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Provincial Department of Education – NWP

20 | E | I

Second Term Test - Grade 12 - 2019

Index No : .... Information and Communication Technology I   Two - Hours

Instructions :

- **Answer all the Questions**
- **Write down your index number in the space provided in the answer sheet.**
- **Select the correct or most appropriate answer from the given answers of 1,2,3,4 or 5**

1. What is the special feature of EDSAC (Electronic Delay Storage Automatic Calculator) created by Maurice Wikes?
    (1) The machine was created to introduce the concept of computer to the world.
    (2) First stored program computer was built according to Von Neumann principle.
    (3) The first electronic digital computer.
    (4) The first automated computer in the world.
    (5) First computer created in the second generation.

2. The following statements are about hardware technologies used in the computer generations.
    A- The first generation computers were large in size due to the use of vacuum tubes.
    B- With the use transistors the size of the computers became smaller and the speed became comparatively faster.
    C- Use of the transistors started according to ADA AUGUSTA's concept.
    What are the correct statements?
    (1) Only A is correct   (2) only A and B correct
    (3) A is correct while B and C are incorrect   (4) A and B are correct while C is incorrect
    (5) All A,B & C are correct.

3. What is the **incorrect** statement regarding parallel computing and grid computing?
    (1) In parallel computing, programs and processes are done simultaneously
    (2) In parallel computing, large problems are divided into smaller ones and not solved at different times.
    (3) In parallel computing, server computers which are connected by internet run independent tasks.
    (4) Grid computing is a distributed architecture of large number of computers connected to solve a complex problem.
    (5) The computers which were used in parallel computing contain multi core processers.

4. Which of the following is **not** a task done by a digital computer?
   (1) Gets information as input
   (2) Stores data/instruction and uses them later when needed
   (3) Processes data into information
   (4) Provides output via output devices
   (5) Controls all the above

5. The value equivalent to 10110101.01_2 ?
   (1) 184.65   (2) 181.25   (3) 160.01   (4) 175.35   (5) 165.01

6. The following statements are about software.
   A- Licensed and unlicensed software are two types under copyrights law.
   B- Licensed software only grants rights for redistribution, not the rights to edit the software.
   C- Unlicensed software or free and open source software provides the source codes to the user.
   D- The user does not have to pay for free and open source software.
   What are the correct statements?
   (1) only AB   (2) only BC   (3) only ACD   (4) only BCD   (5) all A, B, C, D

- **Use the Karnaugh map to answer the questions 7 & 8**.

AB\\CD	00	01	11	10
00	1	1		
01	1	1		
11	1			
10	1			

7. What is the correct expression for the above Karnaugh map?
   1) $F(A,B,C,D)=\sum(2,3,6,7,11,15)$ 2) $F(A,B,C,D)=\sum(0,3,5,7,9,1)$
   3) $F(A,B,C,D)=\sum(0,1,4,5,8,12)$ 4) $F(A,B,C,D)=\sum(3,5,6,7,11,15)$
   5) $F(A,B,C,D)=\sum(0,1,4,7,10,13)$

8. What is the correct expression after solving the Karnaugh map?
   1) $F=C'(A'+D')$ 2) $F=B'(A+C')$ 3) $F=C(A'+D)$
   4) $F=D(A'+C')$ 5) $F=C'(A'+B')$

9. What is the equivalent value for $2FA_{16}$?
   (1) 1011110010_2 (2) 1011100110_2 (3) 1371_8 (4) 762   (5) 726

10. Which of the following guided media is immune to both EMF and RFM?
    (1) Twisted Pair   (2) Coaxial   (3) Fiber Optics   (4) Shield TP   (5) Copper cable

11. What is the fundamental function of an operating system?
    (1) Operating the computer   (2) Networking computers
    (3) Operating computer devices   (4) Finding malfunctions in computer
    (5) Providing an interface between user and hardware.

12. Which of the following answer shows the two's complement of -8_{10} and 25_{10} respectively?

    (1) 00001000 and 00000101   (2) 11111010 and 11110111

    (3) 11110111 and 00000101   (4) 00000101 and 00011001

    (5) 11111000 and 11111010

13. In a competition, Kusal scored marks 23 and Mathew scored 10110_2, if they want to win the competition, they must score 84 marks, how many more marks they should score in order to win?

    1). 46_8 2). 37   3). 55   4). 101111_2 5). 100111_2

14. Token Ring is the protocol used in Local Area Networks for communication, which of the following topologies uses it?

    A .Star Topology   B. Bus Topology   C. Ring Topology

    1). Only A   2). Only B   3). Only C   4). Only A and B   5). Only A and C

15. What is the command that should be used to find Round Trip Relay Time between two computers in a network?

    1) Ping   2). Tracert   3). Ipconfig   4). telnet   5). Ipconfig /all

16. What is the correct modulation type that can be used for digital to analog conversion?

    A. FM -Frequency Modulation
    B. FSK -Frequency Shift Key
    C. PSK -Phase   Shift Key
    D. PCM- Pulse Code Modulation

    1). only A   2). Only B   3). Only A and B

    4). only B and C   5) all A, B C

17. .... is the fastest semiconductor memory which increases the speed of the tasks in the CPU while CPU .... uses the data and instructions which is......................... stored'

    1) cache memory, rarely, temporarily   2) cache memory, continuously, temporarily

    3) cache memory, continuously, permanently   4) main memory, rarely, permanently

    5) main memory, continuously, permanently

18. Which of the following address is used to send frames to a particular computer through a switch?

    1) MAC address   2) IP address   3) Default Gateway address

    4) IP and Default Gateway   5) Network Address

19. Which of the following protocols uses UDP?

    A -DHCP   B- SMTP   C- DNS Query   D- HTTP

    1) Only A   2). Only B   3). Only A & B   4). Only A & C   5). Only B,C & D

20. Data is transmitted through Connection Multiplexing in OSI model, in which layer **Connection Multiplexing** occurs?

    1). Application Layer   2). Session Layer   3). Transport Layer

    4). Network layer   5). Data link layer

21. What is the second layer protocol used in data transmission in a common shared network using CSMA/CD in OSI model?

    1). POP   2). PPP (Point to point protocol)   3). SMTP (Simple Mail Transfer Protocol)

    4). Token Ring   5). Ethernet

22. What should be A, B, C if output X=1 in the following logic circuit?

    A
    B

    C
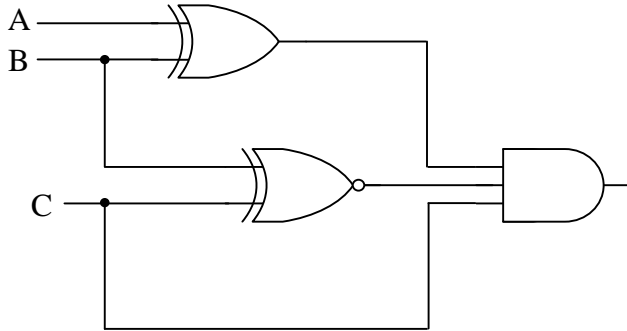
    1). 1,0,0   2). 0,0,0   3). 1,1,1   4). 0,1,1   5). 0,0,1

23. What is the decimal equivalent for 11100001_2?

    1) 513   2) 113   3) 313   4) 713   5) 163

24. What is the invalid value for BCD code from the following?

    1) 01010011   2) 00101001   3) 10010001   4) 10100011   5) 10000100

25. If K is represented by 75 in ASCII code what is the octal value representing K?

    1) 122_8 2) 112_8 3) 102_8 4) 212_8 5) 221_8

26. What are the Universal Gates?

    1). AND & NAND   2). NAND & NOR   3). XOR & OR

    4). XOR & AND   5). AND & OR

27. What is the product of sum (POS) expression for ABC+AB'C'+AB'C+ABC'+A'B'C?

    1).(A'+B'+C') (A+B'+C) (A+B'+C')   2). (A+B+C) (A+B'+C) (A+B'+C')
    3).(A+B'+C') (A+B+C') (A'+B+C)   4). (A+B+C)(A'+B+C') (A+B'+C)
    5)(A'+B'+C') (A+B'+C) (A'+B'+C)

28. What is the answer after solving ((X+Y)'+Z')'?

    1). (X+Y)Z   2). (X'+Y')Z   3). (X+Y)Z'   4). (X'+Y')Z'   5). (X'+Y)Z'

29. Subnet mask of a network is 255.255.255.192, IP address of one computer from this network is 10.10.5.70

    What is the network address and broadcast address respectively?

    1).10.10.5.0 & 10.10.5.255   2). 10.10.5.128 & 10.10.5.255.0

    3). 10.10.5.64 & 10.10.5.255   4). 10.10.5.63 & 10.10.5.255

    5). 10.10.5.64 & 10.10.5.127

30. The first and last IP addresses of a subnet are respectively 172.16.4.0 & 172.16.7.255, what is the broadcast address and number of host computers in correct order?
    1). 1022 ,255.255.0.0   2). 510 ,255.255.0.0   3). 1022 ,255.255.255.0
    4). 1022 ,255.255.252.0   5). 1022 ,255.255.254.0

31. Which of the following is a valid Ipv6 address?
    1). 3021:0:130F::9C0:876A:150C   2).2041:0DB8:0000:130F:0000:0000:08GC:140B

    3).3001:0DB8:0:130H::87C:140B   4).3031::130F::9C0:876A:130B

    5).4031::130A:9C0:876A::130B

32. The following statements are about the memory access
    A- The data saved in the secondary storage memory is accessed one after one
    B- The data stored in any place of the secondary storage memory is directly accessed
    What is the correct answer regarding the above statements
    1)   A is random access
    2)   B is sequential access
    3)   RAM is an example for statement B
    4)   The memory mentioned in statement A is not used in personal computers.
    5)   Both statements A & B are incorrect regarding computer systems'

33. A medical Centre has developed a device to measure the blood pressure. This device is given to few hospitals for use, which type of deployment is this?
    1).Direct deployment   2). Pilot deployment   3). Parallel deployment
    4).Phased deployment   5). All the above

34. Which of the following is an example for closed system?
    1). School system   2). Washing machine   3). Automatic Teller machine (ATM)
    4). Water cycle   5). Hydroelectricity power plant

35. Which of the following is the most suitable functional requirements?
    1)   Can retrieve money from ATM.
    2)   A bicycle can be able to carry 50kgs.
    3)   A washing machine should be able to complete washing within 20 minutes.
    4)   Mobile phones must be able to store the details of the user.
    5)   The temperature of an electric oven must not exceed 500C.

36. Consider the following statements
    Statement 1 -Encryption is a technique used to protect the confidentiality of data and information'
    Statement 2 -Encryption is a service of internet like Email and file sharing'
    Which of the following is correct regarding above statements?
    1) Both statements are correct   2) First is correct and second is incorrect
    3) First is incorrect and second is correct   4) Both statements are incorrect
    5) First statement is explained by the second statement.

37. One person has created a website resembling the website of ABC banks and sent the URL to Saman via email, when Saman used the URL, it downloaded all the confidential information from Saman's computer, which type of threat is this?

1). Virus   2). Trojan Horse   .(3 Malware   .(4Phishing   .(5 Man in Middle attack

38. Which of the following is not a feature of spiral model?
    1) Risk analysis should be conducted in the beginning of each cycle.
    2) The user will be able to see the system in the end of system development.
    3) Finding the requirements in the beginning is not necessary.
    4) This is suitable for the system developments with unclear requirements.
    5) Iterative development method is used.

39. ABC Softwares institute has divided into modules and developed a certain system after combining the modules, what type of testing should be used to check whether its working properly?

1).Module testing   2). Unit testing   3). Black box testing
4).System testing   5). Integrated testing

40. Consider the following statements regarding data flow model.
    a. Two external entities are connected by dotted lines.
    b. Manual temporary data storage is symbolized by T(M).
    c. A browse carriage belongs to a temporary database (T).
    Which of the above statements is correct,

1) Only a   2). Only b   3). Only c   4). Only a and b   5). a, b, c all

41. What is the correct statement about RAM?
    1) DRAM is used for cache memory and registers'
    2) DRAM must be refreshed continuously'
    3) Synchronous DRAM can be synced with external devices of the computer'
    4) Capacitors are only used in SRAM for data representation'
    5) The data will be available in RAM even after the power is disconnected'

42. The following is about data life cycles.

1. Data creation

A

B
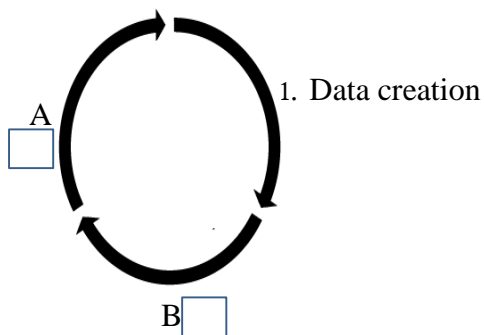
What is the correct order for A & B?
1) management, removal of obsolete data   2) time management, collecting data
3) collecting data, removal of obsolete data   4) removal of obsolete data, collecting data
5) removal of obsolete data, management

6

43. What is meant by Process Control Block in an operating system?
    1) Process Type Variable   2) Data Structure   3) Secondary Storage Unit
    4) Part Of Memory   5) None Of The Above

44. The operating system and other processes can be changed by the current running process:
    What is meant by this?
    1) There is another memory space for them
    2) There are different logical addresses for them
    3) There are security algorithms for them
    4) Every address generated in the CPU is relocated and checked against limited documents
    5) All the above

45. Which of the following is used to find the page size?
    1). Various power   2). Power 2   3). Power 4
    4). None of the above   5). All the above

46. What is the correct statement regarding operating system?
    1) Kernel is in the center of operating system
    2) Kernel is the opening system of operating system
    3) The middle part of the operating system is known as core
    4) The kernel is in the memory of the entire computer session
    5) All the above

47. "Virtual memory can be divided in the memory". What is done by divide?
    1) Process   2). Instruction   3). Activity
    4). Data   5). All the above

48. A running process in an operating system is stopped and after, the same process is continued or another new process is started, what is the word used for this activity?
    1) blocked   3) interrupt   5) context switching
    2) swapping   4) paging

49. In a number system .... is the number of characters used and ....is represented by the value one less than the number of characters used?
    1) maximum value, base   2) minimum value, base   3) green value, base value
    4) base, minimum value   5) base, maximum value

50. What is the correct statement about big data?
    1) The data with large numbers and values
    2) A big and complex collection of data which can't be processed like general data
    3) A collection of data collected from big companies
    4) The data recorded in a big set of books
    5) The data collected by people

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Provincial Department of Education – NWP

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Second Term Test - Grade 12 - 2019

Index No : .... Information and Communication Technology II   Three Hours

Answer all questions in Part A and only four questions selected from part B

Part –A - Structured essay

- **Answer all the four questions on this paper itself.**
- **Write your answers in the space provided for each question.**

1. a) i. Data processing is an important step to get information, write the steps of data processing in correct order.

    ii. State the difference between *Data type check* and *Data range check*, give one example for each.

b) i. State 04 features of Distance Learning.

ii. Give 04 instances or examples related to Green Computing

2. a) i. The following image shows the output when the ping command is used through TCP/IP protocol.

```
Select C:\WINDOWS\system32\cmd.exe

C:\Users\HP>ping google.com -t

Pinging google.com [172.217.194.139] with 32 bytes of data:
Reply from 172.217.194.139: bytes=32 time=71ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251
Reply from 172.217.194.139: bytes=32 time=70ms TTL=251

Ping statistics for 172.217.194.139:
    Packets: Sent = 7, Received = 7, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 70ms, Maximum = 71ms, Average = 70ms
Control C
```

1. What is the purpose of using ping command in computer networks?
   ....
2. What is the IP address of the server computer *google.com*?
   ....

2

3. What is the maximum value for Round Trip Time according to the above image?

....

4. What is meant by TTL? What is the function of it?

....

5. What protocol is used to construct the ping command? What is the main function of it?

....

3. a) Fill the following chart about code systems.

Code system	No of bits used	Data represented
ASCII		
		Represents most written languages in the world

b) Simplify.

i. $10101_2 + 11001_2 =$

ii. $1011001_2 - 1101_2 =$

iii. 01010_2 OR $00111_2 =$

iv. NOT $(01010_2$ OR $00111_2) =$

c) Construct the truth table for the following logical expression

$F_{(A,B)} = (A+B') (A'B)'$

4.

CD \ AB	00	01	11	10
00	1			1
01	1	1		1
11	1	1		1
10	1		1	1

a) Use the above Karnaugh map to answer the following questions

    i.   State the Boolean expression.

        ....

    ii. Simplify the above-mentioned Boolean expression using the Karnaugh map.

        ....

        ....

b) Simplify $((A+BC)'+(AB')')'B$ using Boolean laws

....

....

....

Second Team Test – 2019
Information Communication Technology -12 – Part II
<u>Part B</u>

(1) There is a system which takes numbers from 0-15, a signal will be generated if the number entered can be divided by 2 or 3.
   a. Construct the truth table for the output.
   b. Express the output in product of sum (POS) or sum of product (SOP) form.
   c. Simplify the above Boolean expression.
   d. Design the logic circuit for the simplified Boolean expression you have obtained in the previous question.

(2) There are 04 different branches in ABC institute, they are administration (LAN1), production (LAN2), marketing (LAN3) and sales (LAN4). The number of computers varies from unit to unit. These 04 units are connected through a router named X. These 04 units use an ADSL internet connection.
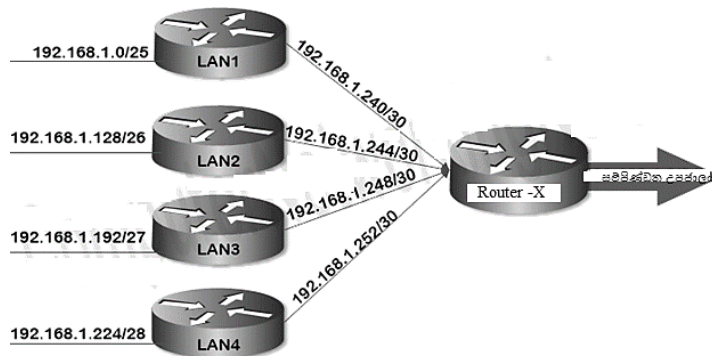
Sub Network	Network Address	Broadcast Address	Subnet Mask	No of usable host devices.
LAN1				
LAN2				
LAN3				
LAN4				

   1. ADSL transmits data in Asynchronous method. Compare Synchronous and Asynchronous methods in serial data transmission.
   2. The above routers (LAN1, LAN2, LAN3 and LAN4) are connected to 04 switches, what type of address is used to transmit data through the switch? What is the number of bits used for this?

3. The above router X displays one subnet address, Classless Inter Domain Routing (CIDR) is used for this purpose. What is the advantage of CIDR?
4. Fill the above chart.
5. What is the subnet address displayed outside by the router X using CIDR (Classless Inter Domain Routing) and Summarization?

(3) a) Information is generated through data processing
   i. Briefly explain the scenario of withdrawing money from a bank using the concepts Data, Processing and Information.
   ii. Write 04 characteristics of quality information
   iii. State 02 day to day life examples where information is important'

   b) i. Give o4 drawbacks of Manual data processing method
      iii. State 02 differences between Mobile Communication and Mobile Computing

   c) Name the following applications to which Cloud Computing reference model they belong to, state the reason if they do not belong to any of them (Iaas, Pass, Saas)
      i. Free email facility through Email server
      ii. Storing information in a Server computer and retrieving them later when needed
      iii. Presentations created through internet using Prezi presentation software by number of people
      iv. Use of Online virtual games or Apps

(4) i. a. write 05 computers in ascending order based on their physical size.
       b. Write 03 advantages of direct data input comparing to the keyboard input
       c. Explain the Fetch-execution cycle using a suitable block diagram

   ii. a. Convert the following values into decimal numbers
          1. 25_8 2. $2CF_{16}$ 3. 1101.101_2
       b. Convert the binary number 11001011_2 into octal and hexadecimal numbers. Show the steps clearly

(5) a. What are the 02 fundamental objectives of using an operating system?
    d. i. What is meant by a page used in memory management by an operating system? briefly explain the importance of it.
       ii. In a computer, the virtual memory is 32 bits and the displacement (offset) is 12 bits. According to this
          i. What is the number of pages in the page table?
          ii. What is the size of the page?
          iii. Calculate the page table size in bytes.
    c. The operating system uses different techniques for process management"
       i. Write 02 advantages of multiprogramming
       ii. Give a suitable diagram to show the process state transition

(6) A robot is used in ABC hospitals. The robot operates on predefined commands. It also can be programmed at any time. The programmer and the system must be connected for programming. Many processes are programmed. They are **taking stationaries, taking blood samples, informing about shortages of medicines** and **bringing needed medicines**. The **programmer** has set the program as **translating into bits** by a **compiler** and will be programmed in an **EEPROM**. The **doctor** who connects with the robot will give information on **shortages of medicines** and the information will be saved on the **flash memory** in the system. At the end of a day a **report on shortages medicine** will be generated by the robot and will be hand overed to the **hospital director**. The **admission officer** will give **information patients' files and ward numbers** to the robot by entering the data to the system. The robot will find the correct rout to the ward number by using the **road map** from the data storage in the flash memory. The robotic system will give the relevant stationaries to the head **nurse** of the ward by using the ward number. It also will hand over the **blood sample** given by the doctor to the relevant **blood tester** by using the **laboratory number** given by the doctor. The **medical store officer** will enter the relevant ward number to send the **medicines** to the head nurse of the ward when shortages of medicines occur. The following is the context diagram for above given details. Use this information and draw level 1 data flow diagram.

I - paper

Question number	Answer	Question number	Answer	Question number	Answer	Question number	Answer	Question number	Answer
(1)	1	(11)	5	(21)	1	(31)	1	(41)	2
(2)	4	(12)	4	(22)	1	(32)	3	(42)	5
(3)	3	(13)	5	(23)	2	(33)	2	(43)	2
(4)	1	(14)	3	(24)	4	(34)	4	(44)	4
(5)	2	(15)	1	(25)	1	(35)	4	(45)	2
(6)	3	(16)	4	(26)	2	(36)	2	(46)	3
(7)	3	(17)	2	(27)	2	(37)	4	(47)	1
(8)	1	(18)	1	(28)	1	(38)	2	(48)	1
(9)	4	(19)	4	(29)	5	(39)	5	(49)	5
(10)	3	(20)	3	(30)	4	(40)	2	(50)	2

II – Part A

(1) a) i. 1. Data gathering 2. Data validation 3. Data processing
4. Data output 5. Data storage
- if all answers are correct marks 03 , if ¾ correct marks 02 , if 2/1 correct marks 01
(maximum marks 03)

ii.

Data type check	Data range check
Check whether correct data type is input into the system	Check whether the data is in allowed range
Ex- Name- Text, Date of birth - Date/Time	Ex- when entering date of birth, the month should be between 1-12

For stating the difference 1x2=02 ,
For examples 0.5x2=01 (total marks 03)

b) i. -can learn at any time from any place. -online lectures and exams
-digital learning materials -less expensive 0.5x4=02 (total marks 02)
ii. - the study and practice of efficient and eco-friendly computing resources
-removing e-waste methodically
-reusing electronic waste materials
-recycling electronic waste materials
-creating laws regarding dumping electronic waste 0.5x4=02 (total marks 02)

(2)
1. a) to check the connection between two computers in TCP/IP computer
2. 172.217.194.139
3. 71ms

4. TTL- Time To Live
Tell how long an ICMP packet can stay inside the network. It also decides through how many routers the packet can travel. The maximum value for TTL - 255. Each router that receives the packet subtracts at least 1 from the count.

5. ICMP(Internet Control Message Protocol)
   ICMP is error reporting protocol .(in TCP/IP)

3. a)

Code system	No of bits	Data represented
	bit 7 or 8	Numbers, Spelling, Symbols, etc. 128/ 256
Unicode	bit 16	

marks0.5 x4=02   (marks 02)

b) i. 101110_2 ii. 1001100_2 iii. 01111_2 iv. 10000_2

marks 1 x4=04   (marks 04)

c)

A	B	A'	B'	(A+B')	(A'B)	(A'B)'	F
0	0	1	1	1	0	1	1
0	1	1	0	0	1	0	0
1	0	0	1	1	0	1	1
1	1	0	0	1	0	1	1

For a correct line 1 x4=04   (marks 04)

4. a)

CD \ AB	00	01	11	10
00	1			1
01	1	1		1
11	1	1		1
10	1		1	1

i. F=A'B'C'D'+A'B'CD'+A'BC'D'+A'BC'D+A'BCD'+ABC'D'+ABC'D+ABCD'+AB'C'D'+
    AB'CD+AB'CD'   (marks 02)

ii. For grouping   marks 02
        F=D'+BC'+AB'C   marks 03   (total marks 05)

b) =((A+BC)'+(AB')')'B
    =((A+BC)''.(AB')'')B   marks01
    =((A+BC).AB')B   marks 01
    =(A+BC).AB'.B =0   marks01   (total marks 03

2

B part

(1) a) if all correct marks 05

A	B	C	D	Z		
0	0	0	0	0		
0	0	0	1	0		
0	0	1	0	1		
0	0	1	1	1		
0	1	0	0	1		
0		1	0		1	0
0	1	1	0	1		
0		1	1		1	0
1	0	0	0	1		
1	0	0	1	1		
1	0	1	0	1		
1	0	1	1	0		
1	1	0	0	1		
1	1	0	1	0		
1	1	1	0	1		
1	1	1	1	1		

b) Z=A'B'CD'+A'B'CD+A'BC'D'+ABCD+AB'C'D'+AB'C'D+AB'CD'+ABC'D'+ABCD'+ABCD

marks 01

c)

For correct grouping marks   03

Z=A(B+C')+C(A'B'+D)   marks   03

d) 03 mars for the correct circuit

(2) 2. MAC Address(Media Access Control) or Physical Address

Use 48 bits, represent as Hexadecimal number   (marks 02)

3. instead of full class A, B or C networks organizations can be allocated any number of addresses using this scheme. This scheme can help reducing the growth of the router tables can use IPv6 addresses effectively.   (marks 04)

4.

Network	Network Address	Broadcast Address	Subnet Mask	Number of Host Devices
LAN1	192.168.1.0	192.168.1.127	255.255.255.128	126
LAN2	192.168.1.128	192.168.1.191	255.255.255.192	62
LAN3	192.168.1.192	192.168.1.223	255.255.255.224	30
LAN4	192.168.1.224	192.168.1.240	255.255.255.240	14

(marks 04)

5. 192.168.1.0/24   (marks 02)

(3) a) i. for correct explanation   1x3=03
          for correct examples from banking systems   01   (total 04)
        ii. relevancy, completeness, accuracy, timeliness, completeness marks0.5 x4=02   (total)
        iii. decision making, policy formulation, predicting future goals – any 02 correct answers
                                        marks 0.5 x2=01   (total 01)

    b) i. data collapsing, data duplicating, errors occurring , incorrect information, delay errors,
          shortcomings in information sharing   marks0.5 x4=02   (total 02)
        ii.

Mobile communication	Mobile computing
- transmission of information over a distance without the help of wires, cables or any other forms of electrical conductors. - happens between two or more people	-. transmission of data, via a computer or any other wireless enabled device without having to be connected to a fixed physical link. - happens between two or more devices .

                                        marks 0.5 x4=02   (total 02)
    c) i. Pass
        ii. No, it does not provide a service through internet.
        iii.Sass
        iv.Iass   marks =1x4=04   (total 04)

(4) i   a). Palmtop < Tablet< Note book< Laptop< Desktop< Mini computer< Main Frame< Super
              Computer
            - for 5 marks 03 , if ¾ correct marks 02 , if 2/1 correct 01   (maximum marks 03)
        b)   -the user does not interact   - better input method to get remote data
              - comparatively faster data input   Marks =1x3=03   (total)
        c)   explanation with correct block diagram (explanation 02 , block diagram 01) (total 03)

   ii. a) 1. 21   2. 719   3.13.625   marks =1x3=03   (total 03)
        b) 313 $_8$ and CB$_{16}$ (must show steps)   (for steps 01 , answer 01)   (total 03)
(5) a)   1. providing an interface between user and the computer
          2. controlling hardware and software management
   Correct 02 answers   marks 01
    b) The external storage units are divided into same-sized units to help manage memory management.
        This segment is called a page, and pages can be used to manage the amount of space in main
        memory by storing data or program blocks into the main memory.   (Marks 02)
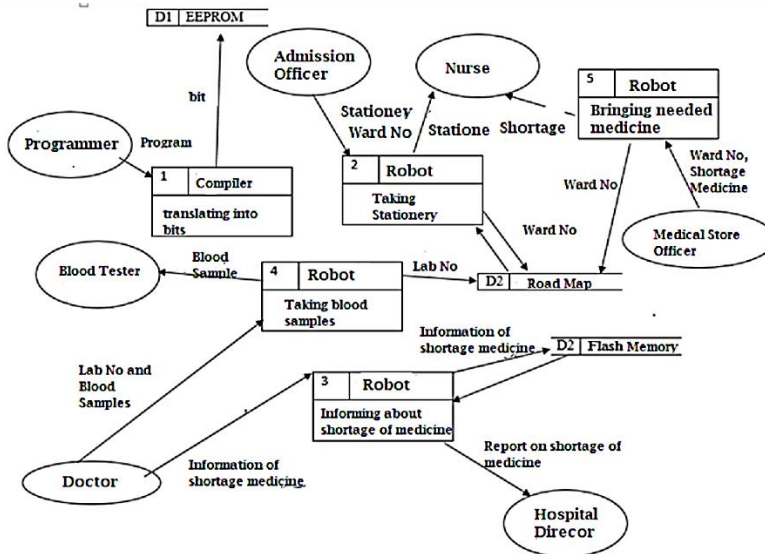
    iii.   Paging Number   Displacement(offset)
    iv.
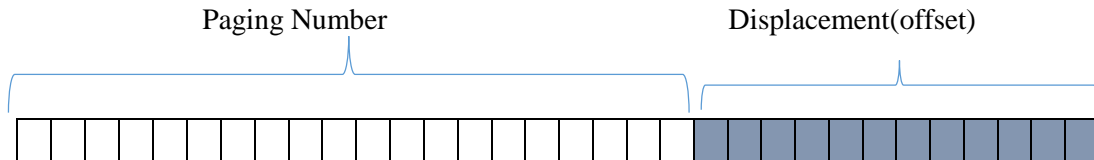
i. $= 2^{20}$ $=1024*1024$ marks 01
         $=1048576$ marks 01

ii. $=2^{12}$ $=4*1024$ marks 2

iii $=2^{32}$ $= 2^{32}/8$ marks 01
         $= 2^{29}$ or 536870912 bytes   marks 01

c)   i   **Advantages**
- High Performance / Efficiency
- Many software can run simultaneously (at the same time)
- More than one person can work with the software   Marks 02

ii.
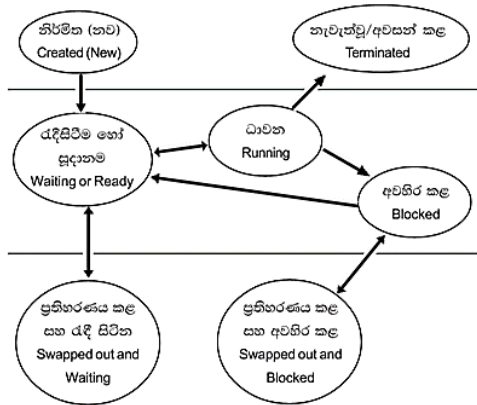
marks 04

(6)

External Entity:7 marks

Processes :5 marks
Data Stores: 3 marks