

Part - B

Question 05

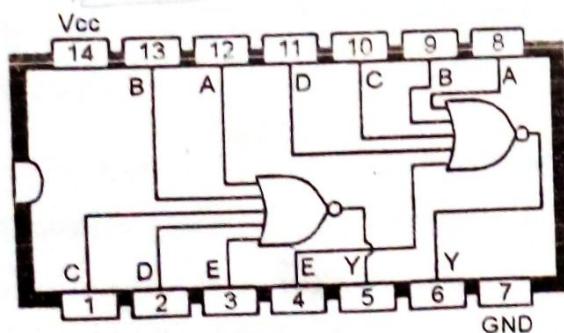
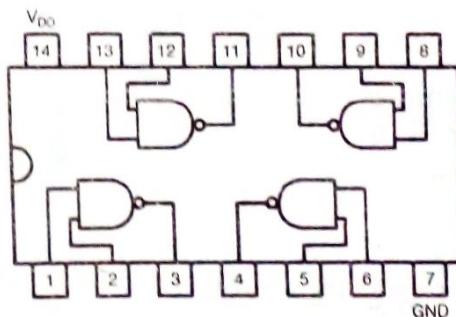
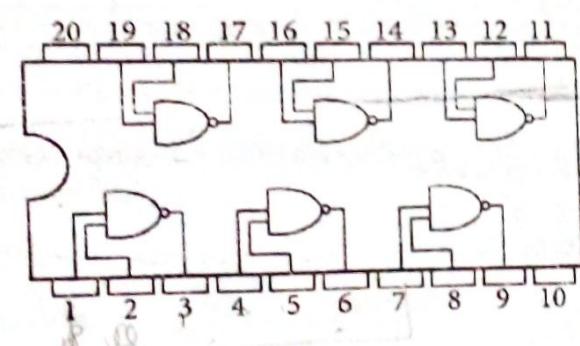
You are tasked with designing a safety monitoring system for a space station. The system uses a logic circuit to decide when to trigger an emergency alert to protect the crew and critical systems. The emergency alert (A) is triggered based on the following conditions of the oxygen (O), carbon dioxide (C), temperature (T), and radiation sensors (R).

The oxygen level is too low ($O = 1$) **and** the carbon dioxide level is too high ($C = 1$). $O \wedge C$

The temperature is outside the safe range ($T = 1$) and either the oxygen level is too low ($O = 1$) **or** the carbon dioxide level is too high ($C = 1$). $T \vee (O \wedge C)$

The radiation level is too high ($R = 1$) **and** either the oxygen level is too low ($O = 1$) **or** the carbon dioxide level is too high ($C = 1$). $R \cdot O \vee C$

- Provide a truth table for the above situation.
- Express the output using SOP Boolean expression.
- Simplify the Boolean expression for 'A' obtained in (b) above using K- Map.
- You are given the following Boolean expression: $A = PQ + QR + PR + PS + QS$. Assuming that only the following Integrated Circuits (ICs) are available, construct a logic circuit using all the logic gates from each of the three integrated circuits.



Question 06

a) You are given following Python program which represents the process of fetch-decode-execute cycle. In this program consider the meaning of following terms.

OPCODE = Instruction, OPERAND = Data, Accumulator = Register that holds data inside the ALU.

Below is the meaning of OPCODES (instructions) in this program.

- ▶ opcode 1: ADD operand to accumulator value
- ▶ opcode 2: SUB operand from accumulator value
- ▶ opcode 3: LOAD operand into accumulator value
- ▶ opcode 4: STORE accumulator value to data memory
- ▶ opcode 5: HALT

Program instruction is a combination of both OPCODE and OPERAND → Instruction(OPCODE, OPERAND)
→ Instruction(3, 10). In here memory contains five instructions.

```
memory = [      (3, 10),  # LOAD 10 into accumulator
             (1, 20),  # ADD 20 to accumulator
             (2, 5),   # SUB 5 from accumulator
             (4, 0),   # STORE accumulator to memory[0]
             (5, 0)    # HALT
           ]
data_memory = [0] # Memory location for storing the result

# Registers
program_counter = 0
accumulator = 0
halt = False

def fetch():
    global program_counter
    instruction = memory[program_counter]
    program_counter += 1
    return instruction

def decode(instruction):
    opcode, operand = instruction
    return opcode, operand

def execute(opcode, operand):
    global accumulator, halt
    if opcode == 1: # ADD
        accumulator += operand
    elif opcode == 2: # SUB
        accumulator -= operand
    elif opcode == 3: # LOAD
        accumulator = operand
```

```

        elif opcode == 4: # STORE
            data_memory[0] = accumulator
        elif opcode == 5: # HALT
            halt = True

while not halt:
    instruction = fetch()
    opcode, operand = decode(instruction)
    execute(opcode, operand)
    print("PC:"+str(program_counter), "Accumulator:"+str(accumulator), "Data
Memory:"+str(data_memory))

print("Program halted.")

```

Write the output of above program.

b) Write a Python program to perform the following validations for the user inputs mentioned in Structure question 01 part (a) (iii):

- ▶ Check whether the number of digits for the admission number and mobile number are as required.
- ▶ Check whether the value entered for the month does not exceed 12.
- ▶ Ensure that the value entered for the "Day" corresponds to the correct number of days of given month.
- ▶ Ensure that the value entered for the year is within the required range as mentioned in structure question 01 part (a) (iii):
- ▶ Ensure that the total mark is within the relevant range as mentioned in structure question 01 part (a) (iii):

If the user inputs are not in a required standard display suitable message at the end of the program

Students' information gathering form			
Admission No.:	<input type="text"/> *		
Name:	<input type="text"/> *		
Birth Date:	Day <input type="text"/>	Month <input type="text"/>	Year <input type="text"/>
Mobile:	<input type="text"/>		
Total marks	<input type="text"/> *		
<input type="button" value="Insert"/>			

Part of the program is given, and complete the remain according to the requirements mentioned above.

```

Admission=input("Input admission No:")
Name=input("Input Name:")
BirthDate=[int(x) for x in input("Input birthdate (DD-MM-YYYY):").split("-")]
Mobile=int(input("Input mobile No:"))
Total=int(input("Input total marks:"))
MonthDays[31,28,31,30,31,30,31,30,31,30,31]

```

Question 07

- (a) Consider the following requirements relevant to a database that is expected to manage Students, books and staff regarding a library.

In the school library is maintained by a librarian, Assistant librarians and clerical officers. Each library staff member has a staff id to uniquely recognize them and name (initials and last name) and their staff category. When students are borrowing the books, the date borrowed will be recorded and date returned will be derived by adding two weeks of time to the borrowing date. A student will be identified by the admission number uniquely. His or her name (initials and last name) and the address (No, Street, Town) will be recorded when acquiring the membership. Each book in the library is maintained by one of the staff members. Each book has an ISBN to recognize them uniquely and its name and author/s name needs to be stored.

- I. Draw an ER diagram for the above scenario showing entities, attribute and correct cardinality ratios including key attributes underlying.
 II. Derive the relational schema from the above ER diagram

- (b) Following table shows the data about an employee's who works in different departments for allocated number of hours. Department locations are given in the table. As a company policy One client is associated with only one employee. Consider data showed in the table and write the answers in your answer script.

<u>EmpID</u>	<u>EmpName</u>	<u>Department</u>	<u>Location</u>	<u>Working Hours</u>	<u>Client 1</u>	<u>Client 2</u>
E1	Nihal	IT	Colombo	6	Rex	Sam
E2	Ramesh	Sales	Kotte	6	Tisha	Rahal
E3	Hameed	Sales	Kotte	4	Mukesh	
E3	Hameed	IT	Colombo	2	George	

- I. What is the normal form the above table exists? justify your answer.
 II. Convert the above table in to its next normal form and show them with data.
 III. Can the table/s in above answer (II) normalized further? If so, name it/them and its/their normal forms to be.



Question 08

- (a) Explain why HTML elements used attributes in them?
- (b) Write the html code segment to load the figure at your right when the web page is loading.
- (c) Refer the following HTML output

Gender:
<input checked="" type="radio"/> Male
<input type="radio"/> Female

ICT Competition

Candidate Details

Initials :

Surname :

Gender:

Male

Female

DOB : mm / dd / yyyy

Section : 1-5

select the competition type:

New Concept Proposal Web Development
 Programming Hardware Designs

Briefly Describe your project:

Write the suitable words on your answer script against the numbers (1 to 24) displayed in the code.

* Note : The "Send" button is used to pass the details to a PHP page called "db.php" securely and "Clear" button is used to reload the page.

```

<html> <body>
<form action = " 1 " method = " 2 ">
<h1 align = " 3 "> ICT Competition </h1>
< 4 >
< 5 >Candidate Details</ 5 >

Initials : <input type = " 6 " name = "int"/><br/>< 8 >

Surname : <input type = " 6 " name = "sur" />

<p>Gender:<br/>
<input type = " 9 " name = " 10 " value = "C"/>Male<br/>
<input type = " 9 " name = " 10 " value = "F"/>Female</p>

< 11 >DOB : <input type = "date" name = "" value = "abc"/></ 11 >

Section : < 12 name ="section">
< 13 value="pri">1-5</ 13 >
< 13 value="sec1">6-11</ 13 >
< 13 value="sec2">12-13</ 13 ></ 12 ></ 4 >

< 14 >< 15 >select the competition type:</ 15 >
< 16 > New Concept Proposal<input type = "checkbox" name="vehicle1" value="Bike"> &nbsp;
Web Development <input type = "checkbox" name="vehicle2" value="Car"> <br/>
Programming<input type = "checkbox" name="vehicle1" value="Bike"> &nbsp;
Hardware Designs<input type = "checkbox" name="vehicle2" value="Car"> </ 16 > </ 14 >

Briefly Describe your project:<br/>
< 17 name="message" 18 ="3" 19 ="50"> </ 17 >

<p><input type = "button" name = "" value = " 20 "/>
<input type = " 21 " name = "" value = " 22 "/>
<input type = " 23 " name = "" value = " 24 "/></p>
</form> </body> </html>

```

Anula Vidyalaya - Nugegoda**Grade 13 – First Term Test, May 2024****English Medium****Information & Communication Technology I****2 hours****instructions:**

- ❖ Write your **Name and class** in the space provided in the answer sheet.
- ❖ In each of the MCQ questions, pick one of the alternatives from (1), (2), (3), (4), (5) which is **correct or most appropriate** and mark your response on the answer sheet with a **cross (x)**.
- ❖ Use of calculators is not allowed.

1. What is a disadvantage of manual data handling?

- (1) Accuracy
- (2) Consistency
- (3) Redundancy
- (4) Integrity
- (5) None of above

2. What is/are the correct statement/s from the followings?

- A. Tim Berners-Lee is the founder of internet
- B. A browser is used to view a web page
- C. Web pages of the same web site has identical URLs.

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

3. “The first name and the NIC is compulsory to register on an internet service. Also, NIC should contain only numbers.”

what are the types of data validation should be carried out regarding the above statement.?

- (1) Presence Check and Range Check
- (2) Presence check and Type Check
- (3) Type check only
- (4) Type check and Range Check
- (5) presence check Only

4. What is a direct data input device from followings?

- (1) Mouse
- (2) Keyboard
- (3) MICR
- (4) Touchpad
- (5) Touch Screen

5. “Nikini uses cloud computing to develop, execute and test a program using an algorithm she designed. But she has no intention to save the program in the cloud. Initially she designed the flowchart using a software installed in her computer. Which services does Nikini uses from cloud computing?

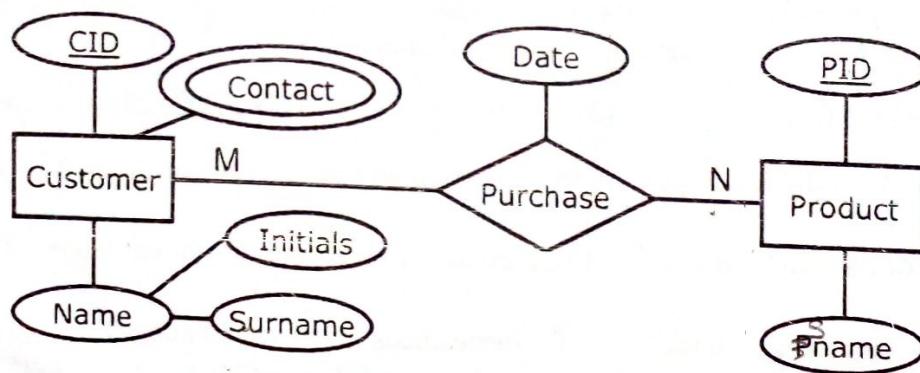
- (1) IaaS and PaaS
- (2) PaaS and SaaS
- (3) IaaS and SaaS
- (4) IaaS only
- (5) PaaS only

6. A software that helps to maintain the proper and smooth functioning of a Computer System is known as,
- Open-source software
 - Licensed software
 - Application software
 - Utility software
 - None of the above
7. Which has arranged according to the descending order of the access speed
- RAM, L1 cache, L2 Cache, L3 Cache, Hard Disk, Registers, Compact Disk
 - Registers, RAM, L1 cache, L2 Cache, L3 Cache, Hard Disk, Compact Disk
 - Registers, L1 cache, L2 Cache, L3 Cache, RAM, Hard Disk, Compact Disk
 - Hard Disk, RAM, L1 cache, L2 Cache, L3 Cache, Registers, Compact Disk
 - Registers, L1 cache, L2 Cache, L3 Cache, Hard Disk, RAM, Compact Disk
8. In fetch-execution cycle, instruction is fetched from the(a)..... will be decoded by the(b)..... before it is sent to the(c)..... for execution.

What are the most suitable words to fill the blanks in the above statement in the order of (a),(b) and (c)

- Control Unit, Random Access Memory, Arithmetic and Logic Unit
- Control Unit, Arithmetic and Logic Unit, Random Access Memory
- Random Access Memory, Control Unit, Arithmetic and Logic Unit
- Random Access Memory, Arithmetic and Logic Unit, Control Unit
- Arithmetic and Logic Unit, Control Unit, Random Access Memory

Consider the following ER diagram to answer questions from 9 to 11.



9. Which answer illustrate the correct schema for above ER diagram
- Customer(CID,Initials,Surname), Product(PID,Sname), Purchase(CID,PID,Date)
 - Customer(CID,Initials,Surname), Product(PID,Sname), Purchase(CID,PID,Date), cInfo(CID,Contact)
 - Customer(CID,Name), Product(PID,Sname), Purchase(CID,PID,Date), cInfo(CID,Contact)
 - Customer(CID,Initials,Surname), Product(PID,Sname), Purchase(CID,Date), cInfo(CID,Contact)
 - Customer(CID,Initials,Surname), Product(PID,Sname), Purchase(PID,Date), cInfo(CID,Contact)

10. Attribute "quantity" indicated the purchase quantity of a specific product done by a customer. To which component/s that this attribute needs to be connected?

- (1) Customer Entity
- (2) Product Entity
- (3) both Customer and Product Entities
- (4) Purchase Relationship
- (5) A new entity to be created called "Quantity"

11. A product that is purchased by the customers are supplied by many suppliers and each supplier supplies only one product. To which entity, that the "Supplier" entity should be connected and what is the cardinality between those entities?

- (1) Customer Entity, 1:m
- (2) Product Entity, 1:m
- (3) Customer Entity, 1:1
- (4) Product Entity, 1:1
- (5) Product Entity, m:n

Consider the following table which contains employee details and their department details to answer questions from 12 and 14.

Employee table

EmpID	Name	City	DID	Location
e1	thilak	kandy	d1	Colombo
e2	nisala	galle	d2	Kandy
e3	Simran	kurunagala	d1	Colombo

12. What is the Normal Form the above table?

- (1) 0 NF
- (2) 1 NF
- (3) 2 NF
- (4) 3 NF
- (5) Insufficient data to decide

13. The employee table has,

- (1) Unwanted repetition of data
- (2) Partial dependency
- (3) Fields that are not depending on its primary key.
- (4) Transitive Dependency
- (5) Both partial and transitive dependency

14. If the employee table can be normalized further, what is true about the next normal form of Employee table ?

- (1) The next normal form will be 1 NF
- (2) The next normal form will be 2 NF and have to normalize further to become 3 NF
- (3) The next normal form will be 2 NF which will be automatically qualified for 3 NF
- (4) The next normal form will be 3 NF
- (5) Cannot be normalized further since it is in 3 NF already

15. Select * from Student where SID = "1001" and Sname = "ragu"; what is the correct statement regarding the above sql query?. Consider SID is the primary key of the table.

- (1) This will result with a table with two columns name SID and Sname
- (2) This will result with a table with all the details of the student table
- (3) This will result with a table which contains details of students who has names as "ragu"
- (4) This will result with a table which contains details of student who has SID as "1001"
- (5) None of the above are true.

16. What is the statement/keyword which use to add a new column to a table using SQL?

- (1) select
- (2) alter
- (3) create
- (4) update
- (5) insert

17. code line 1 : <a(p).....> click me to find Chapter 1

code line 2 : <h1.....(Q).....> Chapter 1 <h2>

above, code line 1 and code line 2 describe a hyper link to "Chapter 1" from another place in the same web page. What are the suitable code segments for blanks (P) and (Q) in order?

- (1) src = "chap1", class = "chap1"
- (2) href = "chap1", id = "chap1"
- (3) href = "#chap1", id = "#chap1"
- (4) src = "#chap1", id = "chap1"
- (5) href = "#chap1", id = "chap1"

18. What is the correct HTML comment from followings?

- (1) <!-- world -->
- (2) // world //
- (3) /* world */
- (4) # world
- (5) '' world ''

19. What should be the html code to render the list shown?

- (1) Fruits
<ul type = "circle"> Apple
Red

1. Fruits

■ Apple

I. Red

- (2) Fruits
<ol type = "square"> Apple
Red

- (3) Fruits
<ul type = "square"> Apple
Red

- (4) Fruits
 Apple
<ol type = "I">Red

- (5) Fruits
<ul type = "Square"> Apple
<ol type = "I">Red

20. What is the attribute that can change the font type of the “font” element?

- (1) href (2) size (3) type (4) face (5) method

21. What would be the output of the following code

<p>Our Mother Land </p> <h2>Our Pride!!!</h2>Sri lanka

- (1) Our Mother Land

Our Pride!!!

Sri lanka

- (2) Our Mother
Land

- (3) Our Mother Land

Our Pride!!! Sri lanka

Our Pride!!!

Sri lanka

- (4) Our Mother Land

Our Pride!!! Sri lanka

- (5) Our Mother Land

Our Pride!!!

Sri lanka

22.

What is true regarding the above code segment

- A. This will show the “abc.gif” with word “pqr”
- B. The image is on the same location where the html code is.
- C. The image is inside the a folder name “..”

- (1) A only

- (4) A,B,C all

- (2) B only

- (5) None of the above

- (3) C only

23. All the header elements’ color should be set to red on a specific web page. What is the CSS type that can be used to apply these styles? (note: css style will be written only once)

- (1) External CSS

- (4) Both internal and inline

- (2) Internal CSS

- (5) Both internal and external

- (3) Inline CSS

24. Which of the following is correct example for grouping of selectors?

- (1) h1:h2{Color:blue;}

- (4) #h1 h2{Color:blue;}

- (2) h1,h2{Color:blue;}

- (5) h1.h2{Color:blue;}

- (3) h1;h2{Color:blue;}

25. What will be result of following code segment?

```
<head> <style> P {color: red; text-align: center} .ABC {color: green;} </style> </head>
<body>           <p class="ABC"> Hello </p>           <p> Sri Lanka </p>
                                         </body>
```

- (1) The word "Hello" displayed in green and "Sri Lanka" displayed in red
- (2) The word "Hello" displayed in red and "Sri Lanka" displayed in green
- (3) All the texts displayed in red
- (4) All the texts displayed in green
- (5) All the texts displayed in default color of the browser

26. What is/are true regarding an external style sheet?

- A. Should code in between `<style></style>` elements
- B. Styles are written inside a specific html element
- C. `<link>` element is used to connect the styles with a web page

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

27. What is the correct binary equivalent of 0.101_2 ?

- A. $0.A_{16}$
- B. 0.4_8
- C. 0.625_{10}

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

28. Which of the following are equivalent to 30.12_8 ?

- A. 18.28_{16}
- B. Decimal $24\frac{5}{32}$
- C. 011000.001010_2

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

29. Any color can be created by mixing red (R), green (G), and blue (B) colors in different ratios. An HTML color code is given as `#ffbb1e1`. In this code, pair of digits ff, bb, and ee represent the intensity of R, G, and B, respectively. Which of the following answers represents the R, G, B ratios in decimal?

- (1) R - 225, G - 177, B - 255
- (2) R - 177, G - 255, B - 225
- (3) R - 177, G - 205, B - 225
- (4) R - 225, G - 255, B - 177
- (5) R - 255, G - 177, B - 225

30. What is the correct 2s' complement binary representation of decimal $-127+67$, using 8-bits?

- (1) 00111100_2
- (2) 10111100_2
- (3) 11000011_2
- (4) 11000100_2
- (5) 01000100_2

- 31) A dataset contains 512 entries (lines), with each entry being a single character followed by a line break as below.

Each line break consists of two additional characters: Carriage Return (CR), which indicates the beginning of the line, and Line Feed (LF), which indicates the end of the line. How many bits are needed to encode the entire dataset using a 2-byte Unicode encoding system?

A
B
C
D
E
.
.

- (1) $2^{13} \times 3$ (2) 2^{13} (3) 2^{10} (4) $2^{10} \times 3$ (5) $2^9 \times 3$

32. Which of the following answers is correct regarding the ASCII encoding system?

- A. ASCII includes a wide range of symbols, emoticons, and special characters.
- B. No Multilingual Support
- C. Limited Character Set

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

33. Which logic gates are represented by the following logic circuits.

Figure: A

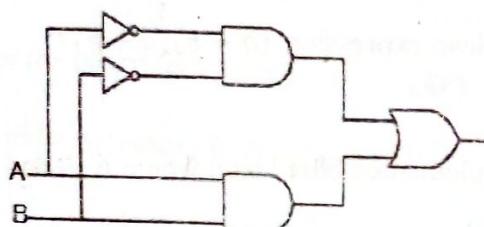
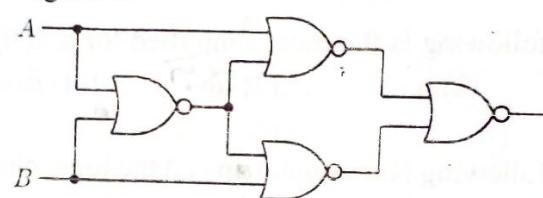


Figure: B



- (1) Both A and B represent XOR gate (2) Both A and B represent XNOR gate
 (3) A - XOR Gate, B - XNOR gate (4) A - XNOR Gate, B - XOR gate
 (5) Neither A nor B represents an XOR gate or an XNOR gate.

34. Consider the following statements regarding the addition of the following two binary values:

$$\begin{array}{r} X = 10011 \\ Y = \underline{11001} + \\ \underline{101100} \end{array}$$

- A - Adding the binary values X and Y can be done by a single full adder.
- B - Adding the binary values X and Y requires 5 full adders.
- C - Adding the binary values X and Y can be done using 4 full adders and a single half adder.
- D - Adding the binary values X and Y can be done using 9 half adders.

Which of the above statement(s) is/are true?

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

35. Consider following timing diagram regarding NOR flip-flop:

Which of the following represents the logical meaning of labels a, b, c, and d respectively?

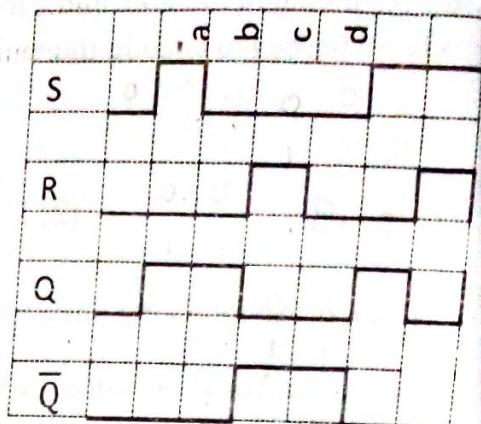
(1) a- Set 1, b- Set 0, c-Store 0, d- Invalid

(2) a- Set 0, b- Store 0, c- Set 1, d- Store 1

(3) a- Set 1, b- Store 1, c- Set 0, d- Store 0

(4) a- Invalid, b- Set 0, c- Store 0, d- Set 1

(5) a- Set 0, b- Set 1, c- Store 1, d- Store 0



36. Which of the following is true about NAND flip-flop?

(1) $Q = \overline{R} \cdot \overline{Q}, \overline{Q} = \overline{S} \cdot \overline{Q}$
 (4) $Q = \overline{\overline{S}} \cdot \overline{Q}, \overline{Q} = \overline{Q} \cdot \overline{\overline{R}}$

(2) $Q = \overline{R + \overline{Q}}, \overline{Q} = \overline{S + Q}$
 (5) $Q = \overline{\overline{S} + \overline{Q}}, \overline{Q} = \overline{Q + \overline{R}}$

(3) $\overline{Q} = \overline{\overline{S} \cdot \overline{Q}}, Q = \overline{Q} \cdot \overline{\overline{R}}$

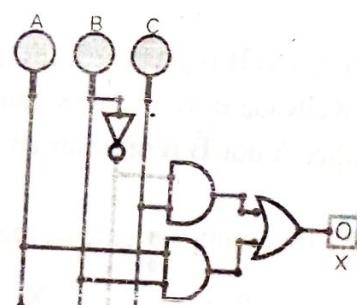
37. Which of the following is the most simplified form of the Boolean expression $(a + b)(\overline{a} + b)$?

- (1) ab (2) b (3) $\overline{a}b$ (4) \overline{a} (5) a

38. Consider the following Karnaugh map and the logic circuit implemented based on it where A, B and C are the inputs and X is the output:

		00	01	11	10	
		AB	C			
A	B	0	0	p	q	0
		1	1	r	s	1

(a) Karnaugh Map



(b) Logic circuit based on Karnaugh Map

For the logic circuit to correctly implement the logic function represented in the Karnaugh map, what should be the values of p, q, r, s?

- (1) $p=1, q=1, r=1, s=1$
 (2) $p=1, q=0, r=1, s=0$
 (4) $p=1, q=1, r=0, s=0$
 (5) $p=0, q=0, r=1, s=1$
 (3) $p=0, q=1, r=0, s=1$

39. What would be the output of the following Python code if $p = 8$, $q = 3$, and $r = 2$?

```
output = p ^ q + r * q ** r // p - r
print(output)
```

- (1) 11 (2) 12 (3) 9 (4) 3 (5) 13

0. Consider the following Python code:

What will be the output of the code above?

- (1) b
- (2) No output is provided
- (3) c
- (4) Error
- (5) a

```
x = 7
y = 10
z = 5

if x > y:
    if y < z:
        result = "a"
    else:
        result = "b"
else:
    if y > z:
        if x < z:
            result = "c"
        else:
            result = "a"
    else:
        result = "b"

print(result)
```

11. Consider the following Python code:

What will be the output of the code above?

- (1) 24
- (2) 10
- (3) 8
- (4) 25
- (5) Error

```
def outer_function(a, b, c):
    def inner_function(x, y):
        return x * y

    if a == c:
        return inner_function(a, b)
    else:
        return inner_function(b, c)

x, y, z = 4, 6, 4

result = outer_function(x, y, z)
print(result)
```

42. What would be the output of the following Python code, when it gets executed?

```
def f(word):
    return word[::-1]
```

```
w = "Python"
y = f(w)
print(y)
```

- (1) nohtyp
- (2) Python
- (3) P
- (4) nohtyP
- (5) n

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43. Consider the following Python list: `my_list = [2, 4, 6, 8, 10]`

Which option will correctly modify the list `my_list` to `[2, 4, 6, 12, 10]`?

(1) `my_list.insert(3, 12)`

(4) `my_list.pop(3)`
`my_list.append(12)`

(2) `my_list[3] = 12`

(5) `my_list[4] = 12`

(3) `my_list.append(12)`

44. Which option will correctly open the contents of the file "data.txt"?

(1) `file = open("data.txt", "r")`

(4) `file = open("data.txt", "w")`

(2) `open("data.txt", "r")`

(5) `file = open("data.txt", "a")`

(3) `open("r", " data.txt")`

45. You are given following Python list:

```
people = [("Alice", 25), ("Bob", 30), ("Charlie", 35), ("David", 40), ("Eve", 45)]
```

Which option will correctly print each name and age from the list `people`?

A - for person in people:

```
print(person[0], "is", person[1], "years old.")
```

B - for i in range(len(people)):

```
print(people[i][0], "is", people[i][1], "years old.")
```

C - for i in range(len(people)):

```
print(people[i][0], "is", people[i][1], "years old.")
```

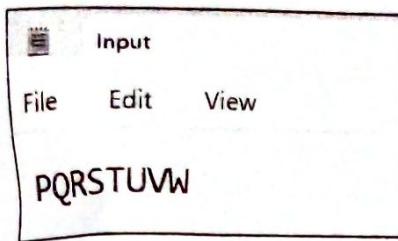
- (1) None of the above (2) B only (3) All A, B and C (4) A Only (5) A and C only

46. What will be the output of "x", after executing the following code?

```
txt = "Johnson, Michael, Jessica, Williams, Emily"
x = txt.split(',')
print(x)
```

- (1) Johnson, Michael, Jessica, Williams, Emily
 (2) JohnsonMichaelJessicaWilliamsEmily
 (3) ["Johnson", "Michael", "Jessica", "Williams", "Emily"]
 (4) [Johnson, Michael, Jessica, Williams, Emily]
 (5) "Johnson", "Michael", "Jessica", "Williams", "Emily"

47. You are given the content of 'Input.txt' below.



What will be the content of this file after executing the following code?

```
m = open('Input.txt','r+')
m.write("XYZ")
m.close()
```


8. Integrated Development Environments (IDEs) are powerful tools that provide a comprehensive suite of features to facilitate software development. Which of the following features is not included in an IDE?

- (1) Extensive Project Management Features (2) Text editor (3) multi-language support
(4) Code completion feature (5) Compiler/ Interpreter

49. 23. Who is considered the first computer programmer, for which machine did he/ she write the program, and who invented that machine?

- (1) Alan Turing, UNIVAC, John Presper Eckert
(2) Ada Lovelace, Difference Engine, Charles Babbage
(3) Ada Lovelace, Analytical Engine, Charles Babbage
(4) John von Neumann, ENIAC, J. Presper Eckert and John Mauchly
(5) Tim Berners-Lee, EDSAC, John von Neumann

50. Which answer will correctly display the output of following code ?

```
for i in range(5, 0, -1):  
    print('◆' * i)
```

-