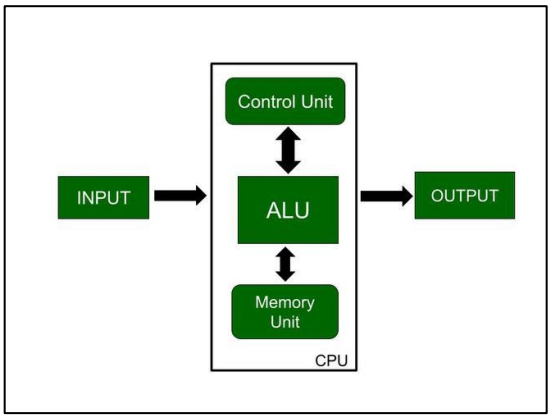
Advanced Level – Information and Communication Technology
2016 MCQ Past Paper

1. Which of the following statements is true?
(1) The first generation of computers were built using transistors.
(2) Electronic Numerical Integrator And Computer (ENIAC) is a second generation computer.
(3) Ada Lovelace is the inventor of the Analytical Engine.
(4) Alan Turing is considered as the first computer programmer.
(5) The first calculating device is believed to be the Abacus.

Answer (1)	Incorrect	First generation → Vacuum tubes, Second generation → Transistors
Answer (2)	Incorrect	ENIAC was founded in 1946 which means it was built in first generation
Answer (3)	Incorrect	Ada Lovelace is the first programmer who wrote the program for Analytical Engine
Answer (4)	Incorrect	Alan Turing is one of the "founding fathers " of artificial intelligence
Answer (5)	Correct	Abacus was invented in the pre-mechanical age

2. Which of the followings is a component of a Central Processing Unit (CPU)?
(1) ROM (2) RAM (3) ALU
(4) L3 Cache memory (5) Power supply unit



3. Which of the following binary numbers is equivalent to 109_{10}?
(1) 1100100_2 (2) 1101101_2 (3) 1001101_2 (4) 1101001_2 (5) 1101100_2

4. Consider the following description/definition list, rendered by a web browser:

Zigzag
    Moving with sharp turns.
Back and forth
    Moving side to side.
Round and round
    Moving in a circle.

Which of the following answers contains all the HTML tags required to create the above list?

(1) <dl>, <dt> only
(2) , <li> only
(3) , <li> only
(4) <dl>, <li> only
(5) <dl>, <dt>, <dd> only

The `<dl>` tag defines a description list.

The `<dl>` tag is used in conjunction with <dt> (defines terms/names) and <dd> (describes each term/name).

5. The content stored in ..... is read by using the optical technology.
Which of the following answers is the most appropriate to fill the blank in the above statement?

(1) flash memory
(2) floppy disk
(3) magnetic tape
(4) compact disc
(5) hard disk

6. In modern computers, multiple levels of cache memory is used to optimize the performance. Among them, the ..... cache which is on/in ..... is the fastest and most expensive cache memory.
Which of the following terms are correct to fill the blanks respectively in the above statement?

(1) Level 1 (L1), main memory
(2) Level 3 (L3), motherboard
(3) Level 1 (L1), microprocessor
(4) Level 2 (L2), microprocessor
(5) Level 3 (L3), microprocessor

Cache Level	Location
Level 1	Inside the CPU
Level 2	Inside the CPU/ CPU housing/ motherboard
Level 3	CPU housing/ Motherboard

7. $101_{16} + 110_{8} =$

(1) 429_{10}
(2) 1011_{10}
(3) 329_{10}
(4) 529_{10}
(5) 137_{10}

8. In an operating system, suspending the currently executing process and then resuming or starting another process is termed as

(1) paging. (2) context switching. (3) swapping.
(4) interrupting. (5) blocking.

(1) Paging	Dividing logical address space into fixed-size blocks called pages, which are the same size as the pages used by the process.
(2) Context switching	The process of saving the context of one process and loading the context of another process
(3) Swapping	Temporarily swaps out an idle or blocked process from the main memory to secondary memory and swaps in processes from the virtual memory to main memory
(4) Interrupting	Generating a signal to get immediate attention of the OS or CPU
(5) Blocking	OS decides that it needs to wait for a certain operation to complete before allowing the program to continue execution

9. In modern operating systems, the ..... scheduler determines the transition of processes from the new state to the ready state.

Which of the followings is the correct term to fill the blank in the above statement?

(1) mid-term (2) long-term (3) very long-term
(4) very short-term (5) short-term

Long Term Scheduler (Job scheduler)	Short Term Scheduler (CPU scheduler)	Medium Term Scheduler (Process swapping scheduler)
Speed is lesser than other two	Fastest among the others	Speed is in between short and long schedulers
Controls the degree of multiprogramming	Lesser control over the degree of multiprogramming	Reduces the degree of multiprogramming
Selects processes from job queue (new state) and admit them to RAM (ready state)	Selects processes which are ready to execute	Swap in and out processes
Degree of multiprogramming → No of processes in the ready state at a given period of time		

10. Consider the following statements:

A - Plagiarism is a common threat to information systems.

B - Plagiarism means claiming someone else's creation as one's own.

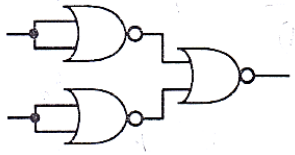
C - Piracy is a synonym for plagiarism.

Which of the above statements is/are correct?

(1) A only (2) B only (3) C only (4) A and B only (5) B and C only

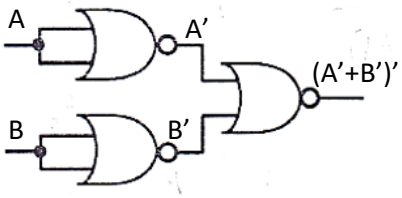
Plagiarism	Presenting ideas or work from another source as your own by incorporating it into your own work without giving due credit to the actual author, whether or not they have given their agreement.
Piracy	Refers to the unauthorized distribution, or use of software, digital media, or other digital content without the permission of the copyright holder

11. Consider the following logic circuit implemented using universal gates:



The above circuit is equivalent to a/an

(1) NOT Gate. (2) AND Gate. (3) OR Gate. (4) NAND Gate. (5) NOR Gate.



(A'+B')'	
A''.B''	De Morgan's Law
A.B	Double complement Law

12. "An analog signal is sampled at regular intervals and represented as 16 bit values." Which of the followings is best described by the above statement?

(1) Amplitude Modulation (AM) (2) Frequency Modulation (FM)

(3) Pulse Code Modulation (PCM) (4) Phase Modulation (PM)

(5) Pulse Width Modulation (PWM)

(1) Amplitude Modulation (AM)	Amplitude of the *carrier signal* varies according the amplitude of the *message signal*
(2) Frequency Modulation (FM)	Transmitting information over a carrier wave by varying its frequency in accordance with the amplitude of the message signal
(3) Pulse Code Modulation (PCM)	Converts the analog information into a binary sequence (1 and 0 – digital form) so that the computer can understand
(4) Phase Modulation	Transmits information over a carrier wave by varying its phase in accordance with the amplitude of the message
(5) Pulse Width Modulation (PWM)	A powerful technique for controlling analog circuits with a microcontroller's digital outputs

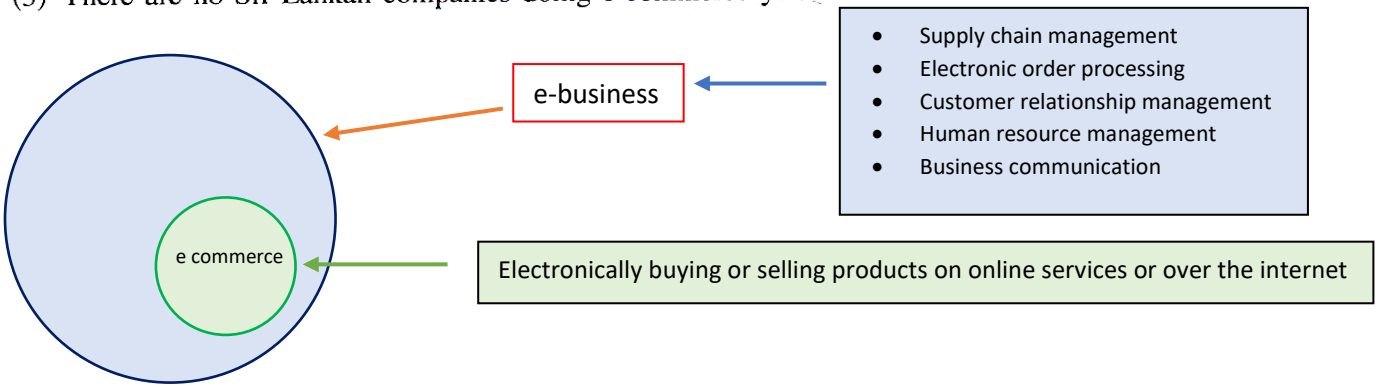
13. Two machines with the IP addresses 192.248.16.30 and 192.248.16.90 are connected to a Local Area Network (LAN). Which of the followings is a suitable subnet mask for this network?

(1) 192.255.255.255 (2) 192.248.16.0 (3) 255.255.255.224
(4) 255.255.255.128 (5) 255.255.255.255

When considering the two IP addresses we can see that the first three octets haven't changed. Therefore, we can say that the first three octets consists of net bits. Then, after converting 90 and 30 into binary we can see that the left most bit of the last octet hasn't changed. Therefore, we can come to the conclusion that that bit is also a net bit. So, there are have to be 25 net bits in the subnet mask

14. Which of the followings is true about e-commerce?

(1) It could be a part of e-business.
(2) It helps to combine multiple business processes into a single information system.
(3) It is a collection of platforms created for business and their customers to interact.
(4) www.google.com is a popular e-commerce web site.
(5) There are no Sri Lankan companies doing e-commerce yet.



15. Consider the following statements:

A - HTML forms can be used to submit data.
B - HTML forms can be used to retrieve data.
C - HTML forms can be placed inside another form.

Which of the above statements is/are correct?

(1) A only (2) B only (3) C only (4) A and B only (5) B and C only

Using html forms, we can submit any data and we are unable to retrieve data we submitted and placing a form inside of another form will lead to unpredictable and incorrect behavior, which is not considered as valid HTML.

16. A/An ..... is an image with clickable sub-areas.
Which of the followings is the most appropriate to fill the blank in the above statement?
(1) Image button (2) Image map (3) Anchor
(4) Icon (5) Thumbnail

Image map → Directs us to a website or page when we click on the image

17. Which of the following is a valid CSS rule?
(1) p { color: red;} (2) p { color = red;} (3) p { text-color: "red";}
(4) p { text-color = red;} (5) p { text-color: red;}

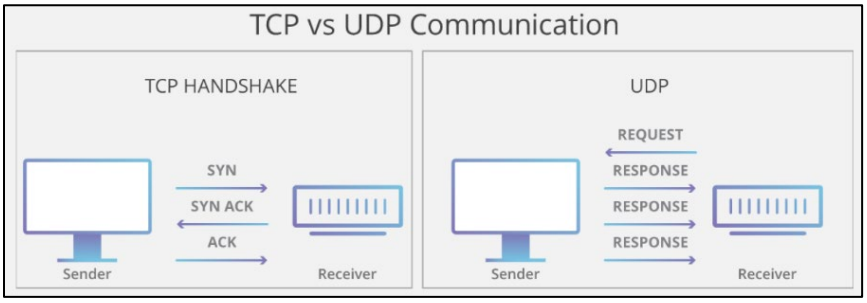
* Double quotations (" ") are not used when mentioning the colour in CSS

18. Which of the following is a correct IPv4 address?
(1) 192.248.0.0.1 (2) 192.258.2.1 (3) 8.8.8.8
(4) 10.256.8.9 (5) 255.255.255.268

In IPv4 address there are 4 octets which consists of 8 bits each. Each octet will be in 0-255 range.

19. User Datagram Protocol (UDP) is a ..... layer protocol.
Which of the following layers is the most suitable to fill the blank in the above statement?
(1) physical (2) data link (3) network (4) transport (5) application

7 layers of OSI reference model (Bottom to Top)		
Layer	Explanation	Names for the data units at each layer
1st layer – Physical layer	It provides a physical medium through which bits are transmitted	Bits
2nd layer – Data link layer	It is used for error free transfer of data frames	Frames
3rd layer – Network layer	It is responsible for moving the packets from source to destination	Packets / Datagrams
4th layer - Transport layer	It provides reliable message delivery from process to process	Segments
5th layer – Session layer	It is used to establish, manage and terminate the sessions	Data
6th layer – Presentation layer	It is responsible for translation, compression and encryption	Data
7th layer – Application layer	It provides the services to the user	Data



20. Consider the following statements regarding routing in IP networks:

A - All routers must use a DNS server for IP packet forwarding.

B - Routers must forward all receiving IP packets along the same path.

C - A router may discard an IP packet.

Which of the above statements is/are correct?

(1) A only (2) B only (3) C only

(4) A and B only (5) B and C only

A	Incorrect	Routers can use DNS servers; it is not a strict requirement for their core function of IP packet forwarding. Routers are primarily concerned with routing packets based on IP addresses, not domain names.
B	Incorrect	Routers may forward IP packets along different paths. But the order of the packets have to correct
C	Correct	When a packet is received by a router that does not have the destination IP address in Routing table, packet is discarded

21. Consider the following system implementation methods:

A - Direct B - Phase C - Parallel

Which of the above methods can be recommended to implement an emergency call handling system?

(1) A only (2) B only (3) C only (4) A and B only (5) A and C only

A – Direct	Old system is discontinued and the new system will be used from that point onwards
B – Phase	Parts of the new system are implemented one by one over the time
C – Parallel	Old and new systems are used at the same time
It is risky to directly implement a new system for systems such as emergency call handling systems in case of a failure of the new system. Therefore, it is recommended to use both old and new systems parallelly until the new system is stable and reliable.	

22. In a public key cryptographic system, the private key of a person x is given by the function priv(x) and the public key is given by the function pub(x).

Consider the following statements:

A - priv(x) and pub(x) should be the same for better security.

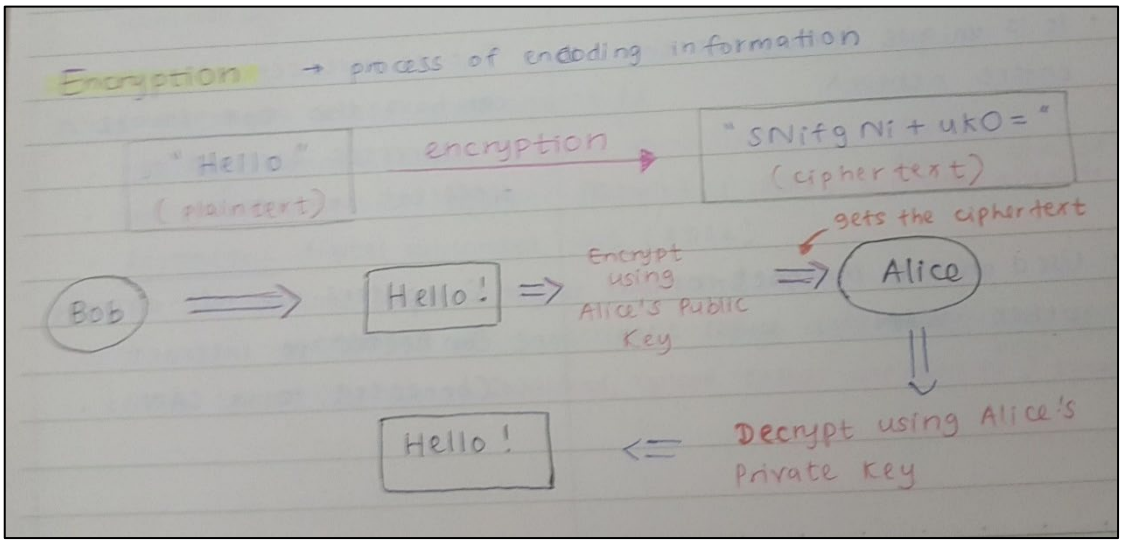
B - A message encrypted using pub(x) can be decrypted using pub(x).

C - The person x knows both priv(x) and pub(x).

Which of the above statements is/are correct?

(1) A only (2) C only (3) A and B only

(4) A and C only (5) B and C only



23. Local Area Network (LAN) has 500 network devices. What is the most appropriate subnet mask for this computer network?

(1) 255.255.255.0 (2) 255.255.255.128 (3) 255.255.255.192
(4) 255.255.255.224 (5) 255.255.254.0

First, convert 500 to binary = 1 1111 0100 → We can see that 9 bits are used to represent 500. These 9 bits are the host bits. Then that means there are 23 net bits in the address (32-9).

When writing the subnet mask all the host bits will be 0 and all the net bits will be 1.

24. Consider the following statements about compilers and interpreters used in programming languages:

A - Compilers/interpreters are not required to execute a program written in assembly language.
B - Compilers are not essential to execute a program in machine code.
C - An executable program is translated into a source program by a compiler.

Which of the above statements is/are correct?

(1) A only (2) B only (3) C only
(4) A and B only (5) B and C only

Compiler	Converts the whole source code to machine code
Interpreter	Converts the source code line by line to machine code
Assembler	Translates assembly language to machine language

A	Incorrect	Programs written in assembly language cannot be executed without converting to machine language.
B	Correct	A program which is already is machine language does not need to be compiled again
C	Incorrect	The compiler converts the source program to an executable program. Not the other way around

25. A web browser running on a client computer A renders a web page in a web server running on a computer B. Which of the following is **not** a factor that affects the speed of rendering?

(1) Size of images in the web page (2) Number of colours in the web page
(3) Speed of the client computer (4) Efficiency of the web browser software
(5) Number of users in the network

26. Consider the following statements about Dynamic Random Access Memory (DRAM):
A - Periodic refreshing is required for DRAM.
B - Registers in the processor are made of DRAMs.
C - Memory density of DRAM is higher than that of static RAM.
Which of the above statements is/are correct?
(1) A only (2) B only (3) A and B only
(4) A and C only (5) B and C only

DRAM	SRAM
High power consumption	Low power consumption
Simple structural complexity (capacitor + transistor per bit)	Complex structural complexity (4 – 6 transistors per bit)
Low cost	High cost
High memory capacity	Low memory capacity
Used for RAM	Used for Cache memory and Registers
Requires a memory refreshment circuit	

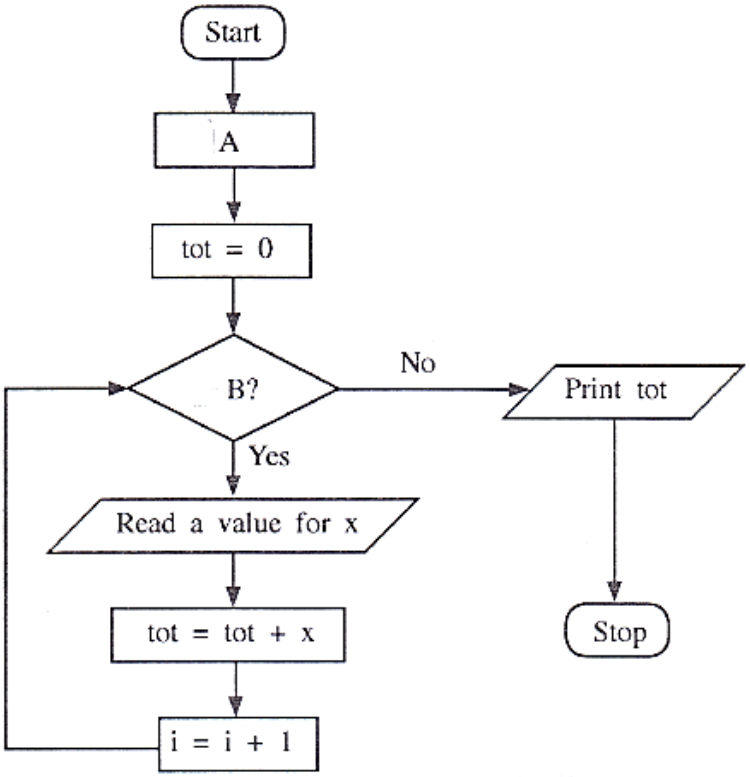
27. "Employees of modern organizations perform their duties from home." Which of the followings best describes the above statement?
(1) Social networking (2) Telecommuting (3) Instant messaging
(4) Office automation (5) Blogging

(1) Social networking	Uses internet-based social media platforms to connect with friends, family or peers.
(2) Telecommuting	The practice of working from home, making use of the internet, email, and the telephone
(3) Instant messaging	A set of communication technologies used for text-based communication between two (private messaging) or more (chat room) participants over the Internet or other types of networks
(4) Office automation	Using robots instead of using human labor
(5) Blogging	The process of creating blog posts and publishing them on a website.

28. Consider the following statements about flowcharts:
A - A flowchart is a pictorial representation of an algorithm.
B - A flowchart may have more than one 'stop' or 'end' termination symbols.
C - Algorithms can be represented only by using flowcharts.
Which of the above statements is/are correct?
(1) A only (2) B only (3) C only (4) A and B only (5) B and C only

A	Correct	
B	Incorrect	There is only one stop/end termination symbol in a flowchart
C	Incorrect	Algorithms can be represented using pseudo codes, programming languages and such.

29. The algorithm represented by the following flowchart reads 5 numbers and prints the sum of them.



In order to execute the above flowchart correctly, A and B should be replaced by ..... respectively. Which of the followings is suitable to fill the blank in the above statement?

(1) i = 0 and i ≤ 5 (2) i = 1 and i = 5 (3) i = 0 and i > 5
(4) i = 1 and i ≤ 5 (5) i = 1 and i ≥ 5

We have to iterate this loop 5 times. If we chose..

Answer (1) → Then the loop will iterate 6 times

Answer (2) → As the condition is false the loop will stop executing by printing tot as 0

Answer (3) → As the condition is false the loop will stop executing by printing tot as 0

Answer (4) → Then the loop will iterate 5 times correctly

Answer (5) → As the condition is false the loop will stop executing by printing tot as 0

30. Which of the following Python programs computes the sum of five given integers?

(1)
```
i = 1
tot = 0
while i > 5:
    x = int(input())
    tot = tot + x
    i = i + 1
print(tot)
```

(2)
```
i = 1
tot = 0
while i <= 5:
    x = int(input())
    tot = tot + x
    i = i + 1
print(tot)
```

(3)
```
i = 1
tot = 0
while i == 5:
    x = int(input())
    tot = tot + x
    i = i + 1
print(tot)
```

(4)
```
i = 0
tot = 0
while i > 5:
    x = int(input())
    tot = tot + x
    i = i + 1
print(tot)
```

(5)
```
i = 0
tot = 0
while i <= 5:
    x = int(input())
    tot = tot + x
    i = i + 1
print(tot)
```

31. Consider the following Python statement:

```
temp = [23,45,2,-2,0][:2:]
```

What would be the value of the variable **temp** after executing the above statement?

(1) 23,45 (2) [23,45] (3) 23,2 (4) [23,2] (5) [23,2,0]

Index	0	1	2	3	4
Value	23	45	2	-2	0

[start index : stop index : difference(step)]

temp = [23,45,2,-2,0] [:2:] → Here, only the index we have to stop is mentioned. Then the start will be from the 0th index by default. Therefore, the values from index 0 will be printed and will stop printing when reaching index 2. (The value in index 2 will not be printed)

32. Which of the following statements is an example for an essential non-functional requirement of an Internet banking system?

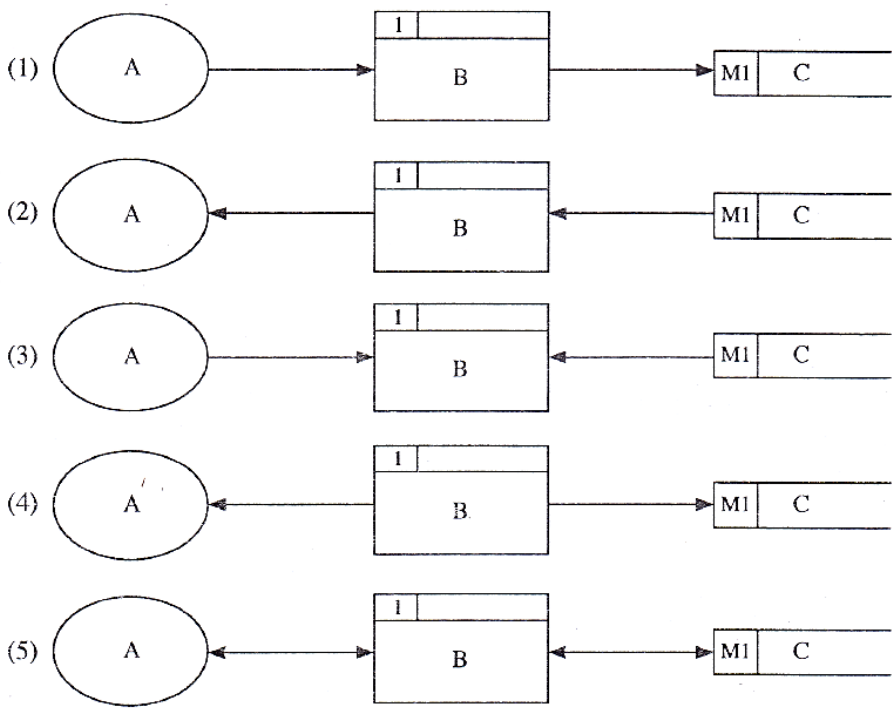
(1) System shall facilitate its users to open accounts.
(2) System shall facilitate its users to check account balance.
(3) System shall use a 256-bit encryption for all communications.
(4) System should facilitate its users to order cheque books.
(5) System should be able to render information on all popular web browsers.

Functional requirements	Non-functional requirements
Requirements which are **expected** from the system	Requirements which describe how the system work / requirements which enhance the quality of the system
Essential	**Nice to have**
It is a **must to have** to fulfill what is expected from the system	It would be better to have to what is expected from the system

33. Which of the following is the most appropriate example for a **manual temporary** data store?

(1) A file tray (2) A cardboard file (3) A file cabinet
(4) A data file in a hard disk (5) A temporary data file in a hard disk

34. Which of the following **high-level** data flow diagrams is correct with respect to the rules on data flow modelling?



DFD Designing Rules

1. Each process should have at least one input and an output
2. Each data store should have at least one data flow in and one data flow out
3. Data stored in a system must go through a process
4. All the processes in a DFD go to another process or a data store.
5. Data can flow directly between → Two external entities, An external entity and a process, Two processes, A process and a data store
6. A direct data flow can NOT exist between → An external entity and a data store, Two data stores
7. Processes and data stores must NOT → Originate data, Be dead ends

35. Which of the following statements is correct with respect to a scanner?
(1) A scanner is a software which scans a printed document and converts them into digital images.
(2) A scanner is an output device of a computer.
(3) The optical character reader (OCR) software is an essential component of a scanner.
(4) A scanner is an input device of a computer.
(5) Scanners are used to store moving pictures in digital form.

- Consider the following relation to answer questions **36** and **37**:

book (BN, title, publisher, version, author1, author2, author3)
where BN is a unique code.

36. Which of the following statements is correct with respect to the above relation?
(1) It is in zero normal form.
(2) It is in the 1st normal form.
(3) It is in the 2nd normal form.
(4) It is in the 3rd normal form.
(5) Its normal form cannot be decided.

Zero Normal Form	Not yet normalized. Have repeating attributes (such as author1, author2, author3)
First Normal Form	Primary key is repeated but there is a composite primary key ➔ partial dependency
Second Normal Form	Np partial dependencies. Has transitive dependencies ➔ non-prime attribute/ column doesn't depend on the primary key but depends on another non-prime attribute
Third Normal Form	Fully functional dependencies

37. Which of the followings can be a candidate key of the above relation?
(1) BN (2) publisher (3) version (4) author1 (5) author2

Primary Key	• Uniquely identify all table records , not null • A table **can** be created without the primary key
Foreign Key	• Link two tables together • Refers to the primary key of a different table • A foreign key can contain duplicate values
Alternate Key	• The key that has not been selected to be the primary key, but are candidate keys • If a table consists of only one candidate key then it becomes the primary key. Then there will be no alternate key
Compound Key	• A combination of two or more columns in a table that can be used to uniquely identify each row in the table (can be a primary key)
Candidate Key	• A column or set of columns in a table that can uniquely identify any record without referring to any other data (can be a primary key) • Each table may have one or more candidate keys but one primary key

38. Which of the followings is correct with respect to the term 'domain' in a relational database?
(1) It is a set of possible names for a table.
(2) It is a set of possible names for an attribute.
(3) It is the collection of all possible primary keys.
(4) It is the set of all possible values of an attribute.
(5) It is the collection of foreign keys.

In a relational database, the term "domain" typically refers to the set of allowable values for a specific attribute or column in a database table. In other words, it defines the data type and constraints for a particular column, specifying what kind of data can be stored in that column..

39. Which of the following Python code segments is syntactically **incorrect**?

(1)
```
if x > 0:
    y = 2
```

(2)
```
if x > 0:
    y = 2
else:
    y = 3
```

(3)
```
if x > 10:
    y = 1
elseif x > 5:
    y = 2
```

(4)
```
if x > 10:
    y = 1
elif x > 5:
    y = 2
else:
    y = 3
```

(5)
```
if x > 10:
    y = 1
else:
    if x > 5:
        y = 2
    else:
        y = 3
```

In Python, there is no `elseif` keyword.

40. Consider the following Python program segment:

```
d1 = "(1,2,3)"
d2 = (1,2,3)
d3 = [1,2,(1,2)]
```

What would be the types of variables d1, d2 and d3 respectively after the execution of the program segment?

(1) tuple, tuple, tuple
(2) string, tuple, tuple
(3) char, tuple, list
(4) string, tuple, list
(5) tuple, tuple, list

String → within double quotations " "
Tuple → within brackets ( )
List → Within square brackets [ ]

41. Which of the following Python statements is syntactically **incorrect**?

(1) a, b = 10, 15
(2) a = b = 1, 2
(3) a = 1, 2
(4) a, b = 2, (3, 5)
(5) a, b = 2, 3, 5

```
a,b=2,3,5
print (a)
print (b)
```

```
Traceback (most recent call last):
  File "D:/USER/Desktop/test.py", line 1, in <module>
    a,b=2,3,5
ValueError: too many values to unpack (expected 2)
>>>
```

42. What will be the value of the variable x, after executing the following Python statement?

$x = 3 - 4 * 6 / 3 + 12 / 4 * 3$

(1) -5.0 (2) -4.0 (3) -1.0 (4) 4.0 (5) 5.0

```
X = 3 – 4 * 6 / 3 + 12 / 4 * 3
X= 3 – 24 / 3 + 3.0 * 3
X = 3 – 8.0 + 9.0
X= - 5.0 + 9.0
X = 4.0
```

43. What is the two's complement representation of 89_{10}?

(1) 01111011 (2) 01011001 (3) 10100111 (4) 01001001 (5) 01011101

When representing a positive decimal in two's complement, it is only required to convert it to binary and write it in 8 bits.

If the decimal is negative we have to convert it to binary first. Then, we have to invert all and add one to the last bit.

44. Which of the followings is correct about open systems?

(1) All inputs required for an open system is available within the system itself.
(2) Open systems cannot interact with other systems.
(3) Open systems do not need other systems for its operations.
(4) Humans can make open systems.
(5) All the natural systems are open systems.

Open System	Closed System
• Interacts with its environment through giving and receiving data/ information/ material/ energy • Inputs are taken from the system environment and outputs are given to the environment as well example → A solar power generation system	• All interaction and knowledge is transmitted within the closed system only • Inputs are taken within the system boundary and outputs are given within the system boundary as well example → Human blood circulatory system

45. Which of the followings is **not** an application of artificial intelligence?
(1) Self–learning robots
(2) Expert advisory systems for professionals
(3) Smartphones
(4) Recommender systems on e-commerce platforms
(5) Handwriting recognition systems

46. Which of the followings is correct with respect to the output of an SQL statement?
(1) It generates an error if no data is available in the tables referred in the SQL statement.
(2) It is always a table.
(3) The order of the attributes in the output should be the same as the order of attributes in the table definition.
(4) Outputs cannot be produced if the primary keys are not defined.
(5) Names of the attributes in the output should be the same as the names in the table definition.

47. The length of an attribute defined using a Data Definition Language (DDL) statement is a/an ..... constraint.
Which of the followings is the most appropriate to fill the blank in the above statement?
(1) primary key (2) foreign key (3) null value (4) domain (5) application

Domain Integrity Constraint	Definition of a valid set of values of an attribute Example→ Age INT, Name VARCHAR (300) NOT NULL
Entity Integrity Constraint / Primary Key Constraint	Uniquely identifies each record in a database table. Cannot be NULL
Referential Integrity Constraint / Foreign Key Integrity Constraint	Is specified between two tables and is being used to maintain consistency among rows between the two tables

48. Consider the following table in a relational database:

student	name	telephone	zscore
S0001	Dananjaya	0711118337	1.8
S0002	Saluka	0712227447	1.9
S0003	Upul	0713333882	2.0
S0004	Priyankara	0714445225	1.9
S0005	Supun	0715556446	2.1

What is the minimum number of SQL statements required to update all the values of the attribute zscore in the above table to 2.1?
(1) 1 (2) 2 (3) 3 (4) 4 (5) 5

49. Consider the following statements:

A - Software Agents are computer programs.
B - Some computer viruses could be considered as software agents.
C - All software agents have user interfaces.

Which of the above statements is/are correct?

(1) A only (2) A and B only (3) A and C only
(4) B and C only (5) All A, B and C

Characteristics of a Software Agent

- Autonomy - should be able to perform problem-solving tasks without the direct intervention of humans or other agents
- Social Ability – should be able to interact, with other software agents and humans in order to complete their tasks
- Responsiveness/ Reactiveness - should perceive their environment (which may be the physical world, a user, a collection of agents, the INTERNET, etc.) and respond in a timely fashion to changes which occur in it. (Time period they have to respond isn't restricted)
- Proactiveness - should not simply act in response to their environment, they should be able to exhibit opportunistic, goal-directed behavior and take the initiative where appropriate.
- Learn Ability - should be able to learn through experiences
- All the agents doesn't have a user interface

50. Which of the following Python functions is syntactically **incorrect**?

(1)
```
def fun(x,y):
    return x
```

(2)
```
def fun():
    return 5
```

(3)
```
def fun(x,y):
    pass
```

(4)
```
def fun:
    return 5
```

(5)
```
def fun(x,y=5):
    return y,x
```

A function always have to accept a parameter