

**First Pre-Board Examination, 2020-2021(Class XII)****Subject : Info. Practices (IP)****Set No: I****Full Marks : 70****Time: 3 Hrs**

## 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 sub- parts. An examinee is to attempt any 4 out of the 4 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 all the questions from questions 1 to 19		
1	State true or false . Source code is available for proprietary software.	1
2	Fill in the blanks : The command used to draw a line graph is _____ a . plt.show() b . plt.plot() c . plt.xlabel() d . plt.title()	1
3	Write the output for the following SQL commands Select round(15.193 , -1);	1
4	Which plot is used to show results of continuous data? a. Bar plot b. Line graph c. Histogram d. Pie chart	1
5	Which device is used to regenerate the signals over long distance data transmission? a. Amplifier b. Switch c. Router d. Repeater	1
6	In data frame, which method is used to iterate over horizontal subset of data frame? a. iteritems() b. iterrows() c. iterrow() d. iteritem()	1

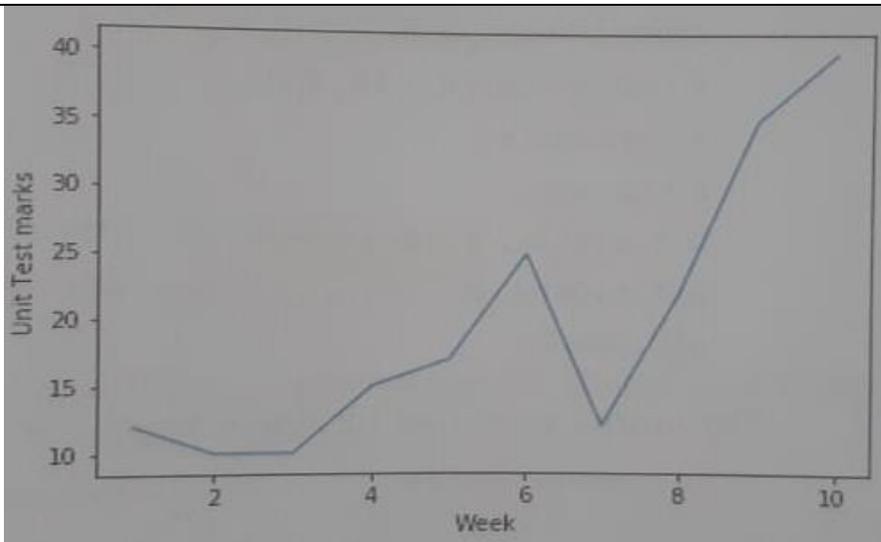
7	Which network device is used to perform modulation and demodulation during data transmission? a. Modulator b. Amplifier c. Modem d. Gateway	1
8	For web pages where the content on the server is served up to any visitor the same, every time, which out of the following options would you advise ? a) Static web page b) Dynamic web page Justify your answer.	1
9	Write a SQL query to display date after 10 days of current date on your system.	1
10	Write the output for the following sql command Select SUBSTR('ABCDEFGG', -5 ,3)	1
11	Which method is used to read the csv file content into data frame?	1
12	Nivedita has recently shifted to a new city and new school. She doesn't know many people in her city. But all of a sudden, someone posting negative, demeaning comments on her social networking profile. Every time she goes online, she fins someone chasing her online. What is happening to Nivedita ?	1
13	Which of the following is a type of program that either pretended to have , or is described as having useful or desirable features but actually containing a damaging code. a) Viruses b) Worms c) Trojans d) Adware	1
14	Which keyword is used to arrange the result of order by clause in descending order? a. DSEC b. DES c. DESC d. DESNO	1
15	The clause that is used to arrange the result of SQL command into groups a. Order by b. Group in c. Groups by d. Group by	1
16.	Mr. Ramesh want to rename the columns in the data frame DF itself. Which of the following attribute is useful for Mr Ramesh. a. Inoriginal b. Inplace c. Indataframe d. Remane	1
17	Identify the transmission media that is suitable for transmission over hilly areas during data communication. a. Infrared b. Microwave c. Radio wave d. Laser wave	1

18	Online personal account, personal website are the examples of? a. Digital wallet b. Digital property c. Digital certificate d. Digital signature	1															
19	Unsolicited commercial emails is known as .....? a. Spam b. Malware c. Virus d. Worms	1															
20	Find the Output of SQL command : select concat (concat ('Inform', 'atics'),'Practices'); a. Informatics Practices b. Informatic Practices c. Inform practices d. Inform atics practices	1															
21	State whether the following statement is True or False. A set of rules that governs internet is called protocol.	1															
Section -II																	
Both the case study based questions (22 & 23 ) are compulsory. Attempt 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)- (iv) <table style="margin-left: 40px;"> <thead> <tr> <th>City</th> <th>Hospitals</th> <th>schools</th> </tr> </thead> <tbody> <tr> <td>Delhi</td> <td>189</td> <td>7916</td> </tr> <tr> <td>Mumbai</td> <td>208</td> <td>8508</td> </tr> <tr> <td>Kolkata</td> <td>149</td> <td>7226</td> </tr> <tr> <td>Chennai</td> <td>157</td> <td>7617</td> </tr> </tbody> </table>	City	Hospitals	schools	Delhi	189	7916	Mumbai	208	8508	Kolkata	149	7226	Chennai	157	7617	
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(i)	Which of the following command that will give the following output. <table style="margin-left: 40px;"> <thead> <tr> <th>City</th> <th>Hospitals</th> <th>schools</th> </tr> </thead> <tbody> <tr> <td>Delhi</td> <td>189</td> <td>7916</td> </tr> <tr> <td>Mumbai</td> <td>208</td> <td>8508</td> </tr> </tbody> </table> a. Df.head() b. Df.head(2) c. Df.iloc[0:2,:] d. Df.iloc[0:2,:0:2] Choose the correct Options i) Only b ii) Only d iii) Both b and c iv) Both b and d	City	Hospitals	schools	Delhi	189	7916	Mumbai	208	8508	1						
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(ii)	Ms anandi wants to add a new column “ shopping malls” with values [120,145,134] to data frame Df. Help her to identify the correct option from the below given options a. Df.'shopping malls'=[120,145,134] b. Df ['shopping mall'] =[120,145,134] c. Df.loc[ : , 'shopping mall'] =[120,145,134] d. Df.loc['shopping mall'] =[120,145,134]	1															

	<p>Choose the correct options</p> <p>i) Only options a is correct</p> <p>ii) Only option b is correct</p> <p>iii) Both options, a and c are correct</p> <p>iv) Both options, b and c are correct</p> <p>v) Both options, a and b option are correct</p>																																											
(iii)	<p>Write down command that will give the following output.</p> <p>City : Mumbai</p> <p>Hospital : 208</p> <p>Schools : 8508</p>	1																																										
(iv)	<p>Ms Anandi wants to display the city name where no of hospitals are greater than and equals to 160. Help her to identify the correct options that will give the desired output.</p> <p>a. Df[Df['Hospitals']&gt;=160].name</p> <p>b. Df[Df.Hospitals&gt;=160].name</p> <p>c. Df[Df['Hospitals']&gt;=160]['name']</p> <p>d. Df[Df['Hospitals']&gt;=160]['name']</p> <p>Choose the correct options</p> <p>i) Only option c is correct</p> <p>ii) Only option a is correct</p> <p>iii) Both c and d are correct</p> <p>iv) Both c and b are correct</p> <p>v) a, b and d are correct</p>	1																																										
(v)	<p>Which Pandas command is used to rename the columns &amp; index name of the above dataframe</p> <p>a. Df.renamecolumns()</p> <p>b. Df.Rename()</p> <p>c. Df.rename()</p> <p>d. Df.indexrename()</p>																																											
23	<p>Consider the Table CLUB given below:</p> <table border="1"> <thead> <tr> <th>COACH_ID</th> <th>COACHNAME</th> <th>AGE</th> <th>SPORTS</th> <th>DATOFAPP</th> <th>PAY</th> <th>SEX</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>KUKREJA</td> <td>35</td> <td>KARATE</td> <td>27/03/1996</td> <td>10000</td> <td>M</td> </tr> <tr> <td>2</td> <td>RAVINA</td> <td>34</td> <td>KARATE</td> <td>20/01/1997</td> <td>12000</td> <td>F</td> </tr> <tr> <td>3</td> <td>KARAN</td> <td>34</td> <td>SQUASH</td> <td>19/02/1998</td> <td>20000</td> <td>M</td> </tr> <tr> <td>4</td> <td>TARUN</td> <td>33</td> <td>BASKETBALL</td> <td>01/01/1998</td> <td>15000</td> <td>M</td> </tr> <tr> <td>5</td> <td>ZUBIN</td> <td>36</td> <td>SWIMMING</td> <td>12/01/1998</td> <td>7500</td> <td>M</td> </tr> </tbody> </table>	COACH_ID	COACHNAME	AGE	SPORTS	DATOFAPP	PAY	SEX	1	KUKREJA	35	KARATE	27/03/1996	10000	M	2	RAVINA	34	KARATE	20/01/1997	12000	F	3	KARAN	34	SQUASH	19/02/1998	20000	M	4	TARUN	33	BASKETBALL	01/01/1998	15000	M	5	ZUBIN	36	SWIMMING	12/01/1998	7500	M	
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(i)	<p>State the command that will give the output as :</p> <p>o/p</p> <table border="1"> <thead> <tr> <th>SPORTS</th> <th>Count(*)</th> </tr> </thead> <tbody> <tr> <td>KARATE</td> <td>2</td> </tr> <tr> <td>SQUASH</td> <td>1</td> </tr> <tr> <td>BASKETBALL</td> <td>1</td> </tr> <tr> <td>SWIMMING</td> <td>1</td> </tr> </tbody> </table> <p>a. SELECT SPORTS,COUNT(*) FROM CLUB;</p> <p>b. SELECT SPORTS,COUNT(*) FROM CLUB WHERE SEX='F' AND PAY&gt;10000;</p> <p>c. SELECT DISTINCT SPORTS FROM CLUB WHERE SEX='F';</p> <p>d. SELECT SPORTS,COUNT(*) FROM CLUB GROUP BY SPORTS</p>	SPORTS	Count(*)	KARATE	2	SQUASH	1	BASKETBALL	1	SWIMMING	1	1																																
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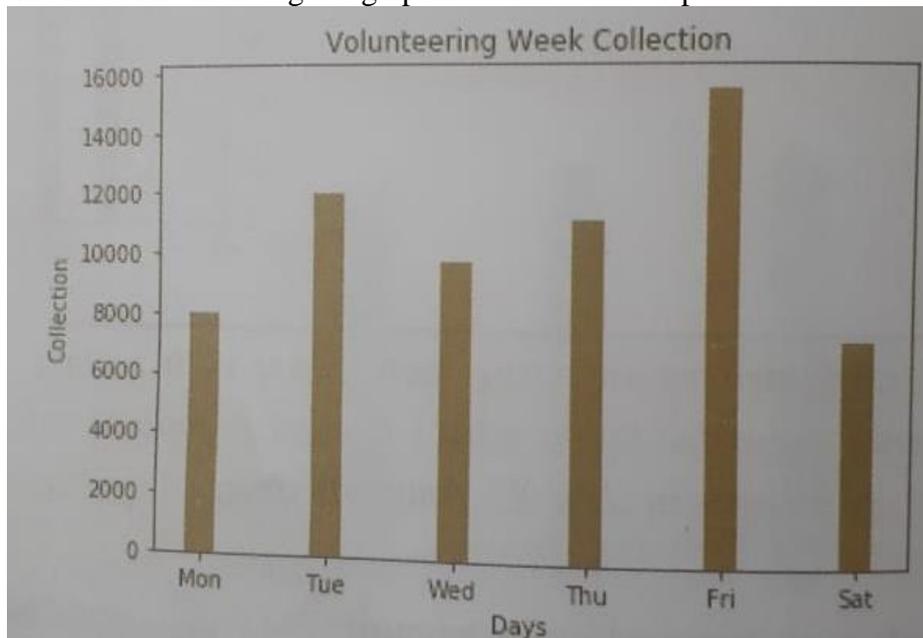
(ii)	Mr Ramesh want to display CLUB table data in ascending order of payment. Help him to identify the correct command. a. SELECT * FROM CLUB ACENDING ORDER PAY;; b. SELECT * FROM CLUB ORDER BY PAY c. SELECT COACHNAME FROM CLUB ORDER BY PAY DESC; d. DELETE FROM CLUB COLUMN PAY;	1										
(iii)	Mr Ramesh wants to display sports having more than 5 coaches. Help him to identify the correct command : a. SELECT SPORTS,COUNT(*) FROM CLUB WHERE COACHES >2; b. SELECT SPORTS,COUNT(*) FROM CLUB ORDER BY SPORTS; c. SELECT SPORTS FROM CLUB HAVING COUNT(*)>5’; d. SELECT SPORTS,COUNT(*) FROM CLUB GROUP BY SPORTS HAVING COUNT(*)>5	1										
(iv)	Mr. Ramesh want to display sports wise no of coaches from table club, help him to identify the correct command. a. SELECT SPORTS FROM CLUB; b. SELECT SPORTS,COUNT(SPORTS) FROM CLUB; c. SELECT SPORTS,COUNT(SPORTS) FROM CLUB GROUP BY SPORTS; d. SELECT SPORTS, COUNT(*) FROM CLUB ORDER BY SPORTS;	1										
(v)	Which SQL command to display age wise no of coaches. a. SELECT AGE FROM CLUB GROUP BY AGE; b. SELECT AGE,COUNT(*) FROM CLUB GROUP BY AGE;	1										
	Part – B											
	Section-I											
24	Consider a given series : SQTR  INDEX  <table border="1" style="display: inline-table; vertical-align: middle;"> <tbody> <tr><td>QTR1</td><td>50000</td></tr> <tr><td>QTR2</td><td>68000</td></tr> <tr><td>QTR3</td><td>67000</td></tr> <tr><td>QTR4</td><td>45777</td></tr> <tr><td>QTR5</td><td>89990</td></tr> </tbody> </table>  Write a program in Python Pandas to create the series.	QTR1	50000	QTR2	68000	QTR3	67000	QTR4	45777	QTR5	89990	2
QTR1	50000											
QTR2	68000											
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25	Helps Abhay to Compare Having clause and Order by clause? Or  Shewani has recently started working in MySQL. Help her in understanding the difference between where and having clause.	2										
26	Write commands in SQL to: i. round off value 56789.8790 to nearest thousand’s place. ii.Display day from date 13-Apr-2020.	2										
27	What will be the output produced by the following programing statements 1 & 2? import pandas as pd S1=pd.Series(data=[31,41,51]) print(S1>40) → Statement1 print(S1[S1>40]) → Statement2	2										
28	Consider the following SQL strings: S1= “INDIA” S2=”MY” & S3=”DI” Write commands to display: a. “MYINDIA” b. “india”  OR Considering the same string as above Write SQL commands to display: a. The position of the string S3 in the string S1. b. The first 4 letters of the concatenation of string S1 and S2.	2										
29	ROLLNO NAME BST ECO 0 1201 vikram 78 80	2										

	<p>1 1202 shivani 88 89  2 1303 vivek 76 82  3 1204 jaipriya 70 84  4 1205 simran 85 67  5 1206 cahitanya 78 88</p> <p>Consider the above data frame CLASS, write commands to do the followings:  a. Display rows 2 to 4(both inclusive ) and columns 'BST' , 'ECO'  b. Display rows 2 to 4(both inclusive ) and first 3 columns.</p>																																				
30	What are the limitations of star topology?	2																																			
31	What is digital property? Give some examples?	2																																			
32	<p>Given Table Course:</p> <table border="1"> <thead> <tr> <th>CID</th> <th>CNAME</th> <th>FEES</th> <th>STARTDATE</th> <th>TID</th> </tr> </thead> <tbody> <tr> <td>C201</td> <td>AGDCA</td> <td>12000</td> <td>2018-07-02</td> <td>101</td> </tr> <tr> <td>C202</td> <td>ADCA</td> <td>15000</td> <td>2018-07-15</td> <td>103</td> </tr> <tr> <td>C203</td> <td>DCA</td> <td>10000</td> <td>2018-10-01</td> <td>102</td> </tr> <tr> <td>C204</td> <td>DDTP</td> <td>9000</td> <td>2018-09-15</td> <td>104</td> </tr> <tr> <td>C205</td> <td>DHN</td> <td>20000</td> <td>2018-08-01</td> <td>101</td> </tr> <tr> <td>C206</td> <td>O LEVEL</td> <td>18000</td> <td>2018-07-25</td> <td>105</td> </tr> </tbody> </table> <p>Find out the output for given SQL command:  SELECT TID, COUNT(*), MIN(FEES) FROM COURSE GROUP BY TID HAVING COUNT(*)&gt;1;</p>	CID	CNAME	FEES	STARTDATE	TID	C201	AGDCA	12000	2018-07-02	101	C202	ADCA	15000	2018-07-15	103	C203	DCA	10000	2018-10-01	102	C204	DDTP	9000	2018-09-15	104	C205	DHN	20000	2018-08-01	101	C206	O LEVEL	18000	2018-07-25	105	2
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33	What are intellectual property rights? Why should intellectual property rights be protected?	2																																			
	Section –II																																				
34	<p>Given two series S1 and S2</p> <table style="width: 100%;"> <thead> <tr> <th style="width: 50%;">S1</th> <th style="width: 50%;">S2</th> </tr> </thead> <tbody> <tr> <td>A 39</td> <td>A 10</td> </tr> <tr> <td>B 41</td> <td>B 10</td> </tr> <tr> <td>C 42</td> <td>D 10</td> </tr> <tr> <td>D 44</td> <td>F 10</td> </tr> </tbody> </table> <p>Find the output for following python pandas statements?  a. S1[:2]*100  b. S1 * S2  c. S2[:, -1]*10</p>	S1	S2	A 39	A 10	B 41	B 10	C 42	D 10	D 44	F 10	3																									
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35	<p>a. Identify the type of cybercrime for the following situations:</p> <p>(i) A person complains that Rs. 4.25 lacs have been fraudulently stolen from his/her account online via some online transactions in two days using NET BANKING.</p> <p>(ii) A person complains that his/her debit/credit card is safe with him still somebody has done shopping /ATM transaction on this card.</p> <p>(iii) A person complains that somebody has created a fake profile of Facebook and defaming his/her character with abusive comments and pictures.</p> <p>b. As a citizen of India, what advice you should give to others for e-waste disposal?  c.</p>	3																																			
36	Consider the following graph. Write the code to plot it.	3																																			



OR

Consider the following bar graph. Write the code to plot it.



37

TABLE NAME : PHARMADB

RxID	DrugID	DrugName	Price	PharmacyName	PharmacyLocation
R1000	5476	Amlodipine	100.00	Rx Pharmacy	Pitampura, Delhi
R1001	2345	Paracetamol	15.00	Raj Medicos	Bahadurgarh, Haryana
R1002	1236	Nebistar	60.00	MyChemist	Rajouri Garden, Delhi
R1003	6512	VitaPlus	150.00	MyChemist	Gurgaon, Haryana
R1004	5631	Levocitrezine	110.00	RxPharmacy	South Extension, Delhi

Write SQL commands to a & b and output for c:

- To display sum of price for each PharmacyName having more than 1 drug.
- Display pharmacy name in descending order of drug id
- SELECT PharmacyName, COUNT(\*) FROM PharmaDB GROUP BY PHARMACY NAME

3

Section -III

38 Write a program in Python Pandas to create the following DataFrame stuDF from a Dictionary of List:

5

	rollno	name	marks
0	115	Pavni	97.5
1	236	Rishi	98.0
2	307	Preet	98.5
3	422	Paul	98.0

Perform the following operations on the DataFrame stuDF:

- Add index as Sec A, Sec B, Sec C & Sec D in place 0,1,2 & 3
- Print details of student secured marks 98.0

39 Consider the following data frame of automobile

5

index	company	body-style	wheel-base	num-of-cylinders	price	Dateofmanufacture
0	bmw	sedan	101.234	four	16925	1998-03-27
1	bmw	sedan	101.261	six	20970	1999-05-23
2	honda	sedan	96.538	four	12945	2000-03-02
3	honda	sedan	96.519	four	10345	2001-02-01
4	toyota	hatchback	95.727	four	5348	1999-03-01
5	toyota	hatchback	95.173	four	6338	2000-05-11

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

- Display company name and body wheel base after rounding off to nearest ten's decimal places.
- Display the position of occurrence of the string "dan" in body style.
- Display the 3 characters from company name starting from second character.
- Display the year of manufacturing for sedan;
- Display the name of the weekday for the manufacturing date.

40 SHARMA Medicos Center has set up its new center in Delhi . It has four buildings as shown in the diagram given below:

5



Distance between various building are as follows:

Accounts to research Lab	55m
Accounts to store	150m
Store to packaging unit	160m
Packaging unit to research lab	60m
Accounts to packaging unit	125m
Store to research lab	180m

Number of Computers

Accounts	25
Research Lab	100
Store	15
Packaging Unit	60

As a network expert, provide the best possible answer for the following queries:

- Suggest a cable layout of connections between the buildings.
- Suggest the most suitable place (i.e. buildings) to house the server of this organization.
- Suggest the placement of the following device with justification:
  - Repeater
  - Hub/Switch
- Suggest a system (hardware/software) to prevent unauthorized access to or from the network.
- The company is planning to link its head office situated in Delhi with the offices in hilly areas. Suggest a way to connect it economically.