



COMMON PRE-BOARD EXAMINATION 2022-23



Subject: Informatics Practices (065)

Class: XII

Time: 3 Hours

Date:

Max. Marks: 70

General Instructions:

- This question paper contains five sections, Section A to E.
- All questions are compulsory.
- Section A have 18 questions carrying 01 mark each.
- Section B has 07 Very Short Answer type questions carrying 02 marks each.
- Section C has 05 Short Answer type questions carrying 03 marks each.
- Section D has 03 Long Answer type questions carrying 05 marks each.
- Section E has 02 questions carrying 04 marks each. One internal choice is given in Q35 against part C only.
- All programming questions are to be answered using Python Language only.

SECTION -A

1	Internet is an example of:_____	1
	a) LAN b) WAN c) MAN d) PAN	
2	Which of the following is an example of e-waste?	1
	a) A broken glass b) Rapped jeans c) Unused old computers d) Empty cartons	
3	If you receive an email claiming to need your username and/or password, what should you do ?	1
	a) Report it as Phishing/ Spam through your email provider. b) Delete the message c) Reply to the message with your email and password. d) All of these	
4	If column "Salary" contains the data set [10000,15000,25000,10000,15000], what will be the output after the execution of the given query? SELECT MIN (SALARY) FROM EMPLOYEE;	1
	a) 75000 b) 25000 c) 10000 d) 50000	
5	Which of the following is not an example of DDL command ?	1
	a) CREATE TABLE b) DROP TABLE c) DELETE d) ALTER TABLE	

6	Which one of the following is not an NUMERIC function? a) ROUND() b) SQRT() c) COUNT() d) MOD()	1
7	Which one of the following functions is used to find the largest value from the given data in MySQL? a) MAX() b) MAXIMUM() c) BIG() d) LARGE()	1
8	Which one of the following functions will always return an integer value as output ? a) LOWER() b) LENGTH() c) SUBSTR() d) LEFT()	1
9	Linux, MySQL and Mozilla Firefox software come under which category. a) Proprietary b) FOSS c) Freeware d) Shareware	1
10	A _____ is a summarization tool for discrete or continuous data. (a) quartile (b) histogram (c) mean (d) median	1
11	Which of the following can be used to specify the data while creating a DataFrame? a) Series b) List of Dictionaries c) Structured ndarray d) All of these	1
12	To display First three rows of a series object 'M', you may write: a) M.Head() b) M.Tail(3) c) M.Head(3) d) M.head(3)	1
13	V' in VoIP stands for: a) Volume b) Voice c) Virtual d) Video	1

14	In SQL, which function is example of scalar function? a) count () b) avg () c) ucase() d) max ()	1
15	Nitish received an email warning him of closure of his bank accounts if he did not update his banking information as soon as possible. He clicked the link in the email and entered his banking information. Next he got to know that he was duped. This is an example of _____. a) Phishing b) Identity Theft c) Digital footprint d) All of Above	1
16	Which of the following statement will import pandas library? a) import pandas as pd b) import Pandas as py c) import pandas as ps d) import panda as pd	1
	Q17 and 18 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	
17	Assertion (A): Social media are websites or applications that enable their users to participate in social networking but they cannot create and share content with others in the community. Reason (R): We should not waste precious time in responding to unnecessary emails or comments unless they have some relevance for us.	1
18	Assertion (A): - Data visualization refers to the graphical representation of information and data using visual elements like charts, graphs and maps etc.. Reasoning (R):- To install matplotlib library we can use the command pip install matplotlib.	1
SECTION - B		
19	Expand the following terms: (i) URL (ii) POP (iii) SMTP (iv) HTTP OR What is the purpose of using router ?	2

20	<p>Sangeetha is a database administrator needs to display Block wise total number of records of 2 and 3 Block Apartments. She is encountering an error while executing the following query:</p> <p>SELECT BLOCK, COUNT (*) FROM APARTMENTS GROUP BY BLOCK WHERE BLOCK=2 OR 3;</p> <p>Help her in identifying the reason of the error and write the correct query by suggesting the possible correction (s).</p>	2																				
21	<p>What is the purpose of Order By clause in SQL?</p> <p>Explain with the help of suitable example.</p>	2																				
22	<p>Write a program to create a series object using a dictionary that stores the number of boys in each from IX to XII your school.</p> <p>Note: Assume four class names are Ninth, Tenth, Eleventh and twelfth having 10, 20, 12, 16 boys respectively and pandas library has been imported as pd.</p>	2																				
23	<p>What is a website? How is it different from a webpage?</p> <p style="text-align: center;">OR</p> <p>Differentiate between star and bus topology.</p>	2																				
24	<p>What will be the output of the following code:</p> <pre>>>import pandas as pd >> B=pd.Series(data=[45,50,55,45,78,54]) >>print(B>=55)</pre>	2																				
25	<p>Explain what the following statements are doing ? df is the name of a DataFrame.</p> <p>(i) df.iloc[1:5,]</p> <p>(ii) df.iloc[2:7, 1:3]</p>	2																				
SECTION C																						
26	<p>Consider the following table SALESMAN. Write SQL commands for the following statements.</p> <table border="1"><thead><tr><th>SID</th><th>SNAME</th><th>SALARY</th><th>DOJ</th></tr></thead><tbody><tr><td>A012</td><td>KAVYA SHARMA</td><td>30000</td><td>29-10-2019</td></tr><tr><td>F035</td><td>MANAV GUPTA</td><td>42000</td><td>18-03-2017</td></tr><tr><td>S020</td><td>GOVIND RAM</td><td>32500</td><td>29-03-2020</td></tr><tr><td>A054</td><td>VINOD RAINA</td><td>57000</td><td>16-04-2016</td></tr></tbody></table> <p>a) Display the Salesman name and month name of the Date of Joining.</p> <p>b) Display the sum of Salary.</p> <p>c) Display the position of occurrence of letter “O” in Salesman name.</p>	SID	SNAME	SALARY	DOJ	A012	KAVYA SHARMA	30000	29-10-2019	F035	MANAV GUPTA	42000	18-03-2017	S020	GOVIND RAM	32500	29-03-2020	A054	VINOD RAINA	57000	16-04-2016	3
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27	<p>Consider two objects x and y. x is a list whereas y is a Series. Both have values 20, 40,90, 110.</p>	3																				

	<p>What will be the output of the following two statements considering that the above objects have been created already</p> <p style="text-align: center;">a. print (x*2) b. print(y*2)</p> <p>Justify your answer.</p>																					
28	<p>Write a Python code to create a DataFrame Result with appropriate column headings from the list given below:</p> <table border="1"><tr><td></td><td>Arnab</td><td>Ramit</td><td>Samridhi</td><td>Riya</td></tr><tr><td>Hindi</td><td>90</td><td>92</td><td>89</td><td>81</td></tr><tr><td>IP</td><td>91</td><td>81</td><td>91</td><td>71</td></tr><tr><td>Maths</td><td>97</td><td>96</td><td>88</td><td>67</td></tr></table>		Arnab	Ramit	Samridhi	Riya	Hindi	90	92	89	81	IP	91	81	91	71	Maths	97	96	88	67	3
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Maths	97	96	88	67																		
29	<p>Anita has recently shifted to a new city and school. She does not know many people in her new city and school. But all of a sudden, someone is posting negative, demeaning comments on her social networking profile etc. She is also getting repeated mails from unknown people. Every time she goes online, she finds someone chasing her online.</p> <p>i. What is this happening to Anita? ii. What immediate action should she take to handle it? iii. Is there any law in India to handle such issues? Discuss briefly.</p> <p style="text-align: center;">OR</p> <p>What is Digital Footprint ? Mention some measures to keep your digital footprint clean.</p>	3																				
30	<p>Write the Output produced by the following SQL commands.</p> <p>(i) SELECT LEFT(“INDIA”,3) , RIGHT(“COMPUTER SCIENCE”,4);</p> <p>(ii) SELECT YEAR(“2022/12/26”),MONTH(“2022/12/26”), DAY(“2022/12/26”),MONTHNAME(“2022/12/26”);</p> <p>(iii) SELECT ROUND(123.2345,2),ROUND(342.9234,-1)</p> <p style="text-align: center;">OR</p> <p>Giving suitable example of each and write the difference between Single-Row Functions and Multiple-Row Functions</p>	3																				
SECTION D																						
31	<p>Consider a table STUDENT with the following data:</p>	5																				

Adm_No	Class	Name	VOC_SUBJ	DOB
21035	11	Abhinandan	Marketing	21-10-2007
32149	12	Urvi	Info. Tech.	25-04-2006
30587	10	Shalini	Info. Tech.	21-09-2008
31543	11	Sneha	Salesmanship	19-11-2007
12345	12	Ritu	Banking	08-08-2006

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

- Display the names of the students's VOC_SUBJ, where Adm_No's are arranged in descending Order.
- Display the different Vocational Subjects offered by the School.
- To display the class and no. of students in each class.
- Display the details of students whose date of birth is > 15-05-2007.
- Display the name of the student whose name starts with 'S'.

OR

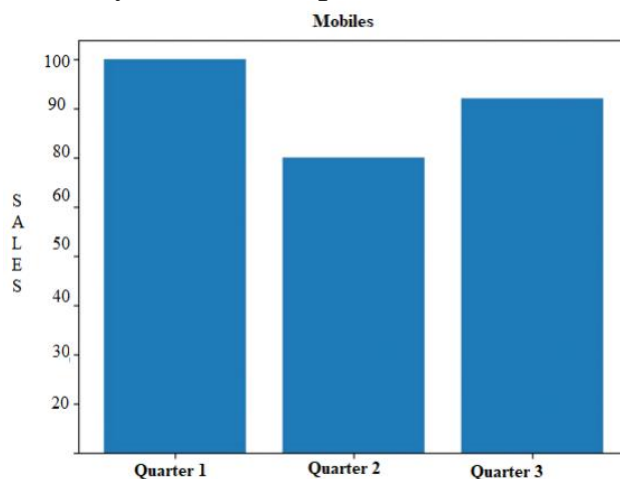
Giving suitable example of each explain the use of following functions in MySQL:

- (i) UCASE() (ii) POWER(m,n) (iii) DATE() (iv) MID() (v) DAYNAME ()

32

- i) Write Python code to plot a bar chart for Mobiles sales for quarters

5



- Also give suitable python statement to save this chart.
- What is Pyplot ? Is it a Python Library.

OR

- Write a python program to plot a line chart based on the given data to depict the Monthly scoring rate of a batsman for four months and also assign suitable labels and title. Month=[1,2,3,4] , Scoring rate=[140,132,148,164]

(ii) Write a program to read from a CSV file Employee.csv and create a dataframe from it. Use Empno column as index labels.

33 A company in Mega Enterprises has 4 wings of buildings as shown in the diagram:

5



Center to center distances between various Buildings:

W3 to W1	50m
W1 to W2	60m
W2 to W4	25m
W4 to W3	170m
W3 to W2	125m
W1 to w4	90m

Number of computers in each of the wing:

W1	150
W2	15
W3	15
W4	25

Computers in each wing are networked but wings are not networked The company has now decided to connect the wings also.

i. Suggest a most suitable cable layout for the above connections.

ii. Suggest the most appropriate topology of the connection between the wings.

iii. The company wants internet accessibility in all the wings. Suggest a suitable technology .

iv. Suggest the placement of the following devices with justification if the company wants minimized network traffic

a) Repeater b) Hub / switch

v. The company is planning to link its head office situated in New Delhi with the offices in hilly areas. Suggest a way to connect it economically.

SECTION E

- 34 Given a DataFrame mdf as Shown Below 1+1+2
- | | A | B | C |
|---|---|---|---|
| 0 | 1 | 2 | 3 |
| 1 | 4 | 5 | 6 |
- Predict the output of the following python statement:
- (i) `print("I : ", mdf.iloc[0][0])`
`print("II : ", mdf.iloc[0]['C'])`
`print("III : ", mdf.at[1]['A'])`
`print("IV : ", mdf.iat[0][0])`
 - (ii) `mdf.shape` and `mdf.columns`
 - (iii) `len(mdf)`
- OR (Option for part iii only)**
- (iv) Write statement to delete columns with labels 'A', 'C'.

- 35 Ravi database administrator has designed a database for a Medical shop. Help him by writing queries of the following questions based on the given table: 2+1+1

TABLE: Med_Shop

MCODE	SNAME	COLOR	PRICE	DOE
M001	Capsule	BLUE	990	2022-01-26
M002	Tablet	RED	599	2021-12-25
M003	Syrup	GREY	399	2021-11-26
M004	Capsule	GREEN	1299	2019-11-25
M005	Syrup	WHITE	399	2021-12-28

- i. Create the table Med_shop with appropriate datatypes and Constraints.
- ii. Identify the Primary key in Med_Shop.
- iii. Add a new column Discount to the table Med_Shop.

OR (Option for part iii only)

Increase the price by 5 Percent for all the medicines.
