------------------------|------------------------|
| First Generation | | |
| Second Generation | | |
| Third Generation | | |
| Fourth Generation | | High level languages |
| Fifth Generation | | |

(03 marks)

- (iv) Write down two occasions when using information technology for entertainment.

(02 marks)

03. (i) “New Dream Communication” institute provides services such as computer games, software, internet use, email, video chat, file editing, movies and TV series, colour and black and white prints for their customers. The head of the organization intends to open new branch in a nearby city. Another purpose is to communicate with the new branch using a communication network. Consider these facts and fill in the blanks of the phrases below by selecting the answers from the brackets.

- The network that connects the New Dream Communication institute with new branch in a nearby city is called
-is the suitable storage device to store movies and TV series, computer games, software.
- The most profitable device which can be used to retrieve black and white printed copies is

- Retrieving movies and TV series, computer games, software through internet is called

-can be installed to protect this institute. (01 × 5 = 5 marks)

(Laser printer, Modem, Metropolitan Area Network, Download, CCTV camera, External hard disc, Switch, Upload)

- (ii)
- Name the data transmission media which can be used to network “New Dream Communication” institute with new branch. (1 Mark)
 - Write down two facts which needed for video conferencing. (1 Mark)
 - Computers error checking of new branch in the nearby city is done in “New Dream Communication” institute. Name a software which can be used for this. (1 Mark)
 - It is decided to network all the computers in this institute. Name an advantage from this and name the network topology for this network. (2 Marks)

04. (i) Which number system/systems of following numbers listed below belong to? Write down answer by selecting from binary, octal, decimal, hexadecimal.

| Number | Number system/systems |
|---------|-----------------------|
| A 800 | |
| B 10110 | |
| C 760 | |
| D 2E3 | |

(0.5 × 4 = marks)

- (ii) i. Manohara who works in a production company is paid Rs.702₈ as daily payment. He should have a Rs.132₈ per hour as overtime payment. He works 2 over time hours per a day. Also amount of Rs.1001011₂ has been deducted for the lunch.

- a. Write down the daily payment of Manohara in Binary. (1 Mark)
- b. Write down the earnings for 10 overtime hours in hexadecimal. (1 Mark)

- (iii) Hexadecimal number system is used to depict a colour in RGB colour model. For an example light blue colour is depicted as #45abed in hexadecimal number. Here the light blue colour is made by mixing 69 of the red colour through first two numbers **45**, 171 of green colour through **ab** and 235 of blue colour through **ed**.

The table below shows two colours used for painting a map and fill in the blanks with relevant calculations.

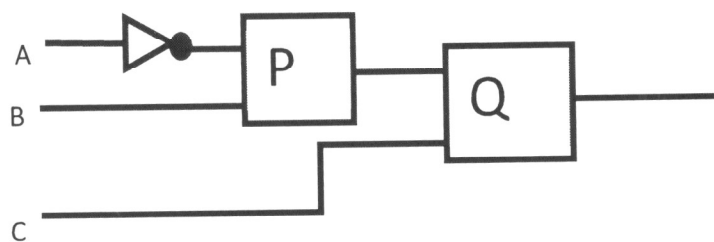
| Colour | Red | Green | Blue | Colour in hexadecimal |
|------------|-------|-------|-------|-----------------------|
| Papayawhip | | 239 | 213 | #FF...D5 |
| khaki | 240 | 230 | | #FO....8C |

(0.5 × 4 = marks)

- (iv) $(A+B).A+C$ Draw the logic circuit for this Boolean expression. (2Marks)
- (v) To protect the vehicle, the automotive manufacturers check whether there isn't any defects of the vehicle and also test whether all doors are locked for the starting the engine. In the end, if all of the above is correct, all those who are in the car will be checking if they are wearing seatbelts. If all of the above is correct, the engine is started.

A input defines the defects of the vehicle, B input all the doors and C input seatbelts, if the car is defective, the doors are locked and the seatbelt is worn, A, B and C inputs are "1".

The incomplete logic circuit for the above process is given below. Copy the circuit to the answer sheet. Name and fill the correct gates for P and Q.



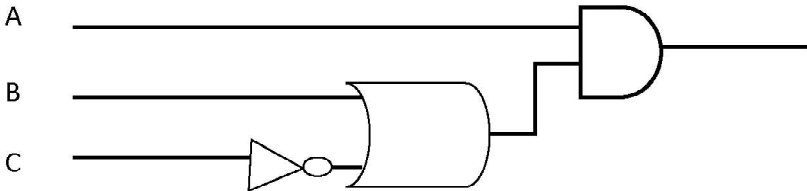
(2Marks)

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Information & Communication Technology- Answer

| | | | |
|-------|-------|-------|-------|
| 1. 2 | 11. 1 | 21. 3 | 31. 3 |
| 2. 1 | 12. 3 | 22. 2 | 32. 2 |
| 3. 3 | 13. 4 | 23. 1 | 33. 1 |
| 4. 1 | 14. 3 | 24. 1 | 34. 4 |
| 5. 2 | 15. 2 | 25. 1 | 35. 2 |
| 6. 2 | 16. 1 | 26. 2 | 36. 2 |
| 7. 4 | 17. 2 | 27. 3 | 37. 2 |
| 8. 1 | 18. 1 | 28. 2 | 38. 1 |
| 9. 3 | 19. 2 | 29. 2 | 39. 3 |
| 10. 3 | 20. 3 | 30. 3 | 40. 3 |

| | | | |
|--|--|------------------------|------------|
| 01. i. 3 5 B ₁₆ 0011 0101 1011 001 101 011 011 1 5 3 3 ₈ | | | (02 marks) |
| ii. Input Input the barcode | Process Process the bill | Output Getting bill | (02 marks) |
| iii. Blue ray disc | Optical media, Flash Memory /Memory card | Solid state Device | (02 marks) |
| iv. Traffic Light control System | Electronic Toll Collection | | (02 marks) |
| v. Operating System with graphical user interface Internet & Multimedia Application, Application with artificial intelligence , character & Voice recognition | | | (02 marks) |
| vi. |  | | (02 marks) |
| vii. Memory management, Device management, File management | | | (02 marks) |
| viii. Google Docs, Kingsoft Office, Polaris Office | | | (02 marks) |
| ix. 1 - R 2 - P 3 - S 4 - Q | | | (02 marks) |
| x. (a) 1024 GB 1 TB (b) 128 GB | | | (02 marks) |

02. i . Custom Information , Government Law , Aid for tourists , Diplomatic & Visa Information(02 marks)

ii suitable definition & Eg: Remote Surgery / Remote Clinical care / Remote training (03 marks)

iii .

| Generation | Technology | Computer Language |
|----------------------------|--------------|---------------------|
| 1 st Generation | Vacuum Tubes | Machine language |
| 2 st Generation | Transistor | Assembly Language |
| 3 st Generation | IC | High Level language |
| 4 st Generation | LSIC, VLSIC | |
| 5 st Generation | ULSIC | |

(03 marks)

iv. Information sharing between friend/ Using social media

Computer Games

Listening Music & Watching Film

(02 marks)

03. i a. Metropolitan area network

b. External Hard disc

c. Laser Printer

d. Download

e. CCTV Camera

(1 x 5 = 02 marks)

ii. a. Fiber optic

(01 mark)

b. Internet Connection / Software / a Computer / a Camera (01 mark)

c. Team Viewer (01 mark)

d. Resource Sharing / Ability to control central software / Less storage space

Easy to Communication Ring Topology / Star topology (02 marks)

04. i. A - Decimal, Hex Decimal

B - Binary, octal, Decimal, Hex Decimal

C - Octal, Decimal, Hex Decimal

D - Hex Decimal

(0.5 x 4 = 02 marks)

ii. a. 111000010₂ (01 mark)

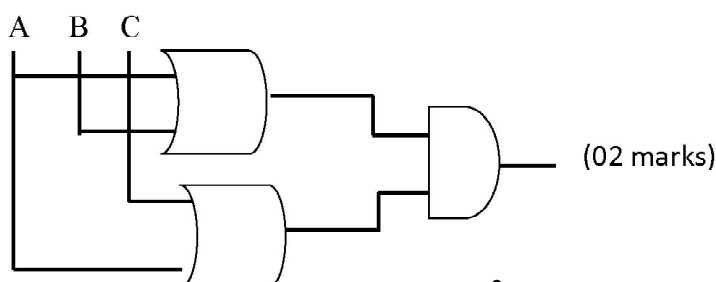
a. 384₁₆ (01 mark)

iii.

| Color | Red | Green | Blue | Hex Decimal Color code |
|-------------|-----|-------|------|------------------------|
| Papaya whip | 255 | 239 | 213 | FFEFD5 |
| Khaki | 240 | 230 | 140 | #F0E68C |

(0.5 x 4 = 02 marks)

iv.



(02 marks)

v. P - AND gate

Q – AND gate



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