

**1<sup>st</sup> Pre-Board 2020**  
**Class XII**  
**INFORMATICS PRACTICES (065)**

<b>Max Marks: 70</b>	<b>Time: 3 hrs</b>
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**General Instructions:**

1. This question paper contains two parts A and B. Each part is compulsory.
2. Both Part A and Part B have choices.
3. Part-A has 2 sections:
  - a. Section – I is short answer questions, to be answered in one word or one line.
  - b. Section – II has two case studies questions. Each case study has 4 case-based subparts. An examinee is to attempt any 4 out of the 5 subparts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
  - a. Section-I is short answer questions of 2 marks each in which two questions have internal options.
  - b. Section-II is long answer questions of 3 marks each in which two questions have internal options.
  - c. Section-III is very long answer questions of 5 marks each in which one question has question has internal option.

**Part - A**

**Section - I**

**Attempt any 15 questions from questions 1 to 21**

- 1.Fill in the blanks: 1
  - i.Full form of URL is\_\_\_\_\_.
  - ii.Full form of IP is\_\_\_\_\_.
2. Fill in the blanks : 1

The command used to create a line graph is \_\_\_\_\_

  - a. plt.line()
  - b. plt.plot()
  - c. plt.xlabel()
  - d. plt.ylabel()
- 3.Write the output of the following SQL command. 1

```
select round(49.88,1);
```

  - a. 49.88
  - b. 49.8
  - c. 49.9
  - d. 50
4. Given a Pandas series called Sequences, the command which will display the last 4 rows is \_\_\_\_\_ 1
  - a. print(Sequences.tail(4))
  - b. print(Sequences.Tail(4))
  - c. print(Sequences.tails(4))
  - d. print(Sequences.Tails(4))
5. Given the following Series S1 and S2: 1

S1		S2	
A	23	A	8
B	50	B	2
C	34	C	7
D	70	D	9

Write the command to multiply both the series S1 and S2

6. Name the functions to create the following: 1

(a) line chart (b) histogram

7. To prevent unauthorized access to and / or from the network, a system known as \_\_\_\_\_, can be implemented by hardware and / or software. 1

8. In a DataFrame, axis=0 represents the \_\_\_\_\_ elements. 1

9. Which of the following is a network topology : 1

Switch, Hub , Tree, Bug , Bridge

10. A web-site is a collection of- 1

- (a) HTML documents
- (b) Graphic files
- (c) audio and video files
- (d) all the above

11. The sum() function in MySQL is an example of \_\_\_\_\_ . 1

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

12. A \_\_\_\_\_ is a specified computer which serves the requests made by web browsers. 1

13. In Pandas the function used to check for null values in a DataFrame is \_\_\_\_\_ 1

14. One who gains unauthorized access to your computer or network or digital files, with an intention to steal or manipulate data or information or to install malware is called \_\_\_\_\_ . 1

15. A \_\_\_\_\_ is a program that lets you visit different sites on the Net and display their offerings on your own computer. 1

16. "The dynamic websites are faster than static websites." Is it false? 1

17. E-waste management requires proper recycling and recovery of the disposed material. How Refurbishment and reuse are related with it? 1

18. Write the output of the following SQL command. 1

SELECT TRUNCATE(7.956,2):

- (a)7.95
- (b)7.96
- (c)8
- (d)8.0

19. Which of the following will give the same answer irrespective of the NULL values in the specified column: 1

- (a)MIN()
- (b)MAX()
- (c)SUM()
- (d)None of the these

20. A network having a span of city is called a \_\_\_\_\_ . 1

21. "A hub can be replaced with a switch." Write True or False. 1

**Both the case study based questions (22 & 23 ) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark .**

22. Consider the following panda series and answer any four questions from (i)-(v)

a 111

b 112

c 113

d 114

e 115

(i) Write down the command that will give the following output- 1

b 112

c 113

a. `print(s[:3])`

b. `print(s[0:3])`

c. `print([1:3])`

d. `print([2:4])`

(ii) Rekha needs to know the value against the 'c'. Help her to identify the correct statement/s that : 1

a. `print(s[c])`

b. `print(s(c))`

c. `print('s'['c'])`

d. `print(s['c'])`

(iii) Write down the command that will give the following output- 1

b 112

c 113

d 114

a. `print(s.iloc[1:4])`

- b. `print(s.iloc[2:4])`
- c. `print(s.iloc(1:4))`
- d. `print(s.iloc[1:4:2])`

(iv) Which of the following command will display the series values by adding 10 in each value. 1

- a. `print(s[+10])`
- b. `print(s+10)`
- c. `print(s)+10`
- d. `print(s)+print(10)`

(v) Rohit, the IP teacher wants to delete the value against index 'd'. Help him to choose the command to do so: 1

- a. `print(s.drop(d))`
- b. `print(s.drop('d'))`
- c. `print(drop('d'))`
- d. `print(s.drop['d'])`

23. Consider the following table –Person

PID	PName	DOB	Gender	Address	Salary
P101	RRajkumar	1977-01-12	M	Delhi	45678.99
P102	S Singh	1965-12-31	M	Delhi	78954.50
P103	R Shukla	1987-11-23	F	Mumbai	23456.00
P104	K Kamal	1999-05-21	M	Mumbai	43222.99
P105	A Bose	1989-01-01	F	Kolkota	31000.00

(i) State the command that will give the output as : 1

PName	Address
RRajkumar	Delhi
S Singh	Delhi

- a. `Select PName,Address from Person where Address is Delhi;`

- b. Select PName,Address from Person where Address Like “Delhi”;
- c. Select PName,Address from Person where Address =” Delhi”;
- d. Select PName,Address from Person where Address !=”Kolkota”;

(ii) What will be the output of the following command?

1

Select \* from Person where gender =”F” order by Salary;

a.

PID	PName	DOB	Gender	Address	Salary
P103	R Shukla	1987-11-23	F	Mumbai	23456.00

b.

PID	PName	DOB	Gender	Address	Salary
P105	R Shukla	1987-11-23	F	Mumbai	23456.00
P103	A Bose	1989-01-01	F	Kolkota	31000.00

c.

PID	PName	DOB	Gender	Address	Salary
P105	A Bose	1989-01-01	F	Kolkota	31000.00
P103	R Shukla	1987-11-23	F	Mumbai	23456.00

d.

PID	PName	DOB	Gender	Address	Salary
P103	R Shukla	1987-11-23	F	Mumbai	23456.00
P105	A Bose	1989-01-01	F	Kolkota	31000.00

(iii) Rekha has given the following command to obtain address wise highest Salary

Select max(Salary) from Person where group by Address;

but she is not getting the desired result. Help her by writing the correct command.

1

- a. Select Max(Salary) from Person order by Address;

- b. Select Address,Max(Salary) from Person group by Salary;
- c. Select Address,Max(Salary) from Person group by Address;
- d. Select Address,Max(Salary) from Person order by Address;

(iv) State the command to display the gender wise average salary from Person table— 1

- a. Select AVG(Salary) from Person order by Gender;
- b. Select Gender,AVG(Salary) from Person;
- c. Select Gender,AVG(Salary) from Person group by Gender;
- d. Select Gender,AVG(Salary) from Person order by Gender;

(v) Help Meena to write the command to display the name of the oldest person? 1

- a. select Pname,min(DOB) from person ;
- b. select Pname,max(DOB) from person ;
- c. select Pname,min(DOB) from person group by Pname ;
- d. select Pname,maximum(DOB) from Person;

<b>Part - B</b>
<b>Section – I</b>

24. Consider a given Series , S1:

	Students
ix	200
x	210
xi	220
xii	250

Write a program in Python Pandas to create the series.(Where ix,x,..xi consider as indexes of the series) 2

25. Write the definition function in MySQL. Give examples. 2

OR

What is the difference between the ‘order by’ and ‘order by desc’ clause when used along with the select statement. Explain with an example.

26. Consider the decimal number x with value 45321.9078. Write commands in SQL to: 2

i. round it to 1 decimal place

ii. round it to 3 places before the decimal

27. Given a Series of percentiles [23,65,89,45,87,38,90,34,77,82], print all the elements that are above the 60th percentile. 2

28. Rekha writes the following commands with respect to a table Student having fields, Roll,Name,Marks,Grade

Command1 : Select count(\*) from Students;

Command2: Select count(Grade) from Students;

She gets the output as 22 for the first command but gets an output 20 for the

second command. Explain the output with justification. 2

29. Consider the following SQL string: "South Point School" 2

Write commands to display:

a. "School"

b. "Point"

OR

Considering the same string "South Point School"

Write SQL commands to display:

a. the position of the substring 'int' in the string "South Point School"

b. the last 5 letters of the string

30. Consider the following DataFrame,MFrame- 2

A B C

0 1 4 7

1 2 5 8

2 3 6 9

Write commands to-

(i)Add a new column D=[10,11,12]

(ii)Delete the column B

31. Expand the following terms related to Computer Networks: 2

a.PAN      b.NIC      c.WWW      d.VoIP

32. List any two mental health hazards related to excessive use of Technology. 2

33. List two points of network security components. 2

**Section -II**

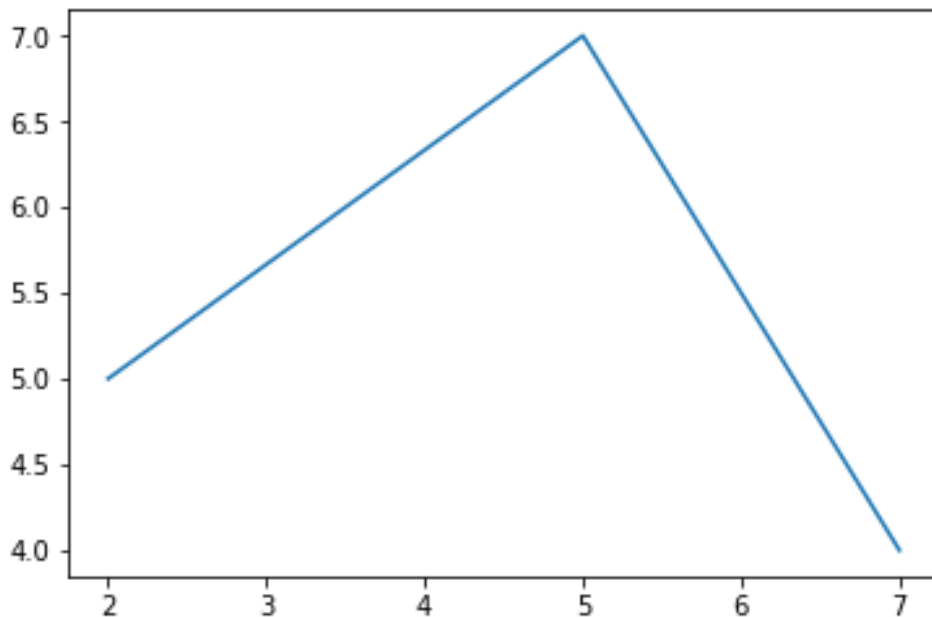
34. Write python code to create a Series object using the Python sequence (23,56,12,67,34,65,44,90,18,27). Display the series in ascending order of the values. 3

35 Explain the role of online social media campaigns, crowd sourcing and smart mobs in society . 3

Or

List the differences between Free software and Open source software.

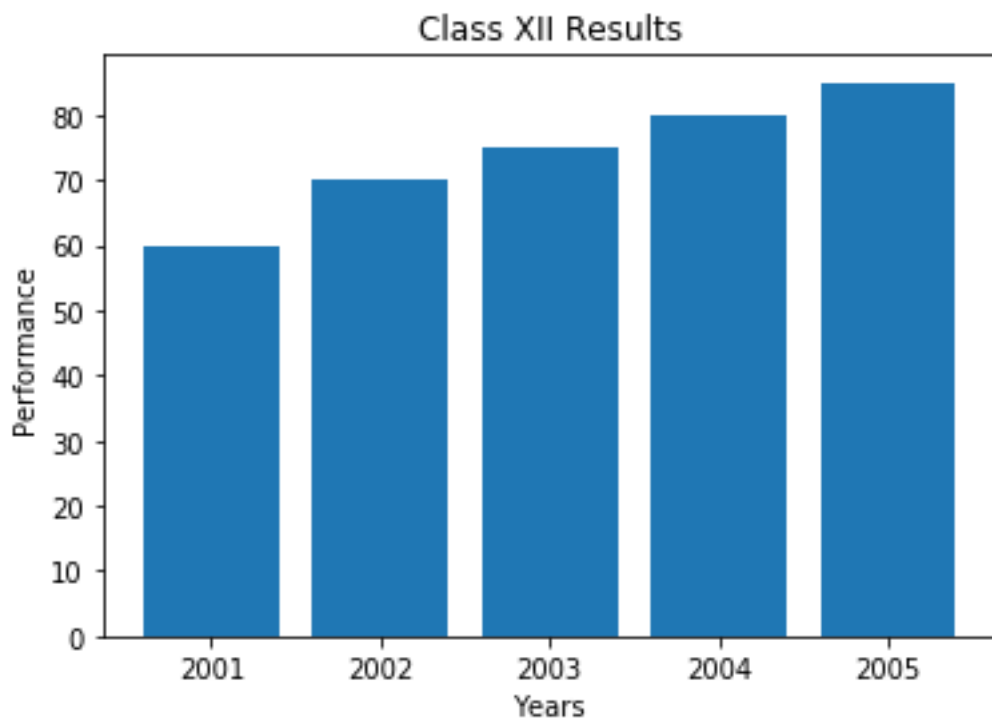
36. Consider the following graph . Write the code to plot it. 3



Or



Write the python code to draw following bar graph representing the number of students in each class.



37. A relation EMP is given below :

3

Table-EMP

EmpNo	EName	Salary	Job
101	Raj Kumar	5000	Clerk
102	Bina Rai	12000	Manager
103	Amir Khan	6000	Salesman
104	Kuldeep Dutta	6000	Salesman
105	Jatin jain	7000	Accountant
106	Mita Singh	6000	Clerk
107	Vimal Jain	10000	Manager

Write SQLcommands to:

- Display the average salary of each type of job.
- Count the type of jobs .
- Display the total salary of each type of job.

### Section -III

38. Write a program in Python Pandas to create the following DataFrame df1 from list of Dictionaries :

5

```

x  y  z
0  10 20.0 NaN
1  50 40.0 50.0
2  70  NaN 90.0

```

Perform the following operations on the DataFrame :

- Fill all NaN with 0(Zero)
- Fill all NaN with 50 for column y
- Fill all NaN with adjacent cell

39. Write the SQL functions which will perform the following operations:

5

- To display the name of the year of the current date .

- ii) To remove spaces from the end of a string, " Corona 2019 ".
- iii) To display the name of the month.
- iv) To display the starting position of substring 'aa' in the string 'kkaabbccaall'.
- v) To compute the modulus between two numbers, m1 and m2

Or

Consider a **Table : TRANSPORTER** with the following data:

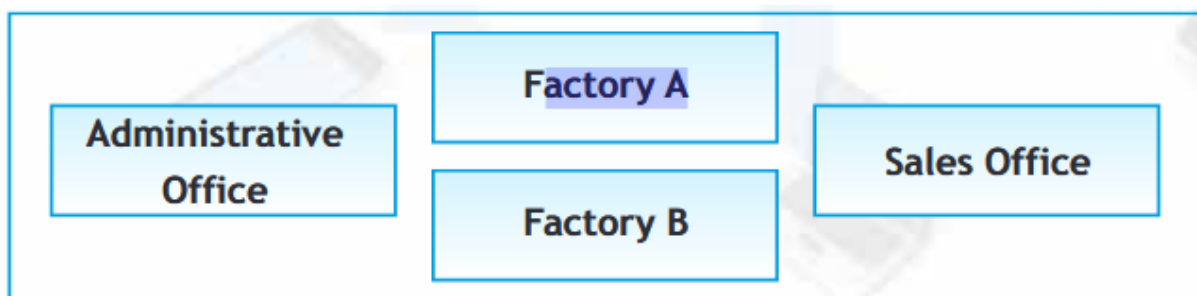
ORDERNO	DRIVERNAME	SALARY	ITEM	TRAVELDATE
10012	RAM YADAV	9876.99	TELEVISION	2019-04-19
10014	SOMNATH SINGH	12345.50	FURNITURE	2019-01-12
10016	MOHAN VERMA	15999.50	WASHING MACHINE	2019-06-06
10018	RISHI SINGH	6575.99	REFRIGERATOR	2019-04-07

Write SQL queries using SQL functions to perform the following operations:

- (i) Display all driver names and items in lowercase.
- (ii) Display Item name along with year of the travel date all the items which item is Furniture.
- (iii) Display the details of all it item where item names containing more than 10 characters.
- (iv) Display first 3 characters of item names and last 3 characters of driver names.
- (v) Display Order no, driver names and salary rounded to the nearest rupee of all the items.

40. Ishika Industries has set up its new production unit and sales office at Ranchi. The company compound has 4 buildings as shown in the diagram below:

5



Distances between these buildings are as follows:

- Administrative Office to Factory A 150 m
- Factory A to Factory B 50 m
- Factory B to Sales Office 100m
- Sales Office to Administrative office 200m
- Administrative Office to Factory B 125 m

Number of Computers in each of the buildings is follows:

- Administrative Office - 15
- Factory A – 25
- Factory B - 18
- Sales Office - 15

a. Suggest the most appropriate topology of the connection between the offices.

- b. Suggest a cable layout of connections between the buildings so that each building is directly connected to Administrative Office.
- c. Suggest the most suitable place (i.e. building) to house the server of this production unit with a suitable reason.
- d. Suggest the placement of the following devices with justification:(i) Repeater(ii) Hub/Switch
- e. The Administrative office of this unit is to be linked with the head office situated in Patiala (Punjab). What will be the most economical way to do this? Justify your answer.

Bhabajyoti S. Baruah  
PGT(IP),South Point School,Guwahati,Assam  
9508422158