20-21 / IP / C

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PRE BOARD EXAMINATION 2020-21

Class : XII **Time : 3 Hrs**
Subject : (065) INFORMATICS PRAC. **Maximum Marks : 70**

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 has 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 sub parts. An examinee is to attempt any 4 out of the 5 sub parts.
4. Part - B is Descriptive Paper.
5. Part- B has three sections
   a. Section-I has short answer questions of 2 marks each in which two questions have internal options.
   b. Section-II has long answer questions of 3 marks each in which two questions have internal options.
   c. Section-III has very long answer questions of 5 marks each in which one question has internal option.

	Part – A	
	Section - I Attempt any 15 questions from questions 1 to 21	
1	State whether True or False : i. Digital property refers to any information about you or created by you that exists in digital form either online or on an electronic storage device. _____ ii. Plagiarism is not the stealing of someone else's intellectual work and representing it as your own work without citing the source of information. _____	1
2	Fill in the blanks : The command used to save a plotted graph using pyplot functions is _____ a. plt.save() b. plt.savefig() c. plt.savepicture() d. plt.saveimage()	1
3	Write the output of the following SQL command. SELECT TRUNCATE (192.672, -1); a. 192.7 b. 190 c. 193 d. 192.6	1
4	Given a Pandas series called S1, the command which will display the last 3 rows is _____. a. print(S1.tail(3)) b. print(S1.Tail(3)) c. print(S1.tails(3)) d. print(S1.Tails(3))	1

5	Write the command to multiply all elements of following Series by 5 S1 W 23 X 55 Y 67 Z 89	1
6	The axes can be labelled on graph using _____ and _____ functions.	1
7	The practice of obtaining the contribution from crowd in form of needed services, ideas or content, mainly from the online community is known as _____.	1
8	Write a Command to transpose of dataframe named DF _____	1
9	Which network topology has a central device, which brings all the signals together? a. Bus b. Star c. Ring d. Hybrid	1
10	Website is collection of _____ .	1
11	alter() function in MySql is part of _____ a. DDL command b. DML Command c. TCL command	1
12	Mr. Sam received an email warning him of closure of his bank accounts if he did not update his banking information immediately. He clicked the link in the email and entered his banking information. Next day, he got to know that he was cheated. This is an example of _____. a. Online Fraud b. Identity Theft c. Plagiarism d. Phishing	1
13	The command to install pandas is _____	1
14	_____ is an application program that helps in opening web pages.	1
15	Which of the following is a /an open source software? a) Microsoft Windows b) Adobe Photoshop c)MySQL d) MS PowerPoint	1
16	_____is an internet service for sending written messages electronically from one computer to another.	1

17	According to a survey, there are network security threats and frauds when connected to internet. List two ways to ensure network security.	1
18	The _____command can be used to arrange data in some order in a table in SQL.	1
19	Write the name of the clause used with SELECT command to search for a specific pattern in the strings.	1
20	_____ is a networking device that converts Analog Signals into Digital Signals.	1
21	Pad Lock sign in URL means it is _____ connection. (secured/ insecured)	1

Section -II

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 DataFrame df and answer any four questions from (i)-(v) :

ID	Name	Age	Fav_Color	Points
T01	Rahul Anand	32	Blue	73
T02	Mohak Girdhar	25	Green	82
T03	Rajeev Tyagi	45	Orange	29
T04	Rohini Malik	30	Pink	39

(i) Write down the command that will add a column “eligible" with default value as ‘yes’. 1

a. df(‘eligible’)=’yes’
b. df[‘eligible’]=’yes’
c. df{‘eligible’}=’yes’
d. df.Insert[‘eligible’=’yes’]

(ii) Write the command to extract the complete row ‘T03’. 1

a. df.loc[: , ‘ID’]
b. df.loc[‘T03’ , ‘Name’]
c. df.loc[‘T02’,’T03’]
d. df.loc[‘T03’, :]

(iii) For the above DataFrame , following statement is giving error. 1

df[Age]=df[Points]*2/3

Find and correct the error.

a. df[‘Age’]=df[‘Points’]*2/3
b. df[Age]=df[‘Points’]*2/3
c. df[‘Age’]=df[Points]*2/3
d. df[‘Age’]=df[‘Points’*2/3]

(iv)	Write the statement to list the first three entries of the DataFrame 'df'. a. df.head() b. df.head(3) c. df.head('3') d. All of the Above	1
(v)	Which command will be used to drop a row from dataframe 'df' labeled as 'T04'? a. Df.drop() b. df.drop() c. df.drop('T04') d. df.drop(T04)	1

23	Consider the table TRAVEL as given below: NO | NAME | TDATE | KM | CODE | NOP 101 | Janish Kin | 2015–11–13 | 200 | 101 | 32 103 | Vedika Sahai | 2016–04–21 | 100 | 103 | 45 105 | Tarun Ram | 2016–03–23 | 350 | 102 | 42 102 | John Fen | 2016–02–13 | 90 | 102 | 40 107 | Ahmed Khan | 2015–01–10 | 75 | 104 | 2 104 | Raveena | 2016–05–28 | 80 | 105 | 4	
(i)	Write query to give the output as: NO | NAME | TDATE | KM 101 | Janish Kin | 2015–11–13 | 200 105 | Tarun Ram | 2016–03–23 | 350 (A) Select * from travel where km>200; (B) Select * from travel where km>=200; (C) Select no, name, tdate, km from travel where km>=200; (D) Select no, name, tdate, km from travel where km between 200 and 350;	1
(ii)	Write query to display maximum km from travel table.	1
(iii)	Akhil has given the following command to arrange the data in ascending order of date. Select * from travel where order by tdate; but he is not getting the desired result. Help him by choosing the correct command. a. Select * from travel order by tdate; b. Select * from travel in ascending order; c. Select tdate from travel order by tdate;	1

(iv)	Choose the correct query to count the number of codes in each code type from travel table? i. select count(code) from travel ; ii. select code, count(code) from travel group by code; iii. select code, count(distinct code) from travel; iv. select code, count(distinct code) from travel group by code; Choose the correct option: a. Both (ii) and (iii) b. Both (ii) and (iv) c. Both (i) and (iii) d. Only (ii)	1
(v)	Choose the correct command to display the name of the traveller whose travel date is in year 2016? a. Select name, tdate from travel where year(tdate)=2016 ; b. Select name, tdate from travel where tdate=2016; c. Select name, tdate from travel where year(tdate)= =2016; d. Select name, max(tdate) from travel ;	1

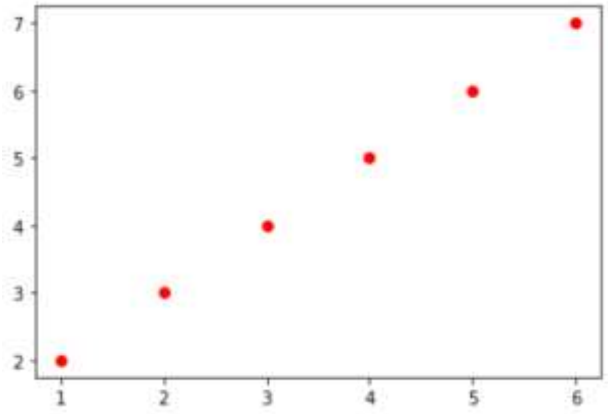
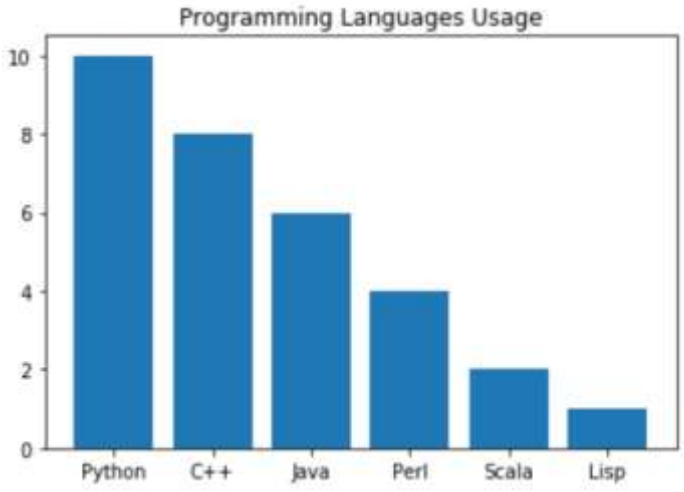
	Part – B Section – I	
24	Consider a given Series , m1: **Index** **Days** **Jan** 31 **Feb** 28 **March** 31 **April** 30 Write a program in Python Pandas to create the series.	2
25	State any two differences between Update and alter commands. OR What is datatype? What are the main objectives of datatypes?	2
26	Consider the decimal number n with value 278.6975. Write commands in SQL : i. That gives output 279 **ii.** That gives output 280	2
27	Consider the following Series object, Comp_amt Mouse 150 Keyboard 300 Pen drive 800 CD 20 i. Write the command to display the name of the items having amount <500. ii. Write the command to name the series as IT_equipments.	2

<table>
<tr><td>28</td><td>(i) Consider a table “Employee” that have fields - empno, name, department, salary.
Based on the above table “Employee”, Manvendra has entered the following SQL command:
SELECT * FROM Employee where Salary = NULL;

But the Query is not executing successfully. What do you suggest to him in order to execute this query i.e. write the correct query.

(ii) Write a SQL query to display the details of those employees whose Salary column has some values.</td><td>2</td></tr>
<tr><td>29</td><td>Consider the following SQL string: “Master Planner”.
Write commands to display:
a. “Master”
b. “Plan”
OR
Considering the same string “Master Planner”.
Write SQL commands to display:
a. the position of the substring ‘Plan’ in the string “Master Planner”
b. the Last 4 letters of the string</td><td>2</td></tr>
<tr><td>30</td><td>Consider the following DataFrame, studentDF
<table><tr><th></th><th>Name</th><th>Rollno</th><th>English</th><th>Hindi</th><th>Maths</th><th>Ssc</th><th>Science</th></tr><tr><td>0</td><td>Aman</td><td>101</td><td>65</td><td>54</td><td>87</td><td>69</td><td>74</td></tr><tr><td>1</td><td>Suman</td><td>102</td><td>69</td><td>64</td><td>90</td><td>87</td><td>59</td></tr><tr><td>2</td><td>Priya</td><td>103</td><td>75</td><td>72</td><td>98</td><td>90</td><td>75</td></tr><tr><td>3</td><td>Tahir</td><td>104</td><td>88</td><td>80</td><td>78</td><td>45</td><td>87</td></tr><tr><td>4</td><td>Bharti</td><td>105</td><td>45</td><td>53</td><td>81</td><td>69</td><td>98</td></tr></table>
Write commands to :
i. Display the Name and Rollno.
ii. Add a new row with values (Rakesh ,106, 79 , 86, 91, 77, 93)</td><td>2</td></tr>
<tr><td>31</td><td>Expand the following terms:
W3C, VoIP, GPRS, FSF</td><td>2</td></tr>
<tr><td>32</td><td>List any two ways of e-Waste disposal.</td><td>2</td></tr>
<tr><td>33</td><td>Consider the following scenarios:
➔ Stalking by means of calls, messages, etc.
➔ Threatening to commit acts of violence.
➔ Threats of child pornography. Posting any kind of humiliating content about the victim.
➔ Sending or posting vulgar messages online.

What do we call these types of activities? What action individual must take if above mentioned things happened?</td><td>2</td></tr>
</table>

<table>
<tr><td></td><td>Section -II</td><td></td></tr>
<tr><td>34</td><td>Consider the following python code and write the output:
import pandas as pd
lst1=[20,35,40]
ser1=pd.Series([20,35,40])
print(lst1+ lst1)
print(ser1+ser1)</td><td>3</td></tr>
<tr><td>35</td><td>What is difference between Freeware and Shareware?
OR
What are common gender and disability issues faced while teaching / using computers in classrooms?</td><td>3</td></tr>
<tr><td>36</td><td>Consider the following graph. Write the code to plot it.
 
OR
Draw the following bar graph representing the uses of programming language.
  </td><td>3</td></tr>
<tr><td>37</td><td>Consider the given table Faculty :-
<table><tr><td>Faculty_Id</td><td>First_name</td><td>Last_name</td><td>Hire_date</td><td>Salary</td></tr><tr><td>1102</td><td>Sulekha</td><td>Mishra</td><td>12-10-1997</td><td>25000</td></tr><tr><td>1203</td><td>Naveen</td><td>Vyas</td><td>23-12-1994</td><td>18000</td></tr><tr><td>1404</td><td>Rakshit</td><td>Soni</td><td>25-08-2003</td><td>32000</td></tr><tr><td>1605</td><td>Rashmi</td><td>Malhotra</td><td>18-09-2004</td><td>21000</td></tr></table></td><td>3</td></tr>
</table>

1906	Amit	Srivastava	05-06-2007	28000

Write SQL commands to :

a. To display details of those faculty members whose First_name ends with 't'.

b. Display all records in descending order of Hire_date.

c. Find the maximum and minimum salary.

Section – III

38 (i) Write a Python code to create the following Dataframe **Empdf** from a Dictionary: 5

	EName	Salary
0	Kush	10000
1	Ruchika	12000
2	Divya	20000
3	John	25000

(ii) Write python code to display the Ename and Salary having Salary more than 20000.

(iii) Write python code to add a column 'Commission' with values as 5% of the Salary.

(iv) Write python code to display the dataframe.

39 Write the SQL statement for the following: 5

i) To display names "Mr. James" and "Ms. Smith" in lower case.
ii) To display current date and time.
iii) To extract date from a given datetime value '2020-12-21 09:30:37'.
iv) To remove trailing spaces from string " Technology Works "
v) To compute the remainder of division between 125 and 17.

OR

Consider the following table Garments. Write SQL commands for the following statements.

Table : Garments

GCode	GName	Price	MCode	Launch_Date
10001	Formal Shirt	1250	M001	2008-12-12
10020	Frock	750	M004	2007-09-07
10007	Formal Pant	1450	M001	2008-03-09
10024	Denim Pant	1400	M003	2007-04-07
10090	T-Shirt	800	M002	2009-05-12

a) To update the Price of Frock to 825.

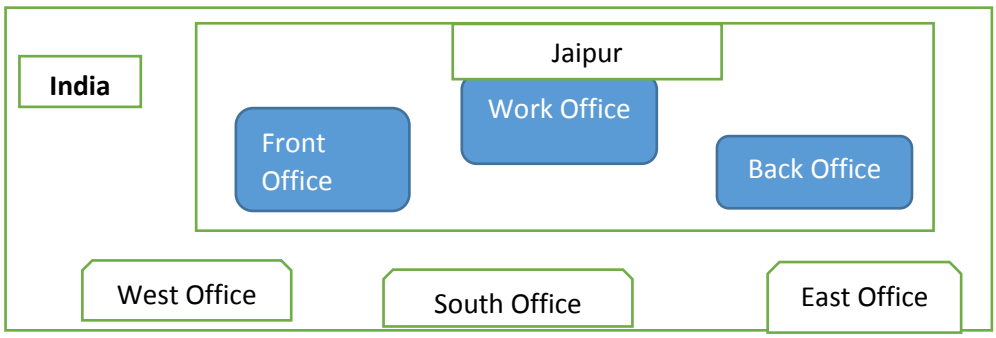
b) To print the average price of all the Garments.

c) To display the Garments Name with their price increased by 15%.

d) To delete the rows having MCode as M002.

e) To display the details of all the Garments which have GCode less than 10030.

40 | "Indian Connectivity Solutions" is planning to spread their offices in four major cities in India to provide regional it infrastructure support in field of Education and Culture. The company has planned to setup their Head office in Jaipur in three locations and named their Jaipur offices as "Front Office", "Back Office" And "Work Office". The Company has three more regional offices as "South Office", "East Office" and "West Office" located in other three major cities of India. A rough layout of the same is given below: | 5



Approximate distances between these offices as per network survey team is as follows:

Place From	Place To	Distance
Back Office	Front Office	85 Metre
Front Office	Work Office	40 Metre
Back Office	Work Office	60 Metre
Back Office	East Office	1100 Km
Back Office	West Office	870 Km
Back Office	South Office	2300 Km

In continuation of the above, the Company Experts have planned to install the following number of Computers in each of their Offices:

Back Office	125
Front Office	24
Work Office	55
East Office	55
West Office	60
South Office	60

(i) Suggest a most suitable cable layout Connection to connect all offices situated at Jaipur i.e. Back Office, Front and Work Office. And also write the type of topology for this layout.

(ii) Suggest the most suitable place (i.e. Office) to house the server of this Company with a suitable reason.

(iii) Suggest the type of Network to connect Back Office, Front and Work Office out of LAN, WAN, MAN and PAN.

(iv) Which device will you suggest to be installed by the company for connecting all the computers with in each of their offices out of the following devices?
(a) Switch/hub (b) Modem (c) Telephone

(v) Which of the following communication medium, will you suggest to be procured by the company for connecting their local offices in Jaipur for very effective and fast communication?
(a) Telephone Cable (b) Ethernet Cable (c) Optical Fibre (d) Co-axial Cable

0-O-o- Best of Luck –o-O-0