

Advanced Level – Information and Communication Technology

2012 MCQ Past Paper

1. Who is considered as the first computer programmer?

- | | |
|-------------------------|--------------------------|
| (1) John Von Neumann | (2) Blaise Pascal |
| (3) Charles Babbage | (4) Ada Augusta Lovelace |
| (5) John Presper Eckert | |

- | |
|--|
| • John Von Neumann – Introduced Von Neumann Architecture |
| • Blaise Pascal – Invented Pascaline |
| • Charles Babbage – Father of computing |
| • Ada Augusta Lovelace – First computer programmer |
| • John Presper Eckert – Co-inventor of ENIAC |

2. Which of the following technologies has been used in the Third Generation Computers?

- | | |
|-------------------------------|-----------------------------------|
| (1) Integrated Circuits (ICs) | (2) Large Scale Integration (LSI) |
| (3) Micro Processors | (4) Transistors |
| (5) Vacuum Tubes | |

- | |
|--|
| • Vacuum Tubes - First Generation |
| • Transistors - Second Generation |
| • Large Scale Integrated Circuits – Third Generation |
| • Micro Processors, Very Large Scale Integrated Circuits – Fourth Generation |
| • Ultra Large Scale Integration Technology – Fifth Generation |

3. “The data in _____ is read by using the Laser technology ”

Which of the following is most appropriate to fill the blank in the above statement?

- | | | |
|------------------------|-------------------|------------------|
| (1) Floppy Disk | (2) Magnetic Tape | (3) Compact Disk |
| (4) Magnetic Hard Disk | (5) Flash Memory | |

- | |
|---|
| • Floppy Disk – The information retrieved and written onto a floppy disk is controlled by the process of magnetic encoding |
| • Magnetic Tape – Magnetic tape recording works by converting electrical audio signals into magnetic energy |
| • Compact Disk - The data is read by using laser technology |
| • Magnetic Hard Disk - The data on a magnetic disk is read and written using a magnetization process |
| • Flash Memory – Uses electrical circuits to log data |

4. Consider the following statements about data and information.

- A The symbols '101011101
- B Numbers, characters and images
- C - Facts derived from a study

D - Facts that have been processed in such a way as to be meaningful to the person who receives it

Which of the above statements best describe/s 'information'?

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

Characteristics of data and information

Data	Information
Just raw facts (unorganized)	Data organized in a meaningful way

5. The binary number equivalent to 37_{10} is

- (1) 0100101
- (2) 0100111
- (3) 0100100.
- (4) 0110110.
- (5) 0110111

- Binary → Decimal : Divide the number by 2

6. In computer networks, acronym DHCP stands for

- (1) Dynamic Host Control Protocol.
- (2) Dynamic Host Configuration Protocol.
- (3) Domain Host Configuration Protocol.
- (4) Dynamic Host Configuration Practice.
- (5) Dynamic Host Control Parameters.

- DHCP stands for Dynamic Host Configuration Protocol

7 Which of the following statements is correct about relational databases?

- (1) The primary key of a table is selected from alternate keys.
- (2) Duplicate values are not allowed in a foreign key field of a table.
- (3) A table cannot be created without a primary key.
- (4) A foreign key of a table should be the primary key of another table.
- (5) A table should have alternate keys.

Primary Key	<ul style="list-style-type: none">• Uniquely identify all table records , not null• A table can be created without the primary key
Foreign Key	<ul style="list-style-type: none">• Link two tables together• Refers to the primary key of a different table• A foreign key can contain duplicate values
Alternate Key	<ul style="list-style-type: none">• 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
Candidate Key	<ul style="list-style-type: none">• 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

8. What is the function of a DNS in a Computer Network?
- | | |
|---|---|
| (1) Assigns IP addresses | (2) Translates domain names to IP addresses |
| (3) Protects a network from viruses | (4) Provides directory services to users |
| (5) Connects multiple computer networks together. | |

Function of DNS Server

When users type domain names into the URL bar in their browser, DNS Servers are responsible for translating those domain names to numeric IP addresses leading them to the correct website

(1) Assigns IP addresses	Function of DHCP server
(2) Translates domain names to IP addresses	Function of DNS server
(3) Protects a network from viruses	Function of firewall
(4) Provides directory services to users	Function of a directory server or name server
(5) Connects multiple computer networks together	Function of a network switch

9. The command that can be used to check the network configuration of a computer is
- | | | | | |
|-----------------|--------------|---------------|----------------------|-----------|
| (1) traceroute. | (2) netstat. | (3) hostname. | (4) <u>ipconfig.</u> | (5) ping. |
|-----------------|--------------|---------------|----------------------|-----------|

(1) traceroute	Used to track in real-time the pathway taken by a packet on an IP network from source to destination
(2) netstat	Displays the contents of various network-related data structures for active connections
(3) hostname	Displays the name of the current host system
(4) ipconfig	Displays all current TCP/IP network configuration values and refreshes DHCP and DNS settings
(5) ping	Allows a user to test and verify if a particular destination IP address exists and can accept requests in computer network administration

10. Human blood circulatory system can be classified as a
- (1) natural and closed system.
 - (2) artificial and closed system.
 - (3) artificial and open system.
 - (4) natural and open system.
 - (5) natural and artificial system.

Open System	Closed System
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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

Natural System	Artificial System
<ul style="list-style-type: none"> • Created by nature 	<ul style="list-style-type: none"> • Manufactured by humans

- 11 Which of the following best describes a non-functional requirement of a mobile phone?
- (1) Sending a short message
 - (2) Receiving a telephone call
 - (3) Selecting a number from the contact list
 - (4) Making a telephone call
 - (5) Having one year warranty for the battery

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

(1) Sending a short message	A functional requirement
(2) Receiving a telephone call	A functional requirement
(3) Selecting a number from the contact list	A functional requirement
(4) Making a telephone call	A functional requirement
(5) Having one year warranty for the battery	A non-functional requirement

12. An electronic washing machine can be best considered as a/an
- Information system.
 - Automated system.
 - Expert system.
 - Management support system.
 - Transaction processing system.

	Meaning:	Examples:
Information System	Is an organizational system designed to collect, process, store and distribute information	Laptops, databases, networks
Automated System	An integration of sensors, controls, and actuators designed to perform a function with minimal or no human intervention	Automated driving system, Electronic washing machine
Expert System	A type of software which uses databases of expert knowledge to offer advice or make decisions in such areas as medical diagnosis	
Management support system	A system designed to manage information within an organization	Human resource management, Sales & Marketing management,
Transaction processing system	Provides way to collect, process, store, display, modify or cancel transactions	Sales of organization to their customers, Payments to their suppliers, ..

13. Which is the **correct** mark up for a comment in an HTML document?
- <! Districts of Sri Lanka
 - <!-- Districts of Sri Lanka -->
 - //Districts of Sri Lanka
 - <* Districts of Sri Lanka *>
 - <! Districts of Sri Lanka !>

<!--This is a comment. -->

- There is an exclamation point (!) in the opening tag, but **not** in the closing tag.
- Comments are not displayed in the browser.

14. The required minimum and maximum working hours per day for an employee in a factory are 5 and 12 respectively. Which of the following is the most appropriate validation check to ensure that the integer value entered as the working hours, through a web-based form, is correct?
- Range
 - Length
 - Type
 - Numeric value
 - Number of digits

Range Check	<ul style="list-style-type: none"> Ensures that data is within a certain range Are useful for dates, numbers and even strings
Length Check	<ul style="list-style-type: none"> A quick and easy way for checking an attribute for values of the appropriate length
Type Check	<ul style="list-style-type: none"> Ensure that the correct <i>type</i> of data is entered
Numeric value	<ul style="list-style-type: none"> Ensures whether the data contains only numbers
Number of digits	<ul style="list-style-type: none"> Whether single numbers used to represent values

15. $144_8 + 175_8 =$

(1) 225_8 (2) 341_8 (3) 441_8 (4) 531_8 (5) 314_8

16. Which of the following statements is correct about IP addresses and subnet masks?
- (1) 192.248.32.3 is a Class B IP address.
- (2) A network with a subnet mask 255.255.255.248 can accommodate six hosts.
- (3) An IP address consists of 16 bits.
- (4) 10.32.1.5 is a Class C IP address.
- (5) 255.255.255.0 is a Class C IP address.

Class	IP address range (1 st Octet)	Network mask
A	0 - 127	255.0.0.0
B	128 – 191	255.255.0.0
C	192 - 223	255.255.255.0

Answer(1) - It is a Class C IP address

Answer(2) - 255.255.255.1111 1000 → $2^3 = 6$ host bits

Answer(3) - An IP address consists of 32 bits

Answer(4) - It is a Class A IP address

Answer(5) - It is network mark of class C

- 17 The network layer of the OSI reference model provides
- (1) error correction. (2) inter-process communication.
- (3) flow control. (4) routing of data packets.
- (5) error detection.

Physical Layer	Provides a physical medium through which bits are transmitted
Data link Layer	Used for error free transfer of data frames. (Error detection and correction), controls access to the shared medium to prevent collisions
Network Layer	Is responsible for moving the packets from source to destination (routing)
Transport Layer	Provides reliable message delivery from process to process
Session Layer	Used to establish, manage and terminate the sessions
Presentation Layer	Is responsible for translation, compression and encryption
Application Layer	Provides the services to the user

18. The type of operating system that is most suitable for an automated air traffic control system is

 - (1) multi-user multi-tasking.
 - (2) single-user multi-tasking.
 - (3) real time.
 - (4) single-user single-tasking.
 - (5) multi-threading.

	Explanation	Examples
Multi-user multi-tasking	Multiple users. Allows to use the computer's resources simultaneously	Unix, VMS, Mainframe Operating systems
Single user multi-tasking	One user. Different tasks at a time	Windows, Mac OS
Real time	Quickly processes data without buffer delays	Satellite systems, Airbag control system
Single-user single-tasking	One user. One task at a time	
Multi-threading	Executes different parts of a program (thread) simultaneously	word (spell check, auto save, word count..)

19. What is the result of evaluating the Python expression `10 % 3`?
(1) 0 (2) 1 (3) 2 (4) 3 (5) 10

% → remainder

20. Consider the following pseudo code:

```
Begin  
    total = 0  
    For count = 1 To 10  
        If (count is odd) Then  
            total = total + count  
        EndIf  
    Next count  
    Display total  
End
```

What is the output of the above pseudo code?

- (1) 10 (2) 15 (3) 20 (4) 25 (5) 55

total = 0	count=1 To 10	Is (count is odd) ?	total = total + count	Next count (count= count + 1)	total
0	count=1	Yes	1 = 0 + 1	2	
	count=2	No	-	3	
	count=3	Yes	4=1+3	4	
	count=4	No	-	5	
	count=5	Yes	9=4+5	6	
	count=6	No	-	7	
	count=7	Yes	16=9+7	8	
	count=8	No	-	9	
	count=9	Yes	25=16+9	10	
	count=10	No	-	11	
	count=11	-	-	-	25

21. Consider the following models:

- A Network
- B Waterfall
- C - Relational

Which of the above is a/are database model/s?

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

Database models	<ul style="list-style-type: none">• Relational Model• Network Model• Entity-relationship model
System development lifecycle models	<ul style="list-style-type: none">• Waterfall• Spiral• Agile• RAD

22. Consider the following statements about **Relational Databases**:

- A A table is considered as an object.
- B A column of data in a table is called a field/an attribute of that table.
- C - A row of data in a table is called a record.

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.

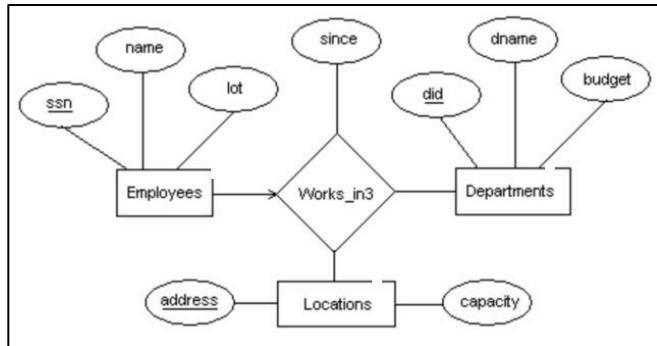
Name	Age	Country
Jane	11	England
Percy	17	America
Jason	16	America

23. Consider the following statements with respect to ER diagrams:

- A - A relationship in an ER diagram can be implemented as a table in a relational database.
- B - A relationship may have attributes attached to it.
- C - Only two entities can be attached to a relationship.

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.



In this ER diagram, Department is an **entity**. 'did', 'dname' and 'budget' are **attributes of this entity**. 'Works_in3' is the **relationship**. As we can see an attribute named 'since' is attached to the relationship.

Also, all the three entities are attached to the same relationship

24. Consider the following relation:

student(stdNo, name, address, nicNo, date_of_birth)

Which of the following SQL (Structured Query Language) statements on the student relation is syntactically correct?

- (1) select * * from student
- (2) select all from student
- (3) select * from student
- (4) select stdNo.name from student
- (5) select stdNo; name from student

Answer (1) – Incorrect – Using two asterisks is incorrect

Answer (2) – Incorrect – Using 'all' to select all records is incorrect

Answer (3) – Correct – Using one asterisk is the correct way to select all records from a table

Answer (4) – Incorrect – There is a full stop between stdNo and name. If we want to select data of those two attributes, we have to use a comma between the attributes

Answer (5) – Incorrect – There is a semicolon between the attributes

25. Consider the following database operations:

- A Remove records from a table
- B - Add new data to a table
- C Modify the existing data in a table
- D Retrieve data from a table

"The SQL statements should be used to perform the database operations A, B, C and D respectively "

Which of the following is most appropriate to fill the blank in the above statement?

- (1) delete, select, update and insert
- (2) delete, insert, select and update
- (3) select, delete, insert and update
- (4) insert, select, delete and update
- (5) delete, insert, update and select

Data Manipulation Language (DML)

SELECT - Retrieve data from a database

INSERT - Insert data into a table

UPDATE - Updates existing data within a table

DELETE - Delete all records from a database table

26. What would be the result if the following Boolean expression is simplified?

$$F(x, y) = \overline{xy}(\bar{x} + y)(y + \bar{y})$$

- (1) \bar{x} (2) \bar{y} (3) x (4) y (5) xy

$$\begin{aligned} & \overline{xy} (\bar{x} + y)(y + \bar{y}) \\ &= \overline{xy} (\bar{x} + y) \cdot 1 \quad (\text{Inverse Law}) \\ &= \overline{xy} (\bar{x} + y) \quad (\text{Identity Law}) \\ &= \overline{xy} \bar{x} + \overline{xy} y \quad (\text{Distributive Law}) \\ &= \bar{x} + \bar{y} \bar{x} + \overline{xy} y \quad (\text{De Morgan's Law}) \\ &= (\bar{x} + \bar{y} \bar{x}) + (\bar{x} + \bar{y} y) \quad (\text{De Morgan's Law}) \\ &= \bar{x} + \bar{x} \quad (\text{Redundancy Law}) \\ &= \bar{x} \quad (\text{Idempotent Law}) \\ & \underline{\underline{}} \end{aligned}$$

27 Which of the following Boolean expressions represents the output of the given logic circuit?

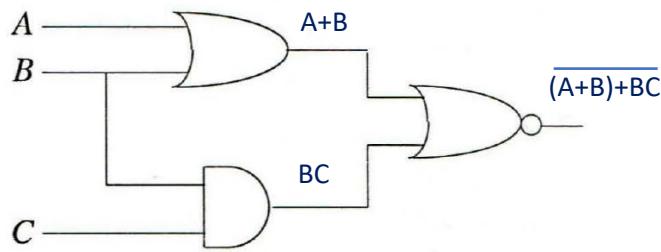
(1) $(\overline{A+B}) + (\overline{B \cdot C})$

(2) $\underline{(\overline{A+B}) \cdot (\overline{B \cdot C})}$

(3) $\underline{(\overline{A+B}) + (\overline{B \cdot C})}$

(4) $(\overline{A \cdot B}) + (\overline{B \cdot C})$

(5) $(\overline{A \cdot B}) + (\overline{B+C})$



$\underline{(\overline{A+B}) + BC}$

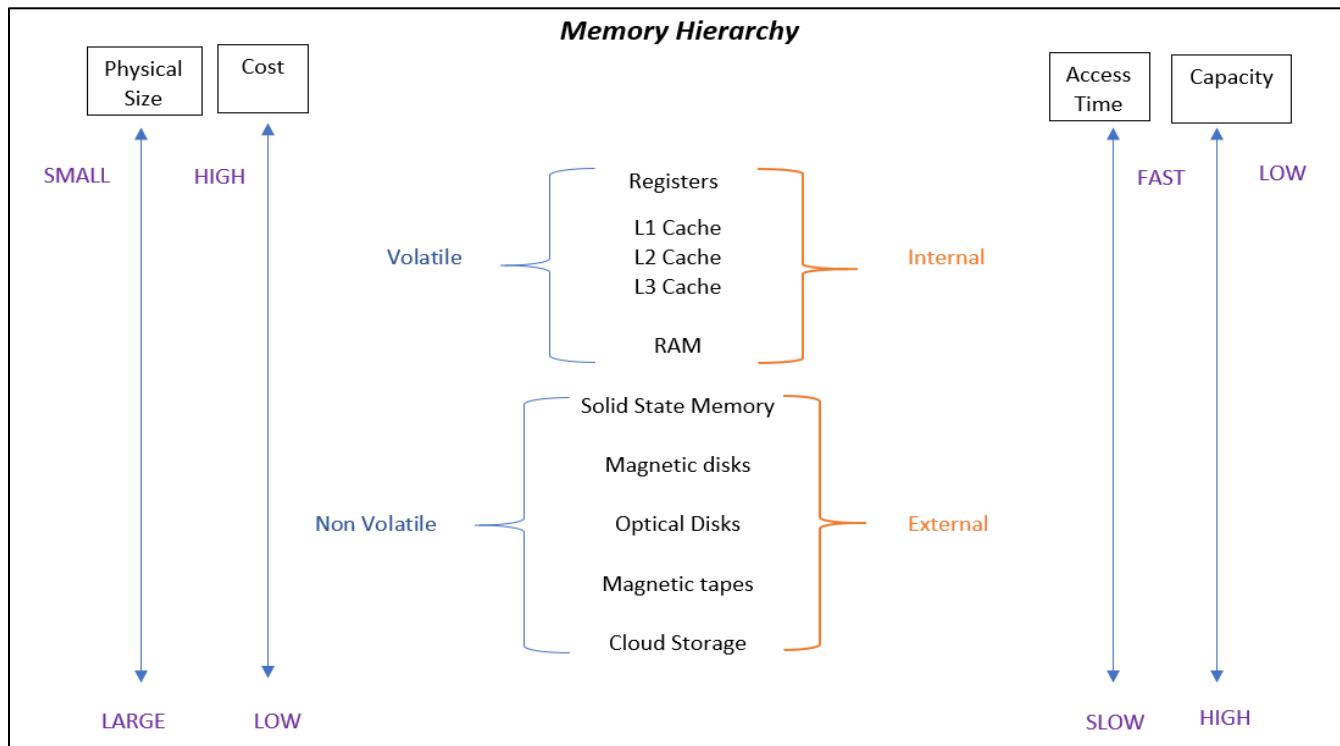
$\underline{\overline{A+B} \cdot \overline{BC}}$ (De Morgan's Law)

28. The component that decodes the instructions fetched into the CPU is called the

- (1) Primary Memory. (2) Register Unit. (3) Control Unit.
 (4) ALU. (5) Program Counter.

Primary Memory	The memory which the processor accesses first or directly
Register Unit	One of a small set of data holding places that are part of the processor
Control Unit	Will decode the instruction in the CIR and then send signals to relevant components to execute the instruction
ALU	Part of CPU which carries out arithmetic and logical operations
Program Counter	Holds the memory address of the data/instruction which is to be executed next

29. Which of the following data storage devices provides the fastest random access?
- (1) Main memory
 - (2) Magnetic disk
 - (3) CD / DVD
 - (4) Flash drive
 - (5) Hard disk



30. A person employed in an overseas country placed an on-line order to deliver a birthday present to his mother who is living in Sri Lanka, using the web-based services of a company. This transaction of ordering the birthday present could be best classified as
- (1) Consumer to Retailer.
 - (2) Consumer to Business.
 - (3) Business to Consumer.
 - (4) Business to Business.
 - (5) Employee to Business.

Types of e business transactions
B2B - Business makes a commercial transaction with another business online
B2C - Products or services are sold to the consumer by the business using Internet
C2C - One consumer sells a product or service to another consumer online
C2B - Consumer acts as the seller and the business is the buyer. Any transaction will made online
B2E - Allows companies to provide products or services to their employees online
G2C - Government provides products or services to the citizens online
B2G - Imply the relationship between a business the government. Transactions are made through internet
G2B - Government provides products or services to businesses through the internet

31. Which of the following is most cost effective and secure in transmitting private and confidential messages and notices among the employees of an organization?
- (1) Electronic notice boards (2) Teleconferencing (3) e-mail
(4) A social network (5) A website

Teleconferencing - is essentially a live interactive audio or audio-visual meeting that ensues between geographically dispersed participants

E mail - a reliable communication method that uses electronic devices to deliver messages across computer networks

A social network - are websites and apps that allow users and organizations to connect, communicate, share information and form relationships

32. Consider the following characteristics

- A Autonomous
B - Performs in dynamic environments
C - Functions restricted to a time period
D - Interacts with highly increasing information

Which of the above are characteristics of a Software Agent?

- (1) A and B only. (2) A and C only. (3) A, B and C only.
(4) A, B and D only. (5) B, C and D only.

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

33. Ubiquitous computing will be useful in applications such as

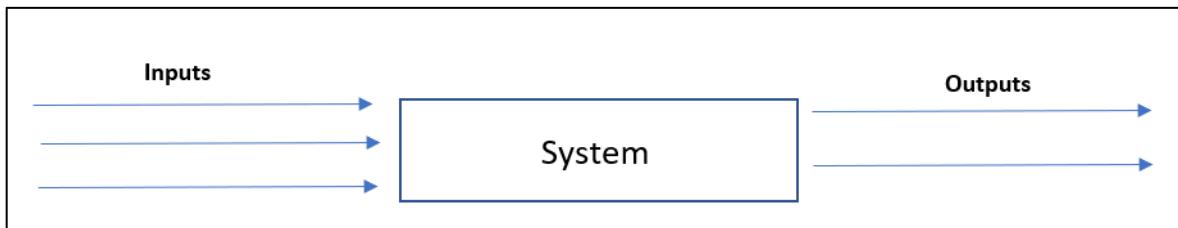
 - (1) Customisation of a domestic environment.
 - (2) Processing of large scale examination results.
 - (3) Auto Teller Machine (ATM).
 - (4) Point of Sales (POS) Machine.
 - (5) Controlling a wall clock.

Ubiquitous Computing - is a concept where computing is made to appear anytime and everywhere.

34. Consider the following terms

A - Input B - Output C - Process D - Storage

Which of the above are essential for a system?



35. "Video conferencing is best described as a/an discussion through between two or more individuals in different locations."

Which of the following is the most appropriate answer to fill the blanks in the above statement?

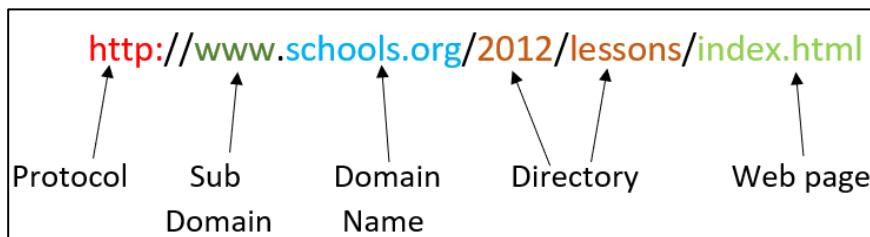
audio visual – Can visually be seen and can be heard

network – a group of two or more electronic devices which are interconnected for the purpose of exchanging data

36. Consider the following URL.

<http://www.schools.org/2012/lessons/index.html>

Which of the following indicates the protocol of the above URL?



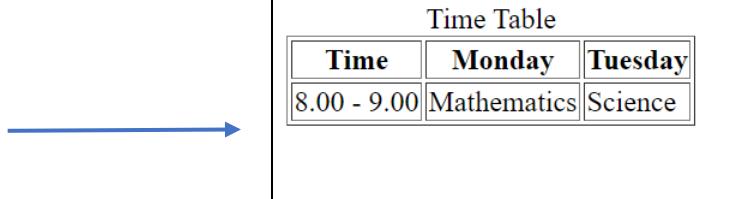
37 Which of the following HTML codes generates the table shown below?

Time Table

Time	Monday	Tuesday
8:00 - 9:00	Mathematics	Science

- Answer is (4)

Time	Monday	Tuesday
8.00 - 9.00	Mathematics	Science



38. Consider the following XML documents:

```
A  <?xml version="1.0"?>
<country>
</country>
```

B - <?xml version="1.0"?>
<name>Sri Lanka</name>
<country>
</country>

```
C - <?xml version="1.0"?>
    <country>
        <name>Sri Lanka</name>
    </country>
```

D - <?xml version="1.0"?>
 <name>
 <country>Sri Lanka</country>
 </name>

Which of the above has/have correct XML syntax?

- (1) A only. (2) D only. (3) B and C only.
(4) A, C and D only. (5) B, C and D only.

39. The HTML tag

`Sri Lanka`
renders the document named “sriLanka.html” by a browser on

- (1) the same frame.
(2) a new window.
(3) the same window.
(4) a frame named “_blank”
(5) a window named “_blank”

```
<html>
<body>
<a href="Westlife - Wikipedia.html" target="_blank">Click Here </a><br><br><br>

<a href="Westlife - Wikipedia.html" target="_self"> Click Here </a> →

</body>
</html>
```

Target value = `_self` opens the linked document in the same frame as it was clicked (default)

Target value = `_blank` opens the linked document in a new window or tab

40. Consider the following statements about HTML

- A - A well-formed HTML document should comprise two sections, a head and a body
- B - An HTML document is a computer program.
- C - White spaces, tabs and blank lines can always be used to format the display of a document.
- D - The content of the body section is displayed by browsers.

Which of the above are correct?

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

A - True

B - An HTML document is not a computer program

C - The spaces, blank lines we type in the code won't affect when it is displayed in the browser

D - True

41. The main advantage of creating more than one partition in a hard disk is the

- (1) separation of the operating system and program files.
- (2) ability to retrieve files efficiently.
- (3) easiness of making directories and subdirectories.
- (4) easiness of creating multiple users.
- (5) easiness of taking backups of selected files.

Advantages of partitioning the hard disk

- Separating valuable files to minimize corruption risk
- Allocating specific system space applications and data for specific uses.
- **Storing frequently accessed data nearby to improve performance**

42. Which of the following statements about relational databases is correct?

- (1) A value of a composite key of a table can be null.
- (2) Null values are allowed in any column of a table.
- (3) Two or more columns of a table can be combined to create the primary key.
- (4) Values of a foreign key of a table cannot be updated.
- (5) Once created, the structure of a table cannot be altered.

Answer (1) - It cannot be null as it is the primary key of the table

Answer (2) - Null values cannot be entered in primary key

Answer (3) - Composite key is a combination of two or more columns in a table that can be used to uniquely identify each row in the table

Answer (4) - Updating the values of foreign key cause errors as it is a primary key of another table

Answer (5) - A table can be altered after creating using DDL or DML

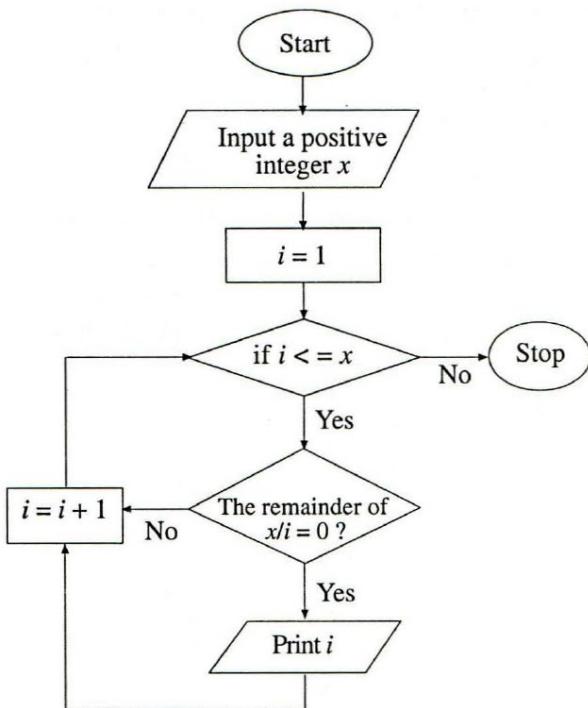
- Consider the following flow chart to answer the questions 43 and 44.

43. What flow control structure/s is/are used in the flow chart?

- Sequence only.
- Sequence and Selection only.
- Sequence and Iteration only.
- Selection and Iteration only.
- Sequence, Selection and Iteration only.

44. Which of the following statements about the algorithm represented by this flow chart is **correct** if the user inputs the value 6?

- It stops when the value of i is equal to 6.
- It prints the value 4 as one of its outputs.
- It prints the value 2 as one of its outputs.
- It prints all the integers from 1 to 6.
- It prints all the integers from 1 to 5.



Sequence	statements are executed one after another
Selection	a section of code is run only if a condition is met
Iteration	repeating steps or instructions over and over again

x	i=1	i <= x ?	remainder of x/i = 0 ?	print i	i = i + 1	stop
6	i = 1	1 <= 6 (Yes)	6%1 = 0 (Yes)	1	2 = 1 + 1	
	i = 2	2 <= 6 (Yes)	6%2 = 0 (Yes)	2	3 = 2 + 1	
	i = 3	3 <= 6 (Yes)	6%3 = 0 (Yes)	3	4 = 3 + 1	
	i = 4	4 <= 6 (Yes)	6%4 = 0 (No)	-	5 = 4+1	
	i = 5	5 <= 6 (Yes)	6%5 = 0 (No)	-	6 = 5 + 1	
	i = 6	6 <= 6 (Yes)	6%6 = 0 (Yes)	6	7 = 6 + 1	
	i = 7	7 <= 6 (No)	-	-	-	stops

45. Consider the following assignment statements:

A - a, b = "Nimal", 30

D - a = True

B - a, b = 1

E - a = true

C - a = b = 1

Which of the above are syntactically correct Python statements?

(1) A and C only.

(2) B and D only.

(3) A, C and D only.

(4) B, D and E only.

(5) C, D and E only.

Python assignments examples		
c=d=1,2 print(c) → (1,2) print(d) → (1,2)	t, w = 2,3,5 print(t)	→ Error generated as too many values to unpack
t = w = 2,3,5 print(t) → (2,3,5)		<ul style="list-style-type: none"> ❖ Strings which are assigned to a variable have to be within inverted commas ❖ True, False : Boolean values are 1,0 respectively. (First letter always have to be capital. Otherwise they won't be considered as keywords)

46. Consider the following statements about Python data types:

A - A tuple consists of ordered number of values separated by commas.

B - A dictionary comprises of an unordered set of **key : value** pairs separated by commas and enclosed in “{”, “}” brackets.

C - A value in a tuple can be modified as in a dictionary

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.

	Example	Notes
Tuple	x = ((5,9), [6,11], "Hello")	<ul style="list-style-type: none"> ❖ There can be lists, strings, tuples inside a tuple ❖ Immutable (cannot be edited after defining)
Dictionary	dic = {1: "Book", 2: "Bag", 3: "Chair"}	<ul style="list-style-type: none"> ❖ Two dictionaries cannot be added ❖ Mutable (can be edited after defining)

47 Which of the following Python program is syntactically correct?

- (1) for i in [8,9,10,11,12]:
 #Generate the multiplication table of i
 print('Multiplication table of ',i)
 for j in range(1,12):
 print(i,'*',j,'=',i*j)
 print()

(3) for i in [8,9,10,11,12]:
 #Generate the multiplication table of i
 print('Multiplication table of ',i)
 for j in range(1,12):
 print(i,'*',j,'=',i*j)
 print()

(5) for i in [8,9,10,11,12]:
 #Generate the multiplication table of i
 print('Multiplication table of ',i)
 for j in range(1,12):
 print(i,'*',j,'=',i*j)
 print():

(2) for i in [8,9,10,11,12]
 #Generate the multiplication table of i
 print('Multiplication table of ',i)
 for j in range(1,12)
 print(i,'*',j,'=',i*j)
 print()

(4) for i in [8,9,10,11,12]:
 #Generate the multiplication table of i
 print('Multiplication table of ',i)
 for j in range(1,12):
 print(i,'*',j,'=',i*j)
 print()

Answer (1) – Incorrect as indentation after the first for loop is aligned incorrectly

Answer (2) – Incorrect as “:” is missing in second for loop

Answer (3) – Correct

Answer (4) – Incorrect as print() is aligned incorrectly

Answer (5) – Incorrect as last line is incorrect

48. Consider the following incomplete Python program:

```
name = ['Kamal', 'Ruwan', 'Nimal', 'Wimal']
datacount = len(name)
for i in range(datacount - 1):
    for k in range(i+1, datacount):
        if
            name[i],name[k] = name[k],nam
```

To arrange the data items in the **name** data structure in the reverse alphabetic order, which of the following Python statements should be included at the blank line?

- (1) $\text{name}[i] < \text{name}[k]$ (2) $\text{name}[i] > \text{name}[k]$ (3) $\text{name}[i] = \text{name}[k]$
 (4) $\text{name}[i] < \text{name}[k]$, (5) $\text{name}[i] > \text{name}[k]$,

49. Consider the following Python program:

```

def fun(a):
    i, c, j = 1, a[0],0
    while i < len(a):
        if (a[i] > c):
            c = a[i]
            j = i
        i = i + 1
    return j
print (fun([5, 2, 23, 10, -3]))

```

What is the output of this program?

a	i	c (a[0])	j	len(a)	while i<len(a)	a[i]>c	c=a[i]	j=i	i=i+1	j
[5,2,23,10,-3]	1	5	0	5	1<5 (Yes)	a[1]=2 2>5 (No)	-	-	2=1+1	
					2<5 (Yes)	a[2]=23 23>5 (Yes)	c=a[2] c=23	j=2	3=2+1	
					3<5 (Yes)	a[3]=10 10>23 (No)	-	-	4=3+1	
					4<5 (Yes)	a[4]=2 -3>23 (No)	-	-	5=4+1	
					5<5 (No)	-	-	-	-	2

50. Consider the following Python program:

```

f1 = open('input.txt', 'r')
f2 = open('output.txt', 'w')
for line in f1
    data = (line.strip()).split(",")
    total = float(data[1]) + float(data[2])
    f2.write('%7s-%4d\n' % (data[0],total))
f1.close()
f2.close()

```

The content of the file “input.txt” is given below

Nimal,30,60
Saman,80,45
Upali,100,80

After executing the program, what would be the content of the file "output.txt" looks like?

- (1) Nimal
Saman
Upali

(2) Nimal – 90
Saman – 125
Upali – 180

(3) Nimal – 90.0
Saman – 125.0
Upali – 180.0

(4) Nimal,30,60,90
Saman,80,45,125
Upali,100,80,180

(5) Nimal – 90 Saman – 125 Upali – 180