CUET Computer Science Solved Paper-2023

1. What is the output of the following SQL Query SELECT POWER (2,3);
   (a) 9
   (b) 8
   (c) 6
   (d) 5

2. Which gives the correct match in the following?
   (A) HTML : Hyper Text Machine Language
   (B) NIC : Network Interface Card
   (C) URL : Uniform Resource Locator
   (D) URI : Uniform Resource Internet
   (E) DNS : Domain Name Server
   Choose the correct answer from the options given below:
   (a) (A) and (B) Only
   (b) (B) and (C) Only
   (c) (A) and (E) Only
   (d) (D) and (E) Only

3. A _____ is a complete program or may be a third party software to extend and modify the functionality of the browser. It is installed on host computer and used by the browser and other applications.
   (a) plug - ins
   (b) Add - ons
   (c) Cookies
   (d) Software

4. Read the code given below and answer the question
   Fileobj = open (Myfile.txt", 'w')
   lines = ["Python Programming\n", "is a simple\n", "Programming"]
   Fileobj.writelines(lines)
   print (Fileobj.read(6))
   Fileobj.close ()
   What will be output of the above code?
   (a) Python
   (b) Progra
   (c) amming
   (d) Python Programming

5. Which of the following information is maintained by a DNS server?
   (A) Hardware address (MAC)
   (B) Application Name
   (C) Session information
   (D) Domain Names
   (E) IP address
   Choose the **correct** answer from the options given below:
   (a) (A) and (B) Only
   (b) (B) and (C) Only
   (c) (D) and (E) Only
   (d) (A) and (E) Only

6. Which of the following is not a limitation of File System?
   (a) Data Inconsistency
   (b) Data Redundancy
   (c) Data Isolation
   (d) Data Independence

7. Consider the following statements relating to Python programming:
   Assertion (A) : There is no need to open a file for writing something to it.
   Reason (B) : write() function is used for writing a single string.
   Choose the correct answer from the options given below:
   (a) Both (A) and (B) are false
   (b) Both (A) and (B) are true
   (c) (A) is true and (B) is false
   (d) (A) is false and (B) is true

8. State the output of following:
   Select left (mid ('Informatics Practices', 3,8),4);
   (a) Inform
   (b) Info
   (c) form
   (d) matics

9. Which of the following clause is applicable to both Aggregate functions and single row function.
   (A) SELECT
   (B) WHERE
   (C) ORDER BY
   (D) DATE
   Choose the correct answer from the options given below:
   (a) (A) Only
   (b) (B) and (C) Only
   (c) (C) and (D) Only
   (d) (A) and (D) Only

10. Which of the following exception is raised when the result of a calculation exceeds the maximum limit for numeric data type?
    (a) Index Error
    (b) EOFError
    (c) Over Flow Error
    (d) Under Flow Error

11. Consider the following statements relating to network device switch:
    (A) : It sends signals to only selected devices.
    (B) : It does not forward the signals which are noisy or corrupt.
    Choose the correct answer from the options given below:
    (a) Both (A) and (B) are false
    (b) Both (A) and (B) are true
    (c) (A) is true and (B) is false
    (d) (A) is false and (B) is true

12. Read the code given below and answer the question.
    new_file = open ("My file.txt", 'w')
    new_file.write ("Programming")
    new_file.close()
    If the MyFile.txt contains "Python" before execution, what will be the contents of My File.txt after execution of this code?
    (a) Python Programming
    (b) Programming
    (c) Programming Python
    (d) Python

13. _____ should be added in select query to display records without repetition.
    - (a) Primary key
    - (b) Unique
    - (c) Distinct
    - (d) Alternate key

14. Match List I with List II

List I		List II	
(A)	Cartesian product	(I)	To combine the selected rows in two tables at a time
(B)	Union	(II)	To get tuples which are in first table but not in the second table
(C)	Minus	(III)	To get common tuples from 2 tables
(D)	Intersection	(IV)	To get all the rows from 2 tables regardless of whether they have same values or not

Choose the **correct** answer from the options given below:
- (a) (A)-(IV), (B)-(II),(C)-(I),(D)-(III)
- (b) (A)-(IV), (B)-(III),(C)-(II),(D)-(I)
- (c) (A)-(II), (B)-(I), (C)-(IV), (D)-(III)
- (d) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

15. Restriction on the entry into a column while inseating data in a table is known as:
    - (a) Primary key
    - (b) Domain
    - (c) Data Redundancy
    - (d) Constraint

16. Match List I with List II

List I		List II	
(A)	VARIABILITY	(I)	Difference between minimum and maximum value of data
(B)	RANGE	(II)	Difference within the group or set of data of a variable
(C)	STANDARD DEVIATION	(III)	Value that appears most number of times in a given data of any variable
(D)	MODE	(IV)	The spread or variation of values around the mean

Choose the **correct** answer from the options given below:
- (a) (A)-(I), (B)-(II), (C)-(III), (D)-(IV)
- (b) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
- (c) (A)-(II), (B)-(I), (C)-(III), (D)-(IV)
- (d) (A)-(IV), (B)-(I), (C)-(II), (D)-(III)

17. Match List- I with List- II

List - I		List - II	
(A)	Candidate key	(I)	The attribute chosen by the database designer to uniquely identify the tuples in a relation
(B)	Primary key	(II)	More than one attribution taken together as primary key to uniquely distinguish the tuples
(C)	Composite key	(III)	Used to relate two tables or relations
(D)	Foreign key	(IV)	One or more attributes that can be used to uniquely identify the tuples in the relation

Choose the **correct** answer from the options given below:
- (a) (A)-(II),(B)-(III),(C)-(I),(D)-(IV)
- (b) (A)-(III),(B)-(II),(C)-(IV),(D)-(I)
- (c) (A)-(I),(B)-(IV),(C)-(III), (D)-(II)
- (d) (A)-(IV),(B)-(I),(C)-(II), (D)-(III)

18. Evaluate the postfix expression 3 5 2 * 2/ + using stack method:
    - (a) 11
    - (b) 13
    - (c) 8
    - (d) 5

19. Consider the following relation:
    L = [6,–1,3,4,0,8]
    What will be the position of the elements of the list after third pass of Bubble sort technique if the lists to be sorted in ascending order:
    - (a) [6,3,–1,3,4,0,8]
    - (b) [–1,3,4,6,0,8]
    - (c) [–1,0,3,4,6,8]
    - (d) [6,–1,3,4,0,8]

20. Match List I with List II

List I		List II	
(A)	Constant time algorithms	(I)	Remainder method
(B)	Linear time algorithms	(II)	Does not have any loop
(C)	Quadratic time algorithms	(III)	Has a single loop
(D)	Hashing	(IV)	Has a loop within a loop

Choose the **correct** answer from the options given below:
- (a) (A)-(II),(B)-(III),(C)-(IV),(D)-(I)
- (b) (A)-(I),(B)-(II),(C)-(III),(D)-(IV)
- (c) (A)-(IV),(B)-(III),(C)-(II), (D)-(I)
- (d) (A)-(II),(B)-(I),(C)-(IV), (D)-(III)

21. Which of the following is not an example of DBMS?
    - (a) MySQL
    - (b) PostgresSQL
    - (c) MongoDB
    - (d) MSExcel

22. Match **List - I** with **List-II**

List-I		List-II	
(A)	Stack	(I)	Bubble sort
(B)	Queue	(II)	LIFO
(C)	Comparison based sorting	(III)	Linear
(D)	Searching	(IV)	FIFO

Choose the **correct** answer from the options given below:
- (a) (A)-(IV), (B)-(III), (C)-(II), (D)-(I)
- (b) (A)-(II), (B)-(IV), (C)-(I), (D)-(III)
- (c) (A)-(I), (B)-(II),(C)-(III),(D)-(IV)
- (d) (A)-(III), (B)-(I), (C)-(IV), (D)-(II)

23. A searching technique which is also called sequential search or serial search?
    - (a) Binary
    - (b) Search by hashing
    - (c) Non-Linear search
    - (d) Linear search

24. _____ refer to structured or unstructured facts that can be processed to generate meaningful _____
    What will be the right words for blank spaces respectively?
    - (a) Data, Data
    - (b) Data, Information
    - (c) Information, Data
    - (d) Information, Information

25. Which of the following is not the application of internet?
    (a) Video conferencing
    (b) Sending message using Gmail
    (c) Chatting using WhatsApp
    (d) Talking using telephone

26. When we send print commands from multiple files from the same computer or from different computers using a shared printer, then _____ is the most appropriate data structure to handle the situation.
    (a) Stack   (b) Array
    (c) Link list   (d) Queue

27. Match **List-I** with **List-II**

List-I	List-II
(A) PAN	(I) Internet
(B) LAN	(II) A mobile phone connected to the laptop using USB
(C) MAN	(III) Cable based broadband internet services
(D) WAN	(IV) Connecting computers in a computer laboratory

    Choose the **correct** answer from the options given below:
    (a) (A)-(III),(B)-(IV),(C)-(II),(D)-(I)
    (b) (A)-(II), (B)-(IV), (C)-(III),(D)-(I)
    (c) (A)-(IV), (B)-(II),(C)-(I),(D)-(III)
    (d) (A)-(IV), (B)-(II),(C)-(III),(D)-(I)

28. Match **List I** with **List II**

List I	List II
(A) Number of Tuples in a relation	(I) Degree
(B) Number of attributes in a relation	(II) Attributes
(C) Columns of a relation	(III) Cardinality
(D) Each row of data in a relation	(IV) Tuple

    Choose the **correct** answer from the options given below:
    (a) (A)-(III),(B)-(II),(C)-(I),(D)-(IV)
    (b) (A)-(III),(B)-(I),(C)-(II),(D)-(IV)
    (c) (A)-(IV),(B)-(I),(C)-(II),(D)-(III)
    (d) (A)-(I),(B)-(II),(C)-(III),(D)-(IV)

29. If every item of the list maps to a unique index in a hash table, then hash function is called?
    (a) Modules hash function
    (b) Perfect hash function
    (c) Collision resolution
    (d) Mid square has function

30. The function 'opPop' given below, performs _____

    ```
    def opPop (glassStack):
        if isempty (glassStack):
            print ('underflow'):
            return None
        else:
            return (glassStack.pop())
    ```
    (a) Deletion of the top most element from the stack
    (b) Insertion of the top most element from the stack
    (c) Deletion of the bottom most element from the stack
    (d) Insertion of the bottom most element from the stack

31. Which of the following searching techniques always search key in a one comparison time?
    (a) Linear search   (b) Binary search
    (c) Hashing   (d) Collison search

32. IPV4 having _____ bits whereas IPV6 having _____ bits respectively.
    (a) 32, 64   (b) 64, 128
    (c) 32, 128   (d) 128, 32

33. An operation on Deque used to insert a new element at the front of the deque?
    (a) INSERTREAR   (b) INSERTFRONT
    (c) PUSH   (d) POP

34. Which of the following is not a method a measure central tendency?
    (a) Mean   (b) Range
    (c) Median   (d) Mode

35. Queue is an ordered _____ list of elements having different ends for adding and removing elements in it.
    (a) Quadratic   (b) Cubic
    (c) Linear   (d) Bi-quadratic

36. Consider the code given below and fill in the blanks ()
    print ("Handling exception using try _____ except _____ else") try:
    numerator = 50
    denom = int(input("enter the denominator."))
    quotient = (____) #1
    print ("Division performed successfully")
    except ____ : #2
    print ("Denominator as zero is not allowed")
    except ____ : #3
    print ("only integer should be enter")
    _____ : # 4
    print ("the result", _____) # 5
    What will come in place of # 1?
    (a) denom/numerator
    (b) numerator/denom
    (c) numerator* denom/denom
    (d) Numerator* denom/numerator

37. What will come in place of # 4?
    (a) finally   (b) except
    (c) else   (d) try-else

38. What will come in place of # 5?
    (a) denom   (b) No output
    (c) Numerator   (d) quotient

39. What will come in place of # 3?
    (a) Zero Division Error
    (b) Value Error
    (c) Overflow Error
    (d) Name Error

40. What will come in place of # 2?
    (a) Zero Division Error
    (b) Value Error
    (c) Syntax Error
    (d) Overflow Error

41. Consider the following CUSTOMER database:

CustId	CustName	CustAdd	Phone	Email
C0001	Amit Saha	L-10, Pitampura	4564587852	amistsahs2@gmail.com
C0002	Rehnuma	J-12, SAKET	5527688761	rehnuma@hotmail.com
C0003	Charvi Nayyar	10/9,FF, Rohini	6811635425	charvi123@yahoo.com
C0004	Gurpreet	A-10/2, SF, Mayurvihar	3511056125	gur_singh@yahoo.com

On the basis of the above database answer the following question:

Display customer name in lower case and customer email in upper case from table CUSTOMER.

(a) SELECT UPPER (CustName), UPPER(Email) FROM CUSTOMER;

(b) SELECT UPPER (CustName), LOWER(Email) FROM CUSTOMER;

(c) SELECT LOWER (CustName), LOWER(Email) FROM CUSTOMER;

(d) SELECT LOWER(CustName), UPPER(Email) FROM CUSTOMER;

42. On the basis of the above database answer the following question:

Display the length of the email and part of the email id before the character '@'.

Note - Do not print '@'

(a) SELECT LENGTH (Email), LEFT (Email, INSTR (Email, "@")-1) FROM CUSTOMER;

(b) SELECT LENGTH (Email), LEFT (Email "@") FROM CUSTOMER;

(c) SELECT LENGTH (Email), LEFT (INSTR (Email)) FROM CUSTOMER;

(d) SELECT LENGTH (Email), LEFT (INSTR) (Email), "@"-1) FROM CUSTOMER;

43. On the basis of the above database answer the following question:

Display email after removing the domain name extension ".com" from Email of the CUSTOMER.

(a) SELECT MID (".com" from Email) FROM CUSTOMER;

(b) SELECT CUT (".com" from Email) FROM CUSTOMER;

(c) SELECT TRIM (".com" from Email) FROM CUSTOMER;

(d) SELECT CUT (".com" from Email) FROM CUSTOMER;;

44. On the basis of the above database answer the following question:

Display details of all the customers having yahoo emails only.

(a) SELECT* FROM CUSTOMER WHERE Email (" % yahoo");

(b) SELECT* FROM CUSTOMER WHERE Email = = " % yahoo";

(c) SELECT* FROM CUSTOMER WHERE Email LIKE " % yahoo";

(d) SELECT* FROM CUSTOMER WHERE Email is " % yahoo";

45. On the basis of the above database answer the following question:

Let us assume that 4-digit area code is reflected in the mobile number starting from position number 3.

For eg 1851 is area code of mobile no. 9818511338

Write the SQL query to display the area code of the customer living in Rohini.

(a) SELECT RIGHT (Phone, 3, 4) FROM CUSTOMER WHERE CustAdd like '% Rohini%';

(b) SELECT LTRIM (Phone, 3, 4) FROM CUSTOMER WHERE CustAdd like '% Rohini%';

(c) SELECT MID (Phone, 3,4) FROM CUSTOMER WHERE CustAdd like '% Rohini%';

(d) SELECT INSTR (Phone, 3,4) FROM CUSTOMER WHERE CustAdd like '% Rohini%';

46. What is mode of the following data?
[3,5,7,7,1,7,3,9,2,7,2]

(a) 3   (b) 7

(c) 5   (d) 2

47. Given below are two statements:

Statement (I) : Bubble sort: It sorts a given list of elements and swapping them if they are unordered. In algorithm every iteration through each element of a list is called pass.

Statement (II) : In Bubble sort for a list of n elements, the bubble sort make a total of (n −2) passes to sort the list.

(a) Both **Statement I** and **Statement II** are correct

(b) Both **Statement I** and **Statement II** are incorrect

(c) **Statement I** is correct but **Statement II** is incorrect

(d) **Statement I** is incorrect but **Statement II** is incorrect

48. When we try to add on element into the stack which is already full. This exception is called as:

(a) Underflow   (b) Overflow

(c) Full   (d) Empty

49. Match List-I with List-II

List-I	List-II
(A) HUB	(I) Filters networks traffic while connecting multiple computers
(B) Repeater	(II) Used to connect multiple devices to/form a network
(C) Switch	(III) Receive the data analyse it and transmit to other network
(D) Router	(IV) Receive a weak signal and regenerates it

Choose the **correct** answer from the options given below:

(a) (A)-(II), (B)-(I),(C)-(IV),(D)-(III)
(b) (A)-(I), (B)-(II), (C)-(III),(D)-(IV)
(c) (A)-(IV),(B)-(III),(C)-(II),(D)-(I)
(d) (A)-(III),(B)-(IV),(C)-(I),(D)-(II)

50. Which of the following statement is true for linear search?

(a) It is useful for large list
(b) It is useful to search an item in a small unsorted list
(c) Linear search divide the list from middle
(d) Hash function require to search an element in the list

Hints & Explanations

1. (b) The power(a,b) function is an exponential function which displays the answer as a**b or a^b

2. (b) HTML – Hyper Text Markup Language
   NIC – Network Interface Card
   URL – Uniform Resource Locator
   URI – Uniform Resource Identifier
   DNS – Domain Name System

3. (a) Cookies are small pieces of text sent to your browser by a website you visit. They help that website remember information about your visit, which can both make it easier to visit the site again and make the site more useful to you.
   A software refers to the programs and the operating information used by a computer to work.

4. (a) This is a text file which is first opened up in write mode, after which certain lines are written and the file can be seen as follows:-
   Python Programming
   Is a simple
   Programming
   Then we print the first 6 characters which are 'Python'

5. (c) A DNS or a Domain Name System server has the main function to match the website hostnames or domain names with their IP addresses.

6. (d) **Data Independence** is not a limitation but a benefit of the file system.
   Data isolation is a security strategy based on the idea that disconnecting data from the network and creating physical distance between it and the rest of the organization's IT environment can add an impenetrable barrier against harmful events or people.
   Data Inconsistency refers to the fact when data if updated at one place will not be updated at all other locations where the same data is stored.
   Data redundancy is like the repetition of the same data at one or more locations within the same file.

7. (d) This is because in order to write something into a file it is necessary to open that file in the 'w' or 'wb' mode according to the type of file used. Incase of text or csv file we use 'w' mode and for binary file we use 'wb' mode.

8. (c) MID("Informatics",3,8)
   MID (string, pos, n) - Returns a substring of size n starting from the specified position (pos) of the string. If n is not specified, it returns the substring from the position pos till end of the string.
   Hence this gives us 'formatic'
   LEFT - Returns N number of characters from the left side of the string. Hence LEFT('formatic',4) gives us 'form'.

9. (a) The select statement is not specific to any statement or command.

10. (c) This is because there is a limit to the amount of values holded by a variable of any data type, being different for each one.
    For example if the limit to the no of values which can be holded by a list are 10 then if one tries to append the 11th element an overflow error is raised.

11. (b) This is because while Hub is an unintelligent device which forwards any message received to all devices it is connected, a switch is slightly intelligent device and sends the message only where is meant to be sent.

12. (b) This is because the file has been opened in write mode and not in append mode. Hence instead of writing data at the end of the file, the data will be overwritten on the initial data.

13. (c) This is because the distinct keywords is used to remove all reapeated nuances.

14. (d) The CARTESIAN JOIN or CROSS JOIN returns the **Cartesian product** of the sets of records from two or more joined tables.
Union gives us a combination of selected rows from two tables.
Intersection gives us common rows among the two tables.
Minus gives us rows which belong to one table but not to the other.

15. (d) Any kind of specifications and rules when applied on the values holded by certain columns are known as constraints such as distinct, not null etc.

16. (d) **Range** refers to the difference between the max and min value.
Mode refers to the quantity which occurs the most no of times.
Variability describes how far apart data points lie from each other and from the center of a distribution.
Standard Deviation is a measure which shows how much variation (such as spread, dispersion, spread,) from the mean exists.

17. (d) **A primary key** is the attribute or column chosen to uniquely, distinctly identify the tuple of the table.
The **candidate keys** are the keys which have the ability to become the primary key. That is they have the ability to uniquely identify the table.
A **composite key** is when 2 or more attributes come together to uniquely identify the table.
A **foreign key** is used to connect to different table using the primary keys. It is a field in one table which is used to connect to the primary key in another table.

18. (c) $3\ 5\ 2\ *\ 2\ /\ +$
The stack goes as follows
3
3 5
3 5 2
3 5 2 *
3 10
3 10 2
3 10 2 /
3 5
3 5 +
8
Therefore we get 8

19. (c) L=[6,-1,3,4,0,8]
Bubble sort – A sorting method where adjacent elements are swapped again and again until the whole list is sorted.
6,-1,3,4,0,8
-1,3,4,0,6,8
-1,3,0,4,6,8
-1,0,3,4,6,8
Hence the list will be fully sorted by the third pass.

20. (a) **Hashing** in the data structure is a technique of mapping a large chunk of data into small tables using a hashing function.
Constant time algorithms will always take same amount of time to be executed.
O(n) — **Linear Time**: The number of of steps required are directly related (1 to 1). O(n²) — **Quadratic Time:** The number of steps it takes to accomplish a task is square of n.

21. (d) While Mysql, mongo DB and PostgreSQL are Database management systems MSExcel is a spreadsheet software program used to store and organise data.

22. (b) Stack data structure is one where insertion and deletion take place from same end the top hence following last in first out(LIFO) configuration.
While instead a queue follows first in first out(FIFO) configuration.
Linear is a type of searching bubble sort is a type of sorting technique where every two elements are compared and swapped accordingly until the list is sorted.

23. (d) It uses a loop to sequentially step through an array, starting from the first element. IT compares each elements of the array and stops when either the number is found or the end of the array is encountered.

24. (b) This is because while data is raw facts, once processed give us information.

25. (d) This I guess was a freebee since we all know that it is not necessary that we are connected to the internet to make a phone call.

26. (d) A queue would be perfect for the situation as all requests will be put in a queue to the printer and all requests would be fulfilled on first come first served basis.

27. (b) A PAN(personal area network) is a network created among various devices within the same building.
A LAN(local area network) is created among a various within a few buildings.
A MAN(metropolitan area network) is a network created within a whole city.
A WAN(wide area network) is a network created within a whole continent or a few continents even.

28. (b) Degree – No of columns in a relation
Cardinality – No of rows, tuples in a relation
Attribute – Column of a table
Tuple – Row of a table

29. (b) With **modular hashing**, the hash function is simply h(k) = k mod m for some m (usually, the number of buckets). The value k is an integer hash code generated from the key. If m is a power of two (i.e., m=2p), then h(k) is just the p lowest-order bits of k.

a **perfect hash function** h for a set S is a hash function that maps distinct elements in S to a set of m integers, with no collisions.

Collision resolution is a way of handling collisions, that is, when two or more items should be kept in the same location, especially in a hash table.

Mid-Square hashing is a hashing technique in which unique keys are generated. In this technique, a seed value is taken and it is squared. Then, some digits from the middle are extracted. These extracted digits form a number which is taken as the new seed.

30. (a) Here onpop function removes the topmost element from the list. in case the list is empty it directly prints underflow and does not remove any element.

31. (c) This searching operation is , since a constant amount of time is required to compute the hash value and then index the hash table at that location. If everything is where it should be, we have found a constant time search algorithm.

32. (c) IPv4 is composed of 32-bit address length and is the fourth version of the Internet Protocol (IP). IPv6 is composed of 128-bit address length and is the latest updated version of the Internet Protocol (IP).

33. (b) The **deque** stands for Double Ended Queue. Deque is a linear data structure where the insertion and deletion operations are performed from both ends.

34. (b) Definition. A measure of central tendency (also referred to as measures of centre or central location) is a summary measure that attempts to describe a whole set of data with a single value that represents the middle or centre of its distribution.
    Mean, Median and Mode are three measures of central tendency.

35. (c) A Queue is defined as a linear data structure that is a structure in which the elements are stored sequentially, and the elements are connected to the previous and the next element.

36. (b) This is because quotient can be defined as the quantity when multiplied with the denominator gives us the numerator.

37. (c) The else statement is used to depict a situation wherein the previous statements were not true and have not been followed.

38. (d) Here the result is the quotient since the task to be fulfilled was to find the quantity when the numerator is divided by the denominator which here is represented by the quotient.

39. (b) As in this case the exception will be raised due to the fact that the denominator inputted by the user is not an integer and hence holds a value of invalid data type such that the above code cant work on it successfully.

40. (a) This is because in this case the exception is raised due to the fact that any number divided by 0 is not defined and hence not a expected or helpful result.

41. (d) SELECT LOWER(Custname), UPPER(Email) FROM CUSTOMER;
    This is because the UPPER function here is used to convert the given data to uppercase and the LOWER function is used to convert the data into lowercase.

42. (a) SELECT LENGTH(Email),
    LEFT(Email,INSTR(Email,"@"),-1)
    FROM CUSTOMER;
    The INSTR() function returns the position of the first occurrence of a string in another string.
    The LENGTH() function is used to give the length of a string.
    The SQL LEFT() function is used to retrieve the leftmost length characters from the string. It accepts a string value and a numerical value (say N) as a parameters and returns the specified string up to N characters from left to right. It returns NULL if the value of any of the given arguments is NULL.

43. (c) SELECT TRIM(".com" from Email) FROM CUSTOMER;
    The **TRIM() function** removes the space character OR other specified characters from the start or end of a string.

44. (c) SELECT * FROM CUSTOMER WHERE Email LIKE "%Yahoo%";
    Here the like keyword helps us to describe the format of the Email.
    The % symbol represents any no of characters hence %Yahoo% represents an email where there can be any no of characters before "Yahoo" and any no of characters after "Yahoo". An email of such format will always be a Yahoo Email.

45. (a) SELECT RIGHT(Phone,3,4) FROM CUSTOMER WHERE CustAdd LIKE "%Rohini%";
    The SQL RIGHT() function is used to retrieve the rightmost length characters from the string. It accepts a string value and a numerical value (say N) as a parameters and returns the specified string up to N characters from right to left. It returns NULL if any argument values are passed as NULL.
    Hence Right(3,4) will give us 4 characters to the right of the third character.
    Further the address must contain "Rohini" Hence we use the last questions format as "%Rohini%"

46. (b) This is because mode is the entry which occurs the most no of times. Here 7 occurs the maximum no of times i.e 4.

47. (c) This is because Bubble sort with n element required n - 1 passes and not n-2 passes.

48. (b) Every list has a maximum no of elements it can hold as after a point the space is finished. Hence when such a list is already filled and we try to append an element it cant be done so an error occurs, this error is known as OverFlow error.

49. (d) Hub – It is an unintelligent device which is used to connect various devices over a network. When a hub receives information from one node it forwards these info to all other nodes hence there is no privacy.

    Repeater – When a data has to be transmitted over long distances via signals after around 100 meters such distances might weaken, in such cases repeaters are used to regenerate the signal.

    Router – A router receives data, analyses it and forwards it via the smallest distances.

    Switch – It is a slightly intelligent device which connects multiple devices over a network but also filters information and sends it only to computers and nodes the info was meant for.

50. (b) It is useful to search an item in a small unsorted list. A linear search is meant for small unsorted lists. A binary search is meant for large lists and cuts the list and cuts the list down the mddle in steps to make the list smaller and smaller.

    Hashing is a searching technique which uses the hash function, while the linear search does not use it.