INDIAN SCHOOL IBRA

ACADEMIC SESSION 2020 – 2021

ONLINE PRE-MID TERM – 25.06.2020

CHAPTERS – SQL, DATAFRAMES, COMPUTER NETWORKS

I. Choose the correct option for the following questions. (MCQ). 10 x 1 = 10 Marks

1. Find the odd one out of the following with respect to computer networks.
    a. Resource Sharing
    b. Cost & Time saving
    c. Safe Data Transmission
    d. Collaborative user interaction
2. Which of the following unguided media requires legal permissions?
    a. Micro-wave
    b. WiFi
    c. Radio-wave
    d. Satellite
3. Data transfer rate with twisted pair cable is:
    a. 10 Mbps - 10 Gbps
    b. 100 Mbps
    c. More than 100 Gbps
    d. Not predictable
4. Which of the following command gives output 1 with respect to the Students Table?

STUDENTS

AdmNo	LibCardNo	AccNo	IssueDate	ReturnDate
2010001	101	1002	2009-12-02	2009-12-08
2009012	102	1050	2010-02-16	NULL

    a. SELECT COUNT(*) FROM STUDENTS;
    b. SELECT COUNT(*) FROM STUDENTS WHERE ReturnDate==NULL;
    c. SELECT COUNT(ReturnDate) FROM STUDENTS;
    d. SELECT COUNT() FROM STUDENTS;
5. The SQL command used to delete the column IssueDate from the above table STUDENTS is:
    a. DELETE IssueDate FROM STUDENTS;
    b. DROP Issue Date FROM STUDENTS;
    c. ALTER TABLE STUDENTS DELETE IssueDate;
    d. ALTER TABLE STUDENTS DROP IssueDate;
6. Which of the following not a valid clause in SQL?
    a. MIN
    b. WHERE
    c. BETWEEN
    d. GROUP BY

7. The output of the command 'SELECT AVG(margin)FROM SHOES;' with respect to the following table shoes is:

SHOES

Code	Name	type	size	cost	margin	Qty
1001	School Canvas	School	6	132.50	2.00	1200
1002	School Canvas	School	7	135.50	2.00	800
1003	School Canvas	School	8	140.75	2.00	600
1011	School Leather	School	6	232.50	2.00	2200
1012	School Leather	School	7	270.00	2.00	1280
1013	School Leather	School	8	320.75	NULL	1100
1101	Galaxy	Office	7	640.00	3.00	200
1102	Galaxy	Office	8	712.00	3.00	500
1103	Galaxy	Office	9	720.00	3.00	400
1201	Tracker	Sports	6	700.00	NULL	280
1202	Tracker	Sports	7	745.25	3.50	NULL
1203	Tracker	Sports	8	800.50	3.50	600
1204	Tracker	Sports	9	843.00	NULL	860

   a. 2.600
   b. 2.00
   c. 13.00
   d. 26.00

8. Consider the dataframe given below:

	GR_NO	NAME
0	9246	JOANNA
1	8652	KISHORE
2	6543	DEBY
3	8671	LEON

   When Jael applied a dataframe function, it gave the output as below. Choose the function used by her.

	GR_NO	NAME
2	6543	DEBY
3	8671	LEON
0	9246	JOANNA
1	8652	KISHORE

   a. rearrange
   b. rename
   c. reindex
   d. sort_index

9. The Python library to be imported when we need to apply multiple aggregate functions in a single statement.
   a. Pandas
   b. Matplotlib
   c. Pyplot
   d. Numpy

10. The command to delete the record with index 1 in a dataframe df is:
   a. del df[1]
   b. df.drop(1)
   c. df.pop(1)
   d. df[1].pop

II. Fill in the blanks with one word or one sentence. (Short answers). 10 x 1 = 10 Marks

11. What is the cardinality and degree of the following table tbl_cust?

CUST_ID	CUST_FNAME	CUST_LNAME	CUST_ADDRESS	CUST_PHONE	CUST_EMAIL
1	Gaurav	Sharma	143, Sanjay Gram,Sector -16, Chandigarh	8800937124	fantasticgaurav@gmail.com
2	Harsh	Singh	12,Officer's Colony, Sector-60,Ludhiana	9807652719	harsh.singh@gmail.com
3	Srotoswini	Singh	13,Iffco Colony, Near Iffco Office , Ooty	7980678968	singh.smart@gmail.com

12. Name the fields, which can act as the primary key and foreign key for the table Doctors and the table Patients respectively.

Table: Doctors

DocID	DocName	Department	OPD_Days
101	M.Panday	ENT	TTS
102	G.P.Gupta	Paed.	MWF
201	C.K.Sharma	Ortho	MWF

Table: Patients

Pat_no	PatName	Department	DocID
1	Neeraj	ENT	101
2	Mohit	Ortho	201
3	Ragini	ENT	101
4	Mohit	Paed.	102
5	Nandini	Ortho	201

13. The SQL command used to view the structure of the table created is _____
14. A device which regenerates the received signal and re-transmits it to its destination is known as _____
15. In which topology all the nodes are connected to a main cable called backbone?
16. Name the basic protocol of the Internet.
17. Name the two important data structure of Pandas library.
18. Write the Python command to add a new record in the location 5 with details: Ganguly, 32, 75 (Note: The name of the DataFrame is Cdf)

	Name	Age	Score
0	Sachin	26	87
1	Dhoni	25	67
2	Virat	25	89
3	Rohit	24	55
4	Shikhir	31	47

19. Write the Python command to change the column names of the dataframe Cdf in Q.No.18 as Age → S_Age, Score→FM_Score.
20. Write the Python command to display the last 3 records of the dataframe Cdf in Q.No.18.

III. Answer the following questions. 10 Marks

21. Read the following table Employee carefully and answer the questions that follow:(3)

Table: Employee

No	Name	Salary	Zone	Age	Grade	Dept
1	Mukul	30000	West	28	A	10
2	Kritika	35000	Centre	30	A	10
3	Naveen	32000	West	40		20
4	Uday	38000	North	38	C	30
5	Nupur	32000	East	26		20
6	Moksh	37000	South	28	B	10
7	Shelly	36000	North	26	A	30

a. Write the SQL command to display the details of Employees who are under 30 years and belong to Department 10.
b. Write the SQL command to add one more column DOJ which contains the date of joining the company.
c. Write the SQL command to find the sum and average of Salary of all employees department-wise.

22. Read the following dataframe df carefully and write the Python code for the questions that follow: (3)

	I_Code	P_Name	Brand	Made	Price	CPU	M_Year
0	P101	Desktop	Dell	Malaysia	250	i5	2019
1	L101	Laptop	Lenovo	China	275	i5	2018
2	P102	Desktop	HP	Thailand	325	i7	2020
3	P103	Desktop	Fujitsu	Germany	285	i5	2018
4	L102	Laptop	Toshiba	Malaysia	300	i5	2017
5	P104	Desktop	Lenovo	China	185	i3	2015
6	P105	Desktop	Expeditor	China	210	i5	2019

a. To add a new column Dealer with values IC, IIF, Gulfar, IC, Lulu, IC, IIF.
b. To find the minimum and maximum of Price column values.
c. To find the average Price of the computers country-wise (Made).

23. Read the following dataframe df carefully and write the Python code for the questions that follow: (4)

No.	NAME	FEE	GENDER	C_ID	JOINYEAR
1012	Amandeep	30000	M	A01	2012
1102	Avisha	25000	F	A02	2009
1103	Ekant	30000	M	A02	2011
1049	Arun	30000	M	A03	2009
1025	Amber	40000	M	A02	2011
1106	Ela	40000	F	A05	2010
1017	Nikita	35000	F	A03	2012
1108	Arluna	30000	F	A03	2012
2109	Shakti	35000	M	A04	2011
1101	Kirat	25000	M	A01	2012

a. To print the records with index 1, 3, 5, 7, 9
b. To find the sum and mean of FEE column for each GENDER.
c. To print only the columns NAME, GENDER AND JOINYEAR.
d. To change the names of the index as 0 to Zero, 1 to One and 2 to Two.