

**DEHRADUN PUBLIC SCHOOL**  
**ASSIGNMENT (2023-24)**  
**SUBJECT - INFORMATICS PRACTICES (065)**  
**CLASS - XII**

**CHAPTER-1 (PYTHON PANDAS -I)**

Read the questions and tick the correct option.

**Q1.** Which of the following is not an attribute of pandas data frame?

- a. length    b. T    c. Size    d. shape

**Q2.** Method or function to add a new row in a data frame is:

- a. .loc()    b. .iloc()    c. join    d. add()

**Q3.** Which attribute is used with Series to count the total number of NaN values?

- a. size    b. len    c. count    d. count total

**Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as**

- a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. Assertion (A):** DataFrame has both a row and column index.

**Reasoning (R):** A DataFrame is a two-dimensional labelled data structure likea table of MySQL.

**Q5. Assertion (A):** A series object stores values of homogeneous types.

**Reasoning (R):** Even if values appear to be of different types, internally they are stored in a common datatype.

**Subjective type questions:**

**Q6.** What is the significance of pandas library?

**Q7.** How is Series data structure different from a DataFrame data structure?

**Q8.** Given the following series objects:

S1		S2	
0	3	0	12
1	5	2	10
2	6	3	15
4	10	4	20
5	12	6	27

- i. What will be the result of S1 + S2?  
 ii. What will be the result of S1 – S2?

**Q9.** Consider a given Series , M1:

index	{	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="text-align: center;">Marks</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Term1</td> <td style="text-align: center; padding: 5px;">45</td> </tr> <tr> <td style="padding: 5px;">Term2</td> <td style="text-align: center; padding: 5px;">65</td> </tr> <tr> <td style="padding: 5px;">Term3</td> <td style="text-align: center; padding: 5px;">24</td> </tr> <tr> <td style="padding: 5px;">Term4</td> <td style="text-align: center; padding: 5px;">89</td> </tr> </tbody> </table>		Marks	Term1	45	Term2	65	Term3	24	Term4	89
	Marks											
Term1	45											
Term2	65											
Term3	24											
Term4	89											

Write a program in Python Pandas to create the series.

**Q10. Case-Based Question.**

Pushp, a student of class-XII, has been assigned a code to create a panda series S1, as shown below.

- a 100  
 b 200  
 c 300

d 400  
e 500  
dtype: int64

**With reference to the above answer given questions.**

- i. Choose the command that will give the following output-  
b 200  
c 300  
dtype: int64  
a. print(S1[:3])                      b. print(S1[0:3])                      c. print(S1[1:3])                      d. print(S1[2:4])
- ii. Help him to identify the correct statement that can be used to extract the value with the index 'c'.  
a. print(S1[c])                      b. print(S1(c))                      c. print('S1' ['c'])                      d. print(S1 ['c'])
- iii. Which of the following command will give the following output-  
b 200  
d 400  
dtype: int64  
a. print(S1.iloc[1:4])                      b. print(S1.iloc[2:4])  
c. print(S1.iloc(1:4))                      d. print(S1.iloc[1:4:2])
- iv. Which of the following command will display the series by adding 10 in each value.  
a. print(S1 [+10])                      b. print(S1+10)                      c. print(S1)+10                      d. print(S1)+print(10)

## CHAPTER – 2 (PYTHON PANDAS-II)

**Read the questions and tick the correct option.**

- Q1.** To iterate over horizontal subset of dataframe, \_\_\_\_\_ function may be used.  
a. iterate( )                      b. iterrows( )                      c. itercols( )                      d. iteritems( )
- Q2.** To get top 5 rows of a dataframe, you may use \_\_\_\_\_ function.  
a. head( )                      b. tail( )                      c. top( )                      d. top(5)
- Q3.** To display last five rows of a series object 'S', you may write:  
a. S.Head( )                      b. S.Tail(5)                      c. S.Head(5)                      d. S.tail( )

**Subjective type questions:**

**Q4.** Write a small python code to drop a row from dataframe labeled as 0.

**Q5.** Hitesh wants to display the last four rows of the dataframe df and has written the following code:

```
df.tail()
```

But last five rows are being displayed. Identify the error and rewrite the correct bcode so that last 4 rows get displayed.

**Q6.** What is the basic difference between iterrows( ) and iteritems( )?

**Q7.** Explain briefly the CSV format of storing files.

**Q8.** Write a program to print the Dataframe df, one column at a time.

**Q9.** DataFrame student consist of 5 records of students that include rollno, name, gender and age as columns.

i. What is the shape of DataFrame?

ii. What does the print(s.ndim) display?

**Q10. Case-Based Question.**

Answer the following based on the series given below.

```
import pandas as pd
```

```
list1=[1,2,3,4,5,6,7,8]
```

```
list2=['swimming','tt','skating','kho kho', 'bb', 'chess', 'football','cricket']
```

```
school=pd.Series(list1,index=list2)
```

```
school.name=("little")
```

```
print (school.tail(3)) # statement 1
```

```
print (school["tt"]) # statement 2
```

```
print (school[2:4]) # statement 3
```

- i. Choose the correct name of the series object given above.
- a. list1                      b. list2                      c. School                      d. little
- ii. Choose the correct output for the statement:  
`print (school.tail(3)) # statement 1`
- a. swimming 1  
     tt 2  
     skating 3
- b.chess 6  
     football 7  
     cricket 8
- c. 4
- d. kho kho 4  
     bb 5  
     chess 6  
     football 7  
     cricket 8

- iii. Choose the correct output for the statement:  
`print (school["tt"]). # statement 2`
- a.2                              b.3                              c. tt                              2 d. true

- iv. Identify the correct output for:  
`print (school[2:4]) # statement 3`
- a. skating 3  
     kho kho 4
- b. tt 2  
     skating 3  
     kho kho 4
- c. skating 3  
     kho kho 4  
     bb 5
- d. skating 3  
     kho kho 4  
     bb 5  
     chess 6  
     football 7  
     cricket 8

### CHAPTER - 3 (PLOTING WITH PYPLOT)

**Read the questions and tick the correct option.**

- Q1.** What is the minimum number of arguments required for plot() function in matplotlib?  
 a. 1                              b. 2                              c. 3                              d. 4
- Q2.** \_\_\_\_\_ is the function to save the graph.  
 a. Savefig( )                      b. Savefigure( )                      c. Savegraph( )                      d. Savechart( )
- Q3.** Out of the following, which function cannot be used for customization of charts in Python?  
 a. xlabel( )                      b. colour( )                      c. title( )                      d. xticks( )
- Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as
- a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. ASSERTION(A):** The matplotlib library of Python is used for data visualization.

**REASON(R):** The PyPlot interface of matplotlib library is used for 2D plotting.

**Q5. ASSERTION(A):** Line graph is a tool for comparison and is created by plotting a series of several points and connecting them with a straight line.

**REASON(R):** You should never use a line chart when the chart is in a continuous data set.

**Subjective type questions:**

**Q6.** Name the functions you will use to create a (i) line chart (ii) Bar chart.

**Q7.** The score of four teams in 5 IPL matches is available to you. Write a program to plot these in a bar chart.

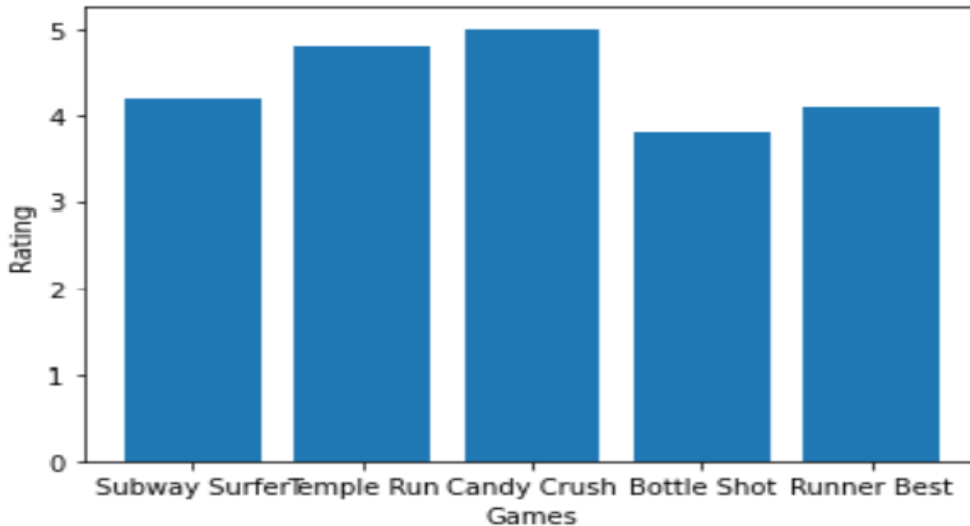
**Q8.** What is histogram ? How do you create histograms in Python?

**Q9.** Plot the following data using a line plot:

Day	1	2	3	4	5	6	7
Tickets Sold	2000	2800	3000	2500	2300	2500	1000

**Q10. Case-Based Question.**

Mr. Sharma is working in a game development industry and he was comparing the given chart on the basis of the rating of the various games available on the play store.



He is trying to write a code to plot the graph. Help Mr. Sharma to fill in the blanks of the code and get the desired output.

```
import _____ #Statement 1
```

```
Games=["Subway Surfer","Temple Run","Candy Crush","Bottle Shot","Runner Best"]
```

```
Rating=[4.2,4.8,5.0,3.8,4.1]
```

```
plt. _____ (Games,Rating) #Statement 2
```

```
plt.xlabel("Games") plt. _____ ("Rating") #Statement 3
```

```
plt. _____ #Statement 4
```

i. Choose the right code from the following for **statement 1**.

a. matplotlib as plt

b. pyplot as plt

c. matplotlib.pyplot as plt

d. matplotlib.pyplot as pyplot

ii. Identify the name of the function that should be used in statement 2 to plot the above graph.

a. line()

b. bar()

c. hist()

d. barh()

iii. Choose the correct option for the statement 3

a. title("Rating")

b. ytitle("Rating")

c. ylabel("Rating")

d. yaxis("Rating")

iv. Choose the right function/method from the following for the statement 4.

a. display()

b. print()

c. bar()

d. show()

## CHAPTER – 4 (IMPORTING/EXPORTING DATA BETWEEN CSV FILES/MYSQL AND PANDAS)

Read the questions and tick the correct option.

- Q1.** Full form of CSV is \_\_\_\_\_.
- Comma Separated Values
  - Common Separated Values
  - Clear Separated Value
  - Clear Sequence Value
- Q2.** A CSV file can take \_\_\_\_ character as separator.
- ,
  - ~
  - |
  - \t
- Q3.** To skip first 5 rows of CSV file, which argument will you give in read\_csv()?
- skiprows = 5
  - skip\_rows = 5
  - skip = 5
  - noread = 5
- Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as**
- Both A and R are true and R is the correct explanation for A.
  - Both A and R are true and R is not the correct explanation for A.
  - A is true but R is false.
  - A is false but R is true.
- Q4. ASSERTION(A):** Python Panda library offers functionality to interact with a CSV file.  
**REASON(R):** Panda's read\_csv() and to\_csv() functions can read-from and write-to CSV files.
- Q5. ASSERTION(A):** The read\_csv() functions reads a csv file's data into a dataframe.  
**REASON(R):** The to\_csv() function writes a dataframe on to a csv file.
- Subjective type questions:**
- Q6.** Write a program to read details such as Item, Sales made in a dataframe and then store this data in a CSV file.
- Q7.** Write a program that reads from a CSV files where the separator character is '#'.Read only first 5 rows in your dataframe.
- Give column headings as EmpName, Designation, Salary.
  - Make sure to read first row as data and not as column headers.
- Q8.** Explain briefly the CSV format of storing files.
- Q9.** Write a program that reads from a CSV file where the separator character is '\$'. Read only first 5 rows in your dataframe.
- Give column headings as ItemName, Quantity, Price.
  - Make sure to read first row as data and not as column headers.
- Q10. Case-Based Question.**
- Ms. Payal wants to create a CSV file from another CSV file. The file contains 5 columns EmpName, EmpId, Salary, Designation, DOB. Payal wants to read first three rows from the file. She has found the code to do the task she wants , but one line of code is missing. Help her to complete the code.
- ```
import pandas as pd
df = pd.read_csv("E:\\Data\\Employee.csv")
df.to_csv("E:\\Data\\Emp.csv", _____)
```

## CHAPTER – 5 (MYSQL SQL REVISION TOUR)

Read the questions and tick the correct option.

- Q1.** What is the full form of SQL?
- Structured Query Language
  - Structured Query List
  - Simple Query Language
  - Simple Query List
- Q2.** What is the full form of DDL?
- Dynamic Data Language
  - Detailed Data Language

- c. Data Definition Language
- d. Data Derivation Language

- Q3.** Which of the following types of table constraints will prevent the entry of duplicate rows?  
 a. Unique                                      b. Distinct                                      c. Primary Key                                      d. NULL
- Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as  
 a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. ASSERTION(A):** The PRIMARY KEY and FOREIGN KEY constraints are similar.  
**REASON(R):** The FOREIGN KEY constraint links a column of a table with the PRIMARY KEY constraint of another table.

**Q5. ASSERTION(A):** INSERT, UPDATE, DELETE, SELECT are the DML commands.  
**REASON(R):** The DML commands manipulate the data stored in the database tables.

**Subjective type questions:**

**Q6.** What is a Unique Key? Is it a primary key?

**Q7.** What are constraints?

**Q8.** What is wrong with the following statement?

```
SELECT*FROM Employee
WHERE grade = NULL;
```

Write the corrected form of the above SQL statement.

**Q9.** What are aggregate functions? How are they useful?

**Q10.Case-Based Question.**

Carefully observe the following table named 'Furniture':

| FID  | NAME            | DATEOFPURCHASE | COST  | DISCOUNT |
|------|-----------------|----------------|-------|----------|
| B001 | Double Bed      | 03-Jan-2018    | 45000 | 10       |
| T010 | Dining Table    | 10-Mar-2020    | 51000 | 5        |
| B004 | Single Bed      | 19-Jul-2021    | 22000 | 0        |
| C003 | Long Back Chair | 30-Dec-2016    | 12000 | 3        |
| T006 | Console Table   | 17-Nov-2019    | 15000 | 12       |

Write SQL commands to:

- i. Display the total discount of all the furniture's whose cost is greater than 15000.
- ii. To list all the details of furniture whose discount is greater than 5 and name starts with 'D'.
- iii. To display the records in decreasing order of cost.
- iv. To display the date of purchase of Double Bed, Dining Table, Long Back Chair.

**CHAPTER – 6 (MYSQL FUNCTIONS)**

**Read the questions and tick the correct option.-**

**Q1.** Which of the following is not a text function?  
 a. TRIM ( )                                      b. TRUNCATE ( )                                      c. LEFT ( )                                      d. MID ( )

**Q2.** What will be returned by the given query ?  
 SELECT INSTR('INDIA', 'DI');  
 a. 2                                      b. 3                                      c. -2                                      d. -3

**Q3.**What is the output –  
 SELECT CONCAT(5,5);  
 a. 55                                      b. 10                                      c.5                                      d.25

- Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as  
 a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. ASSERTION(A):** Single row functions when applied on a column in a table, yield multiple values equal to number of row in the table.

**REASON(R):** Single row functions work with individuals rows and yield values accordingly.

**Q5. ASSERTION(A):** The count(\*) will yield a single values while round( ) will yield number of values equal to the cardinality of the table.

**REASON(R):** The count(\*) is a multiple-rows function and round( ) is a single-row function.

**Subjective type questions:**

**Q6.** While dealing with string data type in MySQL, its observed that sometimes unnecessary space character comes in between which hampers the successful execution of a string manipulation module. Name the suitable MySQL function (s) to remove leading, trailing and both type of space characters from a string. Also give MySQL queries to depict the same.

**Q7.** Find the output of the following SQL Queries:

- i. SELECT ROUND(7658.345,2);
- ii. SELECT MOD(ROUND(13.9,0),3);

**Q8.** Predict the output of the following SQL queries:

- i. SELECT TRIM(" ALL THE BEST ");
- ii. SELECT POWER(5,2);
- iii. SELECT UPPER (MID("start upindia" , 10);

**Q9.** Write the names of SQL functions to perform the following operations:

- i. Display name of the Month from your date of birth.
- ii. Convert email-id to lowercase.
- iii. Count the number of characters in your name.

**Q10. Case-Based Question.**

Shivam Kumar, a car dealer has stored the details of all cars in her showroom in a table called CARMARKET. The table CARMARKET has attributes CARCODE which is a primary key, CARNAME, COMPANY, COLOR, COST (in lakh rupees) of the car and DOM which is the Date of Manufacture of the car. Answer the questions based on the table CARMARKET .

| CARCODE | CARNAME | COMPANY  | COLOR  | COST  | DOM        |
|---------|---------|----------|--------|-------|------------|
| C01     | Baleno  | Suzuki   | Blue   | 5.90  | 2019-11-07 |
| C02     | Indigo  | Tata     | Silver | 12.90 | 2020-10-15 |
| C03     | GLC     | Mercedes | White  | 62.38 | 2020-01-20 |
| C04     | A6      | Audi     | Red    | 58.55 | 2018-12-29 |

- i. Display the carname along with the charges rounded off to 1 digit after decimal place.
- ii. Display the carname, color and position of the character 'E' in the color of all the cars.
- iii. Display the carname ,name of the company in lower case of all cars whose year (of dom) is 2020.

## CHAPTER – 7 (QUERYING USING SQL)

**Read the questions and tick the correct option.-**

**Q1.** The avg() function in MySql is an example of \_\_\_\_\_.

- a. Math function      b. Text function      c. Date Function      d. Aggregate Function

**Q2.** Which among the following belongs to an "Aggregate function"?

- a. COUNT      b. LOWER      c. UPPER      d. LENGTH

**Q3.** Which SQL keyword is used to retrieve a maximum value?

- a. MAXIMUM      b. MOST      c. UPPER      d. MAX

**Q4.** and **Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.

- c. A is true but R is false.
- d. A is false but R is true.

**Q4. ASSERTION(A):** The GROUP BY clause can use any type of function.

**REASON(R):** The GROUP BY clause combines a number of rows in a group and applies functions on it.

**Q5. ASSERTION(A):** Both WHERE and HAVING clauses are used for specifying conditions.

**REASON(R):** WHERE and HAVING clauses of the SELECTION query can be used interchangeably.

**Subjective type questions:**

**Q6.** Table student has the columns RNO and SCORE. It has 3 rows in it. Following two SQL statements

were entered that produced the output (AVG(SCORE) as 45 and COUNT(SCORE) as 2):

- i. AVG(SCORE)
- ii. COUNT(SCORE)

Data in SCORE column is same in two rows. What data is present in the SCORE column in the three rows?

**Q7.** Are count(\*) and count( ) the same functions? Why/ Why not?

**Q8.** Shanya Khanna is using a table Employee. It has the following columns : [Admno, Name, Aggand Stream]. Column Agg contain Aggregate marks. She wants to display the highest Aggregate obtained in each Stream. She wrote the following statement:

**SELECT Stream, Max(Agg) FROM Employee;**

But she did not get the desired result. Rewrite the above query with necessary changes to help her get the desired output.

**Q9.** Explain the difference between where and having clauses in SQL with the help of a suitable example.

**Q10. Case-Based Question.**

**Satyam, a database analyst has created the following table:**

**Table: Student**

| RegNo | SName   | Stream     | Optional | Marks |
|-------|---------|------------|----------|-------|
| S1001 | Akshat  | Science    | CS       | 99    |
| S1002 | Harshit | Commerce   | IP       | 95    |
| S1003 | Devika  | Humanities | IP       | 100   |
| S1004 | Manreen | Commerce   | IP       | 98    |
| S1005 | Gaurav  | Humanities | IP       | 82    |
| S1006 | Saurav  | Science    | CS       | NULL  |
| S1007 | Bhaskar | Science    | CS       | 95    |
| S1007 | Bhaskar | Science    | CS       | 96    |

He has written following queries:

- i. Select sum(MARKS) from student where OPTIONAL= 'IP' and STREAM= 'Commerce';
- ii. Select max(MARKS)+min(MARKS) from student where OPTIONAL= 'CS';
- iii. Select avg(MARKS) from student where OPTIONAL= 'IP';
- iv. Select length(SNAME) from student where MARKS is NULL;

Help him in predicting the output of the above given queries.

## CHAPTER- 8 (JOINTS and SET OPERATION)

**Read the questions and tick the correct option.**

**Q1.** Which of the following cannot be created using joins?

- a. Equijoins
- b. Cartesian Product
- c. Natural Join
- d. Union



- Q2.** The operation whose result contains all pairs of tuples from the two relations, regardless of whether their attribute values match.
- a. Join                      b. Cartesian product                      c. Intersection                      d. Set difference
- Q3.** A \_\_\_\_\_ is a query that retrieve rows from more than one table or view:
- a. Start                      b. End                      c. Join                      d. All of these
- Q4. and Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as
- a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. ASSERTION(A):** There must be some identical columns in tables in order to get Cartesian product.

**REASON(R):** The Cartesian product returns all possible combination of rows from the participating tables.

**Q5. ASSERTION(A):** Cartesian product and joins are related.  
**REASON(R):** Cartesian product is a join without any condition.

**Subjective type questions:**

- Q6.** Two engineers in the same room have connected their Palm-tops using Bluetooth for Working on a Group presentation. Out of the following, what kind of Network have they formed? LAN,MAN,PAN,WAN.
- Q7.** Identify the type of Topology from the following:
- i. If each node is connected with the help of independent cable with the help of a central switching (communication controller).  
 ii. If each node is connected with the help of a single co-axialcable.
- Q8.** Write the functions of the following pieces of network hardware: a. Modem b. Switch
- Q9.** How is it easier to diagnose fault in Star topology than in bus topology? Write any two advantages of star topology over bus topology.
- Q10. Case-Based Question.**

Consider the table EXAM given below. Write commands in MySQL for (i) to (iv) and output for (v) to (vii).

TABLE EXAM

| No. | Name    | Stipend | Subject     | Average | Division |
|-----|---------|---------|-------------|---------|----------|
| 1.  | Sharon  | 400     | English     | 38      | THIRD    |
| 2.  | Amal    | 680     | Mathematics | 72      | FIRST    |
| 3.  | Vedant  | 500     | Accounts    | 67      | FIRST    |
| 4.  | Shakeer | 200     | Informatics | 55      | SECOND   |
| 5.  | Anandha | 400     | History     | 85      | FIRST    |
| 6.  | Upasana | 550     | Geography   | 45      | THIRD    |

- i. To list the Names of those students, who have obtained Division as FIRST in ascending order of Name.
- ii. To display a report listing Name, Subject and Annual Stipend received assuming that the Stipend column has monthly Stipend.
- iii. To count the number of students, who have either Accounts or Informatics as Subject.
- iv. To insert a new row in the table EXAM.  
 6, 'Mohan', 500, 'English', 73, 'SECOND' (HOTS; Delhi 2011)
- v. SELECT AVG(Stipend) FROM EXAM WHERE Division = 'THIRD';
- vi. SELECT COUNT (DISTINCT Subject) FROM EXAM;
- vii SELECT MIN(Average) FROM EXAM WHERE Subject = 'English';

**CHAPTER- 9 (INTRODUCTION TO COMPUTER NETWORK)**

**Read the questions and tick the correct option.**

**Q1.** Which of the following is not a network topology:

- a.Star                                      b.Bus                                      c.Tree                                      d.Bug

**Q2.** Central computer which is powerful than other computers in the network is called as \_\_\_\_\_.

- a.Client                                      b. Server                                      c. Hub                                      d. Switch

**Q3.** MAN stands for \_\_\_\_\_.

- a. Metropolitan Area Network  
b. Main Area Network  
c. Metropolitan Access Network  
d. Metro Access Network

**Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as**

- a. Both A and R are true and R is the correct explanation for A.  
b. Both A and R are true and R is not the correct explanation for A.  
c. A is true but R is false.  
d. A is false but R is true.

**Q4. ASSERTION(A):** The tree topology is a hybrid topology created through a combination of Bus and Star topologies.

**REASON(R):** In tree topologies, at a time either bus topology transmission is followed or star topology transmission takes place, but never both.

**Q5. ASSERTION(A):** A server is a computer but not every computer on a network, is a server.

**REASON(R):** A computer having the capabilities to server the requests of other network nodes, is a server.

**Subjective type questions:**

**Q6.** Two engineers in the same room have connected their Palm-tops using Bluetooth for Working on a Group presentation. Out of the following, what kind of Network have they formed? LAN,MAN,PAN,WAN.

**Q7.** Identify the type of Topology from the following:

- i. If each node is connected with the help of independent cable with the help of a central switching (communication controller).  
ii. If each node is connected with the help of a single co-axialcable.

**Q8.** Write the functions of the following pieces of network hardware: i. Modem    ii. Switch

**Q9.** How is it easier to diagnose fault in Star topology than in bus topology? Write any two advantages of star topology over bus topology.

**Q10. Case-Based Question.**

Anutulya Creations-A start-up fashion house has set up its main centre at Kanpur, Uttar Pradesh for its dress designing, production and dress supplying activities. It has 4 blocks of buildings.

Distance between the various blocks is as follows:

|        |      |
|--------|------|
| A to D | 50 m |
| A to P | 60 m |
| A to S | 110m |
| D to S | 60m  |
| P to S | 50m  |
| P to D | 150m |

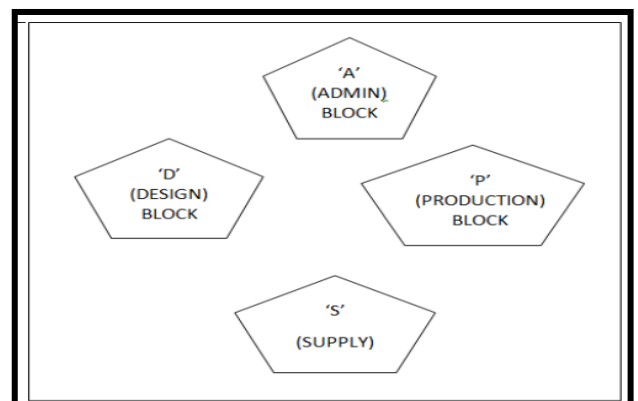
Numbers of computers in each block

Block A – 20

Block D – 80

Block P – 15

Block S – 8



Based on the above specifications, answer the following questions:

- i. Out of LAN, WAN and MAN, what type of network will be formed if we interconnect different computers of the campus? Justify.
- ii. Suggest the topology which should be used to efficiently connect various blocks of buildings within Kanpur centre for fast communication. Also draw the cable layout for the same.
- iii. Suggest the placement of the following device with justification i. Repeater ii. Hub/Switch
- iv. Now a day, video-conferencing software is being used frequently by the company to discuss the product details with the clients. Name any one video conferencing software. Also mention the protocol which is used internally in video conferencing software.

## **CHAPTER-10 (INTRODUCTION TO INTERNET AND WEB)**

**Read the questions and tick the correct option.-**

**Q1.** A website is a collection of \_\_\_\_\_.

- a. Web Server                      b. Web Pages                      c. Web Browser                      d. WWW

**Q2.** Google Chrome is an example of \_\_\_\_\_.

- a. Programming Language  
b. Web Server  
c. Protocol  
d. Web Browser

**Q3.** The First Page we generally view when we open the browser is called.

- a. Default page                      b. First page                      c. Home page                      d. Landing Page

**Q4. and Q5. are ASSERTION AND REASONING based questions. Mark the correct choice as**

- a. Both A and R are true and R is the correct explanation for A.  
b. Both A and R are true and R is not the correct explanation for A.  
c. A is true but R is false.  
d. A is false but R is true.

**Q4. ASSERTION(A):** WWW and the Internet are not the same.

**REASON(R):** WWW is a set of programs, standards, and protocols that allows propagation and navigation of multimedia and hypermedia document.

**Q5. ASSERTION(A):** A website and the home page of a website has URL.

**REASON(R):** The Landing page of a website is called home page.

**Subjective type questions:**

**Q6.** Rushil thought 'WWW' and 'Internet' are synonyms i.e., they meant same and can be used interchangeably. But the teacher said that they are not same. Help him to understand the meaning of both the terms with the help of a suitable example of each.

**Q7.** XYZ has just created a website for her company and now need to host it. Briefly discuss the role of a web server in hosting a website.

**Q8.** Give any three applications on the Internet.

**Q9.** What is an e-mail? Write one advantage and one disadvantage of e-mail

**Q10. Case-Based Question.**

Vidya Devi, a retired school principal, was inspired by her granddaughter who uses technology for her day to day activities. Being a learner and teacher all her life, she wanted to open an email account and interact with her friends and family. Her granddaughter created an email account for her and gradually she started sending mails to her friends and family. This was a big achievement for her. Her granddaughter explained how emails are sent, how to create an email address, what protocols are used. Some of these details were too technical for her, but she never gave up. There are few doubts/misconceptions in her mind which you can help her with.

i. Unsolicited e-mail advertising is known as

- a. newsgroup                      b. junk ads                      c. spam                      d. Junk file

ii. Which of the following is the correct format of email address?

- a. name@website@info  
b. name@website.info

- c. www.nameofwebsite.com
- d. name.website.com
- iii. Mail access starts with client when user needs to download email from the
  - a. mail box
  - b. mail server
  - c. IP server
  - d. Internet
- iv. To use email service, one needs to register with\_\_\_\_\_
  - a. Internet Service Provider
  - b. Email Service Provider
  - c. A company
  - d. No need to register

## CHAPTER-11 (SOCIETAL IMPACTS)

**Read the questions and tick the correct option.**

**Q1.** Which of the following is not an intellectual property?

- a. A poem written by a poet
- b. An original painting made by a painter
- c. Trademark of a Company
- d. A remixed song

**Q2.** \_\_\_\_\_ are the records and traces that we left behind as we use Internet.

- a. Digital Footprints
- b. Data Protection
- c. Plagiarism
- d. Digital Data

**Q3.** We should exhibit proper manners and etiquettes while being online. Choose the right net etiquette (s) from the following:

- a. Avoid Cyber Bullying
- b. Respect Other's Privacy
- c. No Copyright violation
- d. All of the above

**Q4. and Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as

- a. Both A and R are true and R is the correct explanation for A.
- b. Both A and R are true and R is not the correct explanation for A.
- c. A is true but R is false.
- d. A is false but R is true.

**Q4. ASSERTION(A):** The patents are available online.

**REASON(R):** Patents are the grant of exclusive right(s) of an invention.

**Q5. ASSERTION(A):** Freeware and Free software mean the same.

**REASON(R):** Free software may be chargeable.

**Subjective type questions:**

**Q6.** What do you understand by Net Etiquettes? Explain any two such etiquettes.

**Q7.** Expand the terms:- i. FSF      ii. OSI      iii. FLOSS

**Q8.** List any two health hazards related to excessive use of Technology.

**Q9.** Write the names of any two software which can be categorised as Open Source.

**Q10. Case-Based Question.**

Samridh has recently changed his school so he is not aware of the people, but someone is posting negative , demeaning comments on his social media profile. He is also getting repeated mails from

unknown people. Every time he goes online, he finds someone chasing him online.

i. Samridh is a victim of \_\_\_\_\_.

- a. Eavesdropping
- b. Stolen identity
- c. Phishing
- d. Cyber stalking

ii. The action that Samridh should take :

- a. He should ONLY share with his friends
- b. He should NOT share with anyone as it can cause serious problem
- c. He should immediately report to the police
- d. He should bring to the notice of his parents and school authorities.

iii. \_\_\_\_\_ is a set of moral principles that governs the behaviour of a group or individual and regulates the use of computers.

- a. Copyright                      b. Computer ethics                      c. Property rights                      d. Privacy law
- iv. Samridh needs to protect his personal information or data from unintentional and intentional attacks and disclosure which is termed as \_\_\_\_\_.
- a. Digital right                      b. Copyright                      c. Privacy                      d. Intellectual property

## CHAPTER-12 DATA PROTECTION

**Read the questions and tick the correct option.**

- Q1.** Which of the following is example of Social media?  
 a. Facebook                      b. Twitter                      c. Instagram                      d. All of the above
- Q2.** Which of the following is/are source of spreading viruses from one computer to another?  
 a. Email                      b. Infected data                      c. Infected programs                      d. All of the above
- Q3.** Which of the following is not a cyber crime?  
 a. Phishing                      b. Ransomware                      c. Hacking                      d. Tracking
- Q4. and Q5.** are ASSERTION AND REASONING based questions. Mark the correct choice as  
 a. Both A and R are true and R is the correct explanation for A.  
 b. Both A and R are true and R is not the correct explanation for A.  
 c. A is true but R is false.  
 d. A is false but R is true.

**Q4. ASSERTION(A):** Data may be stolen through Eavesdropping.

**REASON(R):** Unauthorised monitoring of other people’s communication is called Eavesdropping.

**Q5. ASSERTION(A):** Digital certificates are issued to verify the identity of a message sender.

**REASON(R):** Digital signatures authenticate the identity of the creator/ producer of digital information.

**Subjective type questions:**

**Q6.** I can keep you signed in.

I can remember your site preferences.

I can give you locally relevant content.

Who am I?

**Q7.** Write the significance of firewall in a computer’s security.

**Q8.** Describe why authentication is important for file protection.

**Q9.** Explain phishing. How is pharming similar to and different from phishing.

**Q10. Case-Based Question.**

The school offers Wi-Fi to the students of Class XII. For communication, the network security-staff of the school is having a registered URL "schoolwifi.edu". On 17th September 2017, emails were received by all the students regarding expiry of their passwords. Instructions were also given renew their password within 24 hours by clicking on particular URL provided. On the bases of the above case study, answer the questions given below:

i. Specify which type of cybercrime is it.

- a. Spamming                      b. Phishing                      c. Identity Theft                      d. Hacking

ii. Unsolicited commercial email is known as:

- a. Malware                      b. Virus                      c. Spam                      d. Spyware

iii. WiFi stands for \_\_\_\_\_

- a. Wireless Internet Frequent Interface  
 b. Wireless Functioning  
 c. Wireless Fidelity  
 d. Wire Free Internet

iv. Ideally, what characters should be used in a password to make it strong?

- a. Letters and numbers only  
 b. Mixed Case (Upper and Lower)  
 c. Special characters  
 d. All of above