

# SAMPLE Question Paper

# 1

Maximum Marks : 200

Time : 45 Minutes

## General Instructions :

- (i) Section A will have 15 questions covering both i.e. Computer Science/Information Practices which will be compulsory for all candidates.
- (ii) Section B1 will have 35 question from Computer Science out of which 25 questions need to be attempted.
- (iii) Section B2 will have 35 questions purely from Information Practices out of which 25 question will be attempted.
- (iv) Correct answer or the most appropriate answer : Five marks (+5).
- (v) Any incorrect option marked will be given minus one mark (- 1).
- (vi) Unanswered/Marked for Review will be given no mark (0).
- (vii) If more than one option is found to be correct then Five marks (+5) will be awarded to only those who have marked any of the correct options.
- (viii) If all options are found to be correct then Five marks (+5) will be awarded to all those who have attempted the question.
- (ix) If none of the options is found correct or a Question is found to be wrong or a Question is dropped then all candidates who have appeared will be given five marks (+5).
- (x) Calculator / any electronic gadgets are not permitted

## Section - A

[45 Minutes]

## (Computer Science/Informatics Practices)

1. Which of the following error is also known as Syntax Error?  
(1) Code Error                      (2) Parsing Error  
(3) Logical Error                    (4) Programming Error
2. \_\_\_\_\_ function is used to open a file in python.  
(1) new()                              (2) open()  
(3) start()                            (4) All of the above
3. \_\_\_\_\_ stands for EOF.  
(1) End Or File                      (2) End Of File  
(3) End Off File                      (4) End On File
4. A collection of \_\_\_\_\_ is known as relational database.  
(1) Tables                              (2) Attributes  
(3) Records                            (4) Fields
5. A \_\_\_\_\_ in RDBMS is also known as record of a table.  
(1) Key                                  (2) Tuple  
(3) Attribute                          (4) Degree
6. Relation is defined as a collection of data in the form of \_\_\_\_\_.  
(1) rows and columns              (2) rows  
(3) columns                            (4) none of the above
7. Which of the following command is used to create a new table in SQL?  
(1) BUILD TABLE                  (2) CREATE TABLE  
(3) START TABLE                  (4) NEW TABLE
8. What does the following statement in SQL do?  
DROP TABLE Customer;  
(1) Deletes Customer Table  
(2) Delete some rows of Customer Table  
(3) Create Customer Table  
(4) None of the above
9. \_\_\_\_\_ is used to get a specified day of the month for a given date.  
(1) GETDATE                          (2) DAY  
(3) DATE                                (4) CURRENTDATE
10. Which statement will display the records for all the students who have scored more than 75 marks?  
(1) SELECT \* FROM student WHERE MARKS GREATER THEN 75;  
(2) SELECT \* FROM student WHERE MARKS = 75;  
(3) SELECT \* FROM student WHERE MARKS > 75;  
(4) SELECT \* FROM student MARKS > 75;

11. The SQL built-in function \_\_\_\_\_ obtains the largest value in a numeric column.  
 (1) MIN (2) MAX  
 (3) MAXIMUM (4) HIGH
12. \_\_\_\_\_ stands for MAN.  
 (1) Metropolitan Area Network  
 (2) Main Area Network  
 (3) Metropolitan Access Network  
 (4) Metro Access Network
13. Which of the following device can be operate in place of hub?  
 (1) Switch (2) Bridge  
 (3) Router (4) Gateway
14. Which one of the following is not a network topology?  
 (1) Mesh (2) Ring  
 (3) Tree (4) Peer-to-Peer
15. WWW stands for \_\_\_\_\_  
 (1) World Wide Web (2) Web World Wide  
 (3) Wide World Web (4) Wide Web Word

## Section - B1 (Computer Science)

[45 Minutes]

1. To open a file c:\scores.txt for reading, we use \_\_\_\_\_  
 (1) infile = open("c:\scores.txt", "r")  
 (2) infile = open("c:\\scores.txt", "r")  
 (3) infile = open(file = "c:\scores.txt", "r")  
 (4) infile = open(file = "c:\\scores.txt", "r")
2. The postfix form of the expression  $(A + B) * (C * D - E) * F / G$  is?  
 (1)  $AB + CD * E - FG / **$   
 (2)  $AB + CD * E - F ** G /$   
 (3)  $AB + CD * E - * F * G /$   
 (4)  $AB + CDE * - * F * G /$
3. Which method is used to get the row-id of the last modified row?  
 (1) cursor.getrowid() (2) cursor.endrowid()  
 (3) cursor.lastrowid() (4) cursor.exitrowid()
4. Which of the following are used in data definition?  
 (1) DML (2) DDL  
 (3) TCL (4) None of these
5. **Assertion (A):** The postfix form of  $(A + B) * C$  is  $AB + C *$ .  
**Reason (R):** Postfix notation refers to when operator is placed after its operands.  
 (1) Both A and R are true and R is the correct explanation for A.  
 (2) Both A and R are true and R is not correct explanation for A.  
 (3) A is true but R is false.  
 (4) A is false but R is true.
6. Which of the following is not a comparison query?  
 (1) IN (2) BETWEEN  
 (3) LIKE (4) AND
7. \_\_\_\_\_ sort is the simplest sorting algorithm that works by repeatedly swapping the adjacent elements in case they are unordered in n-1 passes.  
 (1) Bubble (2) Insertion  
 (3) Complexity (4) Selection
8. \_\_\_\_\_ is a way to represent data in memory.  
 (1) Data Handling (2) Data Structure  
 (3) Data Dumping (4) Data Collection
9. How many except statements can a try-except block have?  
 (1) zero (2) one  
 (3) more than one (4) more than zero
10. \_\_\_\_\_ explain how an algorithm will perform when the input grows larger.  
 (1) Sorting (2) Merging  
 (3) Complexity (4) Searching
11. When will the else part of try-except-else be executed?  
 (1) always  
 (2) when an exception occurs  
 (3) when no exception occurs  
 (4) when an exception occurs in to except block
12. Which statement will read 5 characters from a file(file object 'f')?  
 (1) f.read() (2) f.read(5)  
 (3) f.reads(5) (4) None of the above
13. When a stack is full and no element can be added, it is called an \_\_\_\_\_.  
 (1) Overflow (2) Extraflow  
 (3) Out of range (4) Underflow
14. An attribute whose value is derived from the primary key of some other table.  
 (1) Primary key (2) Foreign key  
 (3) Alternate key (4) None of these
15. Is the following Python code valid?

- try:  
# Do something
- except:  
# Do something
- finally:  
# Do something
- (1) no, there is no such thing as finally  
(2) no, finally cannot be used with except  
(3) no, finally must come before except  
(4) yes
- 16.** Which function open file in python?  
(1) open() (2) new()  
(3) Open() (4) None of the above
- 17.** A Computer Network:  
(1) Is a collection of hardware components and computers?  
(2) Is interconnected by communication channels  
(3) Allows sharing of resources and information  
(4) All of the above
- 18.** In \_\_\_\_\_ the smallest element is selected from the unsorted array and swapped with the leftmost element, and that element becomes a part of the sorted array.  
(1) Bubble sort (2) Insertion sort  
(3) Complexity sort (4) Selection sort
- 19.** Which function is used with ORDER BY clause to custom sort order.  
(1) ASC (2) DESC  
(3) FIELD (4) None of these
- 20.** Is the following Python code valid?  
try:  
# Do something  
except:  
# Do something  
else:  
# Do something  
(1) no, there is no such thing as else  
(2) no, else cannot be used with except  
(3) no, else must come before except  
(4) yes
- 21.** Data structure can be of two type's namely \_\_\_\_\_  
(1) Simple and Compound  
(2) Simple and Nested  
(3) Sequential and random  
(4) All of the above
- 22.** What is the use of Bridge in the Network?  
(1) To connect LANs  
(2) To separate LANs  
(3) To control network speed  
(4) All of the above
- 23.** Can one block of except statements handle multiple exception?  
(1) yes, like except TypeError, SyntaxError [...]  
(2) yes, like except [TypeError, SyntaxError]  
(3) no  
(4) none of the mentioned
- 24.** Which mode create new file if the file does not exist?  
(1) write mode (2) append mode  
(3) Both of the above (4) None of the above
- 25.** When is the finally block executed?  
(1) when there is no exception  
(2) when there is an exception  
(3) only if some condition that has been specified is satisfied  
(4) always
- 26.** Which statement will return one line from a file (file object is 'f')?  
(1) f.readline() (2) f.readlines()  
(3) f.read() (4) f.line()
- 27.** Which of the following join selects all rows from both the tables as long as the condition satisfies?  
(1) Inner Join (2) Left Join  
(3) Right Join (4) Natural Join
- 28.** Compound Data structure can be \_\_\_\_\_ & \_\_\_\_\_  
(1) Sequential and random  
(2) Simple & Nested  
(3) Linear & Non Linear  
(4) Simple and Linear
- 29.** \_\_\_\_\_ search takes a sorted/ordered list and divides it in the middle.  
(1) Binary (2) Hash  
(3) Linear (4) Both (1) & (3)
- 30.** Each table comprises of \_\_\_\_\_ and \_\_\_\_\_ .  
(1) rows, columns (2) data, information  
(3) database, table (4) None of these

### Case Based

Here is the code for pop method in stack to print a string in reverse order. But there is some missing word. Answer the questions that follow to execute the code successfully.

```
def popstack (stack)___ # Line 1
    if isempty (stack) : # Line 2
```

```

_____ # Line 3
_____ : # Line 4
top = len(stack) __ # Line 5
for a in range (top, -1, -1) :
    print stack__, # Line 7
return

```

31. Which symbol is used to terminate the function popstack ()?

- (1) ; (2) :  
(3) , (4) !

32. Fill the blank in line 3

- (1) return (2) True

- (3) False (4) 0

33. Which variable or keyword will be best suited in fill the blank in line 4?

- (1) elif (2) for  
(3) while (4) else

34. Fill the blank in line 5

- (1) 0 (2) 1  
(3) 2 (4) -1

35. Which value will be used in line 7?

- (1) (A) (2) [a]  
(3) <a> (4) {a}

## Section - B2 (Informatics Practices) [45 Minutes]

1. Pandas is an open-source \_\_\_\_\_ Library?

- (1) Ruby (2) Javascript  
(3) Java (4) Python

2. \_\_\_\_\_ is a networking device that forwards the data packets between computer networks.

- (1) Repeater (2) Hub  
(3) Switch (4) Router

3. After a fight with your friend, you did the following activities. Which of these activities is not an example of cyber bullying?

- (1) You sent an email to your friend with a message saying that "I am sorry".  
(2) You sent a threatening message to your friend saying "Do not try to call or talk to me".  
(3) You created an embarrassing picture of your friend and uploaded on your account on a social networking site.  
(4) None of the above.

4. In this topology, each node is connected to more than one node to provide an alternate route in the case the host is either down or too busy.

- (1) Star (2) Bus  
(3) Mesh (4) Ring

5. We can analyze the data in pandas with:

- (1) Series (2) DataFrame  
(3) Both of the above (4) None of the above

6. The command used to save a plotted graph using pyplot functions is .....

- (1) plt.save() (2) plt.savefig()  
(3) plt.savepicture() (4) plt.saveimage()

7. Which of the following is not a network device?

- (1) Hub (2) Switch  
(3) Mesh (4) Router

8. Which of the following is not a network topology :

- (1) Gateway (2) Star  
(3) Mesh (4) Tree

9. df.index properties can be used to

- (1) rename rows  
(2) rename columns  
(3) rename rows and columns both  
(4) None of these

10. Which of the following thing can be data in Pandas?

- (1) a python dict (2) an ndarray  
(3) a scalar value (4) all of the mentioned

11. Bluetooth is an example of \_\_\_\_\_

- (1) personal area network  
(2) local area network  
(3) virtual private network  
(4) wide area network

12. The digital footprint can be saved in which of the following locations?

- (1) Download folder  
(2) User account  
(3) Browser settings and web server  
(4) Google Drive

13. Which of the following type of digital footprints created by the user intentionally with their active consent

- (1) Active digital footprint  
(2) Passive digital footprint

- (3) Massive digital footprint  
(4) Interactive digital footprint
- 14.** Data protection refers to protect data from :
- (1) Substantial Harm  
(2) Embarrassment  
(3) Inconvenience and unfairness  
(4) All of these
- 15.** Pandas key data structure is called?
- (1) Keyframe (2) DataFrame  
(3) Statistics (4) Econometrics
- 16.** It is OK to forward or post an email message that you received if
- (1) the message is typed in all capitals.  
(2) the author of the message has given you permission to forward or post it.  
(3) it does not contain any copyrighted material.  
(4) the author of the message hasn't marked it as confidential.
- 17.** Which amongst the following is not an example of browser ?
- (1) Chrome (2) Firefox  
(3) Avast (4) Edge
- 18. Assertion (A):** To create a series from array, we have to import the numpy module and then use array () method.  
**Reason (R):** NumPy is an open-source numerical Python library. NumPy contains a multi-dimensional array and matrix data structures.
- (1) Both Assertion (A) and reason (R) are true and reason (R) is the correct explanation of Assertion (A).  
(2) Both Assertion (A) and reason (R) are true but reason (R) is not the correct explanation of Assertion (A).  
(3) Assertion (A) is true but reason (R) is false.  
(4) Assertion (A) is false but reason (R) is true.
- 19. Assertion (A):** In Python Pandas, Series.index attribute is used to get or set the index labels of the given series object.  
**Reason (R):** ix[] attribute is used to access a group of rows and columns by label (s) or a boolean array in the given series object.
- (1) Both Assertion (A) and reason (R) are true and reason (R) is the correct explanation of Assertion (A).  
(2) Both Assertion (A) and reason (R) are true but reason (R) is not the correct explanation of Assertion (A).
- (3) Assertion (A) is true but reason (R) is false.  
(4) Assertion (A) is false but reason (R) is true.
- 20.** Which command is used to show a chart;
- (1) chartshow() (2) show()  
(3) display() (4) showchart()
- 21.** Knowledge and understanding of netiquette is useful because
- (1) it will help you create a positive impression on those you meet in cyberspace.  
(2) it explains some of the technical limitations of online communications.  
(3) it explains the conventions already being used by millions of cybernauts.  
(4) All of the above.
- 22.** What does Router do in a network?
- (1) Forwards a packet to all outgoing links  
(2) Forwards a packet to the next free outgoing link  
(3) Determines on which outgoing link a packet is to be forwarded  
(4) Forwards a packet to all outgoing links except the originated link
- 23.** Include a subject line
- (1) only when you are writing an official memo.  
(2) only in personal memos.  
(3) if the person you are sending it to requires one.  
(4) in all e-mail messages.
- 24.** The function used to give title to a graph is .....
- (1) plt.show() (2) plt.plot()  
(3) plt.title() (4) plt.titleshow()
- 25.** Which of the following is not 'open source' software
- (1) Linux (2) Ubuntu  
(3) open office (4) windows 10
- 26.** Which one of the following can be considered as the class of computer threats?
- (1) Dos Attack (2) Phishing  
(3) Soliciting (4) Both (1) and (3)
- 27.** Which of the following usually observe each activity on the internet of the victim, gather all information in the background, and send it to someone else?
- (1) Malware (2) Spyware  
(3) Adware (4) All of the above
- 28.** \_\_\_\_\_ is a type of software designed to help the user's computer detect viruses and avoid them.
- (1) Malware (2) Adware  
(3) Antivirus (4) Both (2) and (3)
- 29.** Which of the following switch methods creates a point-to-point physical connection between two or more computers?

- (1) Message switching (2) Packet switching  
(3) Circuit switching (4) None of these

30. What kind of transmission medium is most appropriate to carry data in a computer network that is exposed to electrical interferences?

- (1) Unshielded twisted pair  
(2) Optical fiber  
(3) Coaxial cable  
(4) Microwave

### Case Based

Consider the table STUDENT given below:

RollNo	Name	Class	DOB	Gender	City	Marks
1	Anand	XI	6/6/97	M	Agra	430
2	Chetan	XII	7/5/94	M	Mumbai	460
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492
5	Saniyal	XII	8/10/95	M	Delhi	360
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Moscow	324
8	Nishant	X	12/6/95	M	Moscow	429

31. State the command that will give the output as:

Name
Anand
Chetan
Geet
Preeti

- (i) select Name from student where Class='XI' and Class='XII';  
(ii) select name from student where not Class='XI' and Class='XII';  
(iii) select name from student where City="Agra" or City="Mumbai";  
(iv) select name from student where City in("Agra", "Mumbai");

Choose the correct option:

- (1) Both (i) and (ii)  
(2) Both (iii) and (iv)  
(3) Any of the options (i), (ii) and (iv)  
(4) Only (iii)

32. What will be the output of the following command?

Select \* from STUDENT where Gender ="F" order by Marks;

(1)

Rollno	Name	Class	DOB	Gender	City	Marks
4	Preeti	XII	8/8/95	F	Mumbai	492
3	Geet	XI	6/5/97	F	Agra	470
7	Neha	X	8/12/95	F	Moscow	324
6	Maakhiy	XI	12/12/94	F	Dubai	256

(2)

Rollno	Name	Class	DOB	Gender	City	Marks
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Moscow	324
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492

(3)

Gender	Marks
F	256
F	324
F	470
F	492

(4)

Gender	Marks
F	492
F	470
F	324
F	256

33. Prachi has given the following command to obtain the highest marks :

Select max(Marks) from STUDENT where group by Class; but she is not getting the desired result. Help her by writing the correct command. [1]

- (1) Select Max(Marks) from student where group by Class;  
(2) Select Class, max(Marks) from student group by Marks;

- (3) Select Class, max(Marks) group by Class from student;
- (4) Select Class, max(Marks) from student group by Class;
- 34.** State the command to display the average marks scored by students of each gender who are in class XI?
- (i) Select Gender, avg(Marks) from STUDENT where Class= "XI" group by Gender;
- (ii) Select Gender, avg(Marks) from STUDENT group by Gender where Class="XI";
- (iii) Select Gender, avg(Marks) group by Gender from STUDENT having Class="XI";
- (iv) Select Gender, avg(Marks) from STUDENT group by Gender having Class = "XI";
- Choose the correct option:
- (1) Both (ii) and(iii)      (2) Both (ii) and(iv)
- (3) Both (i) and(iii)      (4) Only (iii)
- 35.** Help Ritesh to write the command to display the name of the youngest student?
- (1) select Name, min (DOB) from student;
- (2) select Name, max (DOB) from student;
- (3) select Name, min (DOB) from student group by Name;
- (4) select Name, maximum (DOB) from student;

□□□

# SOLUTIONS OF Question Paper

# 1

## Section - A

[45 Minutes]

1. Option (2) is correct.

*Explanation:* At the time of writing a program, if someone does not follow the rules of the particular programming language, then it is known as Syntax error. It is also known as Parsing Error.

2. Option (2) is correct.

*Explanation:* The python open() function is used to open() internally stored files. It returns the contents of the file as python objects.

3. Option (2) is correct.

*Explanation:* This is the point in the program where the user cannot read the data anymore.

4. Option (1) is correct.

*Explanation:* A relational database is the collection of tables.

5. Option (2) is correct.

*Explanation:* Tuple is a row of a relation. Also known as record.

6. Option (1) is correct.

*Explanation:* Relation is also called table. Relation is defined as a collection of data in the form of rows and columns.

7. Option (2) is correct.

*Explanation:* The CREATE TABLE command is used to create a new table in SQL.

8. Option (1) is correct.

*Explanation:* The DROP command is used to delete/drop a table in SQL.

9. Option (2) is correct.

*Explanation:* DAY is used to get the specified day of the month for a given date.

10. Option (3) is correct.

*Explanation:* WHERE clause is used to select particular rows that satisfy a condition.

11. Option (2) is correct.

*Explanation:* The MAX() function returns the largest value of the selected column.

12. Option (1) is correct.

*Explanation:* A metropolitan area network, or MAN, connects multiple LANs across a large area but is smaller than a WAN.

13. Option (1) is correct.

*Explanation:* They are both able to transmit data from one computer to another. For an Ethernet switch, it is sometimes called a hub.

14. Option (4) is correct.

*Explanation:* In a computer network, there are mainly six types of physical topology, they are:

- Bus Topology.
- Ring Topology.
- Star Topology.
- Mesh Topology.
- Tree Topology.
- Hybrid Topology.

15. Option (1) is correct.

*Explanation:* The World Wide Web (WWW) is an Internet-based global information system. The web is a system of interlinked hypertext documents contained on the internet.

## Section - B1 (Computer Science)

[45 Minutes]

1. Option (2) is correct.

*Explanation:* Open () function creates a file object which would be utilised to call other methods associated with it.

```
file object = open [file name (access_mode)],  
(buffering)] open (file name, [access_mode] ,  
[buffering] )
```



**2. Option (1) is correct.**

*Explanation:* The steps to convert an infix expression to a postfix expression manually are as follows:

- (i) Determine the actual evaluation order by inserting braces.
- (ii) Convert the expression from the innermost braces by putting the operator after the operands.
- (iii) Repeat step (ii) until entire expression is converted into postfix notation.

• Add This explanation below the answer

**3. Option (3) is correct.**

*Explanation:* This read-only property returns the value generated for an AUTO\_INCREMENT column by the previous INSERT or UPDATE statement.

**4. Option (2) is correct.**

*Explanation:* DDL (Data Definition Language) are the commands that allows you to perform tasks like creating, altering and dropping database, granting and revoking privileges on database and maintaining commands.

**5. Option (1) is correct.**

*Explanation:* In stack, postfix notation refers to when operator is placed after its operands while reading the expression from left to right, push the element in the stack if it is an operand.

**6. Option (4) is correct.**

*Explanation:* AND is a logical operator used with SELECT, INSERT, UPDATE and DELETE statements to combine two conditions together.

**7. Option (1) is correct.****8. Option (2) is correct.****9. Option (4) is correct.**

*Explanation:* There has to be at least one except statement.

**10. Option (3) is correct.****11. Option (3) is correct.**

*Explanation:* The else part is executed when no exception occurs.

**12. Option (2) is correct.****13. Option (1) is correct.**

*Explanation:* Overflow is the condition in which there is no memory left to accommodate a new item in a fixed size stack.

**14. Option (2) is correct.**

*Explanation:* A foreign key is a column or a group of columns in a relational database table that provides a link between data in two tables.

**15. Option (2) is correct.****16. Option (1) is correct.**

*Explanation:* The open() function opens a file, and returns it as a file object.

**17. Option (4) is correct.****18. Option (4) is correct.**

*Explanation:* The selection sort algorithm sorts an array by repeatedly finding the minimum element (considering ascending order) from unsorted part and putting it at the beginning.

**19. Option (3) is correct.**

*Explanation:* The FIELD function internally maps the values specifying order to a list of numeric values and then uses those numbers for sorting.

**20. Option (4) is correct.****21. Option (1) is correct.**

*Explanation:* There are different types of data structures that build on one another including primitive, simple, and compound structures.

**22. Option (1) is correct.****23. Option (1) is correct.**

*Explanation:* Each type of exception can be specified directly. There is no need to put it in a list.

**24. Option (3) is correct.**

*Explanation:* 'a' - It opens the file in the append mode. The file pointer exists at the end of the previously written file if exists any. It creates a new file if no file exists with the same name. 'w' - It opens the file to write only.

**25. Option (4) is correct.****26. Option (1) is correct.**

*Explanation:* The readline() method returns one line from the file. You can also specified how many bytes from the line to return, by using the size parameter.

**27. Option (1) is correct.**

*Explanation:* The INNER JOIN keyword will create the result-set by combining all rows from both the tables where the condition satisfies i.e value of the common field will be same.

**28. Option (3) is correct.****29. Option (1) is correct.**

*Explanation:* It is a search algorithm that finds the position of a target value within a sorted array. Binary search compares the target value to the middle element of the array.

30. Option (1) is correct.

*Explanation:* A database is an organized collection of data that is arranged in rows and columns.

### Case Based

31. Option (2) is correct.

*Explanation:* A colon (:) is used to mark the beginning of the function.

32. Option (1) is correct.

*Explanation:* A return statement is used to end the execution of the function call and returns the result to the caller. If the return statement is without any expression, then the special value None is returned.

33. Option (4) is correct.

*Explanation:* An else statement contains the block of code that executes if the conditional expression in the if statement results in FALSE value.

34. Option (4) is correct.

*Explanation:* The statement `top = len(stack)-1` will return the index position of the last item in the stack which is length of the stack -1.

35. Option (2) is correct.

*Explanation:* [a] represents the index position of the list item. The statement `Print stack[a]` will print the stack item from index position [a] where a varies from the last index position to 0 to reverse the string.

## Section - B2 (Informatics Practices) [45 Minutes]

1. Option (4) is correct.

*Explanation:* Pandas is an open-source Python Library providing high-performance data manipulation and analysis tool using its powerful data structures.

2. Option (4) is correct.

*Explanation:* Routers perform the traffic directing functions on the Internet.

3. Option (1) is correct.

*Explanation:* Cyberbullying or cyber harassment is a form of bullying or harassment using electronic means. Cyberbullying and cyberharassment are also known as online bullying.

4. Option (3) is correct.

*Explanation:* A mesh topology has multiple connections, making it the most fault tolerant topology available.

5. Option (3) is correct.

*Explanation :* Pandas is the most popular python library that is used for data analysis. It provides highly optimized performance with back-end source code is purely written in C or Python. We can analyze data in pandas with :  
Series  
DataFrames

6. Option (2) is correct.

*Explanation:* The figure created can be saved to our local machines by using `savefig()` method.

7. Option (3) is correct.

*Explanation:* Network Devices are Hub, Repeater, Bridge, Switch, Router, Gateways and router.

8. Option (1) is correct.

*Explanation:* Network topology is the topological structure of a network and may be depicted physically or logically.

9. Option (1) is correct.

*Explanation:* The index property returns an object of type Index.

10. Option (4) is correct.

*Explanation:* The passed index is a list of axis labels.

11. Option (1) is correct.

*Explanation:* Bluetooth is a short-range wireless technology standard that is used for exchanging data between fixed and mobile devices over short distances using UHF radio waves in the ISM bands, from 2.402 GHz to 2.48 GHz, and building personal area networks.

12. Option (3) is correct.

*Explanation:* There are two main storages of digital footprints:  
Browser Settings: The digital footprints can be saved in browser history, cookies, password, autofill data etc.  
Web Server and Database: Every website has its own database. When the user enters data and fills it up to them it can be saved in the database.

13. Option (1) is correct.

*Explanation:* An active digital footprint is where the user has deliberately shared information about themselves either by using social media sites or by using websites.

14. Option (4) is correct.

**Explanation:** Data protection is a set of strategies and processes you can use to secure the privacy, availability, and integrity of your data.

15. Option (2) is correct.

**Explanation:** Pandas is built on the Numpy package and its key data structure is called the DataFrame.

16. Option (2) is correct.

17. Option (3) is correct.

**Explanation:** Avast Antivirus is a family of cross-platform internet security applications developed by Avast for Microsoft Windows, macOS, Android and iOS.

18. Option (A) is correct.

**Explanation :** NumPy, which stands for Numerical Python, is a library consisting of multidimensional array objects and a collection of routines for processing those arrays. Using NumPy, mathematical and logical operations on arrays can be performed. NumPy is a Python package. For most data types, pandas uses NumPy arrays as the concrete objects contained with `alndex` , `Series` , or `DataFrame`.

19. Option (C) is correct.

**Explanation :** `.loc[]` attribute is used to access a group of rows and columns by label (s) or a boolean array in the given series object. `.ix[]` attribute is primarily label location based indexer, with integer position fallback. It takes the label as input and returns the value corresponding to that label.

20. Option (2) is correct.

**Explanation:** `plt.show()` is used to display the figure, where `plt` is an alias.

21. Option (4) is correct.

**Explanation:** Netiquette is a combination of the words network and etiquette and is defined as a set of rules for acceptable online behavior. Similarly, online ethics focuses on the acceptable use of online resources in an online social environment.

22. Option (3) is correct.

**Explanation:** A router is a switching device for networks, which is able to route network packets, based on their addresses, to other networks or devices.

23. Option (4) is correct.

**Explanation:** An email message is a text, typically brief and informal, that is sent or received over a computer network.

24. Option (3) is correct.

**Explanation:** The `title()` method in `matplotlib` module is used to specify title of the visualization depicted and displays the title using various attributes.

25. Option (4) is correct.

**Explanation:** Open-source software is computer software that is released under a license in which the copyright holder grants users the rights to use, study, change, and distribute the software and its source code to anyone and for any purpose.

26. Option (1) is correct.

**Explanation:** A dos attack refers to the denial of service attack. It is a kind of cyber attack in which one tries to make a machine (or targeted application, website etc.) unavailable for its intended users. It is usually accomplished by disturbing the service temporarily or indefinitely of the target connected to the internet.

27. Option (2) is correct.

**Explanation:** It is generally defined as the software designed to enter the target's device or computer system, gather all information, observe all user activities, and send this information to a third party. Another important thing about the spyware is that it works in the background sends all information without your permission.

28. Option (3) is correct.

**Explanation:** An antivirus is a kind of software that is specially designed to help the user's computer to detect the virus as well as to avoid the harmful effect of them. In some cases where the virus already resides in the user's computer, it can be easily removed by scanning the entire system with antivirus help.

29. Option (3) is correct.

**Explanation:** Circuit switching is a switching technique in which a point-to-point physical connection is made between two or more devices.

**For example:** Telephone system, in which sender and receiver are connected by physical connection, such as wire.

30. Option (2) is correct.

**Explanation:** The optical fiber is made of glass or plastic. In this cable, the transmission of data occurs in the form of light rather than the electric current, so this cable provides higher data transfer speed than other cables

**Case Based**

31. Option (2) is correct.

**Explanation:** The IN condition (sometimes called the IN operator) allows you to easily test if an expression matches any value in a list of values.

32. Option (2) is correct.

**Explanation:**

Rollno.	Name	Class	DOB	Gender	City	Marks
6	Maakhiy	XI	12/12/94	F	Dubai	256
7	Neha	X	8/12/95	F	Mascow	324
3	Geet	XI	6/5/97	F	Agra	470
4	Preeti	XII	8/8/95	F	Mumbai	492

33. Option (4) is correct.

**Explanation:** The MAX function is used to return the maximum value of an expression in a SELECT statement.

34. Option (2) is correct.

**Explanation:** The AVG() function returns the average value of a numeric column.

35. Option (2) is correct.

**Explanation:** The MAX function is used to return the maximum value of an expression in a SELECT statement.

