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SET A



**INDIAN SCHOOL MUSCAT  
SECOND PRE - BOARD EXAMINATION  
COMPUTER SCIENCE (083)**

CLASS: XII

TERM 2

Time Allotted: 2 Hrs.

26.02.2022

Max. Marks: 35

**GENERAL INSTRUCTIONS:**

The question paper is divided into 3 sections – A, B and C

- Section A, consists of 7 questions (1-7). Each question carries 2 marks.
- Section B, consists of 3 questions (8-10). Each question carries 3 marks.
- Section C, consists of 3 questions (11-13). Each question carries 4 marks.
- Internal choices have been given for question numbers 7, 8 and 12.

**Section-A****Each question carries- 2 marks**

Q.No	Part No.	Question	Marks
1.		What is a stack? What basic operations can be performed on stacks?	2
2.	i)	Expand the following: VoIP, URL	1
	ii)	Rearrange the following in the increasing order of speedy medium of data transfer: Telephone line, Fiber Optic Cable, Coaxial Cable, Twisted Pair Cable	1
3.		What do you mean by alternate key and foreign key with respect to a table?	2
4.		A resultset is extracted from the database using the cursor object (that has been already created) by giving the following statement. n = 5 <b>Mydata = cursor.fetchmany(n)</b>  a) How many records will be returned by fetchmany(n) method? b) What will the statement cursor.fetchmany(2) will return if there are no more records in the table?	2

5. Write the output of the queries a) to d) based on the table, **Employee** given below: 2

**Table: Employee**

Empid	Firstname	Lastname	Designation	City	Salary
E010	Ravi	Kumar	Manager	BLR	75000
E105	Harry	Wilson	Manager	BLR	65000
E152	Sam	Verghese	Director	Delhi	80000
E215	Ritu	Vinod	Clerk	Mumbai	45000
E244	Ankita	Ganesh	Clerk	Chennai	40000
E300	Peter	Harry	Salesman	Delhi	32000

- a) SELECT Designation, count(\*) FROM Employee  
GROUP BY Designation HAVING count(\*) >= 2 ;
- b) SELECT MAX(Salary), MIN(Salary) FROM Employee  
WHERE City IN( "BLR", "Delhi") ;
- c) SELECT Firstrname ,Lastname FROM Employee  
WHERE Firstname Like "R%" ;
- d) SELECT Empid, Firstname FROM Employee  
WHERE Designation = "Clerk" ;

6. i) Which MySQL command is used to access a database named "EXAM"? 1
- ii) Give one point of difference each between char(n) and varchar(n) data types with respect to databases. 1

7. Consider the table, **WATCHES** given below: 2

**Table: WATCHES**

Watchid	Watch_name	Price	Type	Qty_Store
W001	Tissot	10000	Unisex	100
W002	Louis Cardin	15000	Ladies	150
W003	Casio	20000	Gents	200
W004	Amaze Fit GTS-2	12000	Unisex	250
W005	HMT	7000	Gents	100

- a) Identify the cardinality and degree of the table WATCHES.
- b) Which should be the primary key? Justify your answer.

**OR**

- a) Identify the candidate key(s) from the table 'WATCHES'.

b) Consider the table “SALES” given below:

**Table: SALES**

Sid	Watchid	Qty_Sold
S10	W001	10
S11	W003	5
S13	W002	20
S14	W005	12

Which field will be considered as the foreign key if the tables WATCHES and SALES are related in a database?

### Section-B

**Each question carries- 3 marks**

8. Ankita has created a list of marks of 7 students. Write a program, with separate user defined functions to perform the following operations: 3

- Push the marks into a stack, where the corresponding marks is greater than 80.
- Pop and display the content of the stack.

For Example:

If the sample Content of the list is as follows:

M = [90,81,72,75,98,68, 87]

Sample Output of the code should be:

87 98 81 90

**OR**

Suresh has a list containing 10 integers. You need to help him create a program with separate user defined functions to perform the following operations based on this list.

- Traverse the content of the list and push the odd numbers into a stack.
- Pop and display the content of the stack.

For Example:

If the sample Content of the list is as follows:

N = [10, 13, 33, 46, 11, 79, 44, 17, 25, 36 ]

Sample Output of the code should be:

25 17 79 11 33 13

9. i) A table, **PRODUCT** has been created in a database with the following fields: 1  
**PCODE, PRNAME, QTY, PRICE**  
Give the SQL command to add a new field, **REMARKS** (of type variable character of size 25) to the **PRODUCT** table.
- ii) Differentiate between DDL and DML commands? Give two examples of each. 2

10. Ruthvi has to create a database named **TEXTILE** in MYSQL. She now needs to create a table named **GARMENT** in the database to store the records of various garments. The table **GARMENT** has the following structure. Help her to complete the task by suggesting appropriate SQL commands.

3

**Table:GARMENT**

Field name	Data Type	Remarks
GCODE	CHAR(5)	Primary Key
GNAME	CHAR(25)	NOT NULL
SIZE	CHAR(4)	
COLOUR	CHAR(15)	
PRICE	DECIMAL(10,2)	NOT NULL
QTY	INTEGER	

### Section-C

**Each question carries- 4 marks**

11. Write queries a) to d) based on the tables **TRADERS** and **ITEMS** given below:

4

**Table:TRADERS**

TCODE	TNAME	CITY
T01	ELECTRONICS SALES	MUMBAI
T02	BUSY STORE CORP	DELHI
T03	DISP HOUSE INC	CHENNAI

**Table: ITEMS**

CODE	INAME	QTY	PRICE	COMPANY	TCODE
1001	Digital Pad	120	11000	XENITA	T01
1006	LED Screen	70	38000	SANTORA	T02
1004	CAR GPS	60	2150	GEOKNOW	T01
1003	Digital Cam 12 X	160	8000	DIGICLICK	T02
1005	PenDrive 32GB	600	1200	STOREHOME	T03

- To display the details of all the items in ascending order of item names (i.e. INAME).
- To display item name and price of all those items, whose price is in the range of 10000 and 22000 (both values inclusive).
- To display the number of items, which are traded by each trader.  
The expected output of this query should be:  
T01 2  
T02 2  
T03 1
- To display the Iname,Tname,Price, and quantity (i.e.Qty) of those items, which have quantity more than 150.

12.

i)

Give one advantage and one disadvantage of Bus topology.

2

OR

Differentiate between a switch and a router.

ii)

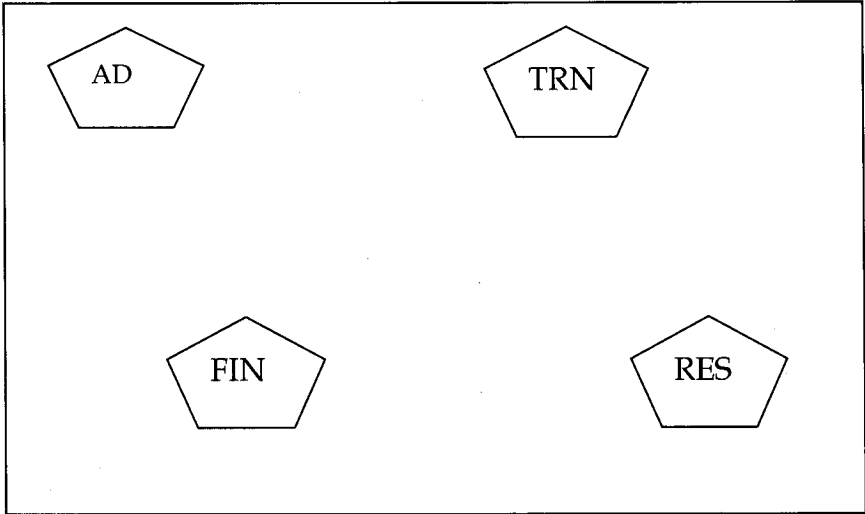
Define a) Packet switching  
b) Message switching

2

13.

“Ujjal Patra” an NGO is planning to setup its new campus at Chennai for its web-based activities.The campus has four(4) UNITS as shown below:

4



AD- ADMIN UNIT                      TRN- TRAINING UNIT

FIN- FINANCE UNIT                RES – RESOURCE UNIT

Distance between above UNITs are given below:

Unit-1	Unit-2	Distance
Admin	Training	65 m
Admin	Resource	120 m
Admin	Finance	100 m
Finance	Training	60 m
Finance	Resource	40 m
Training	Resource	50 m

No. of Computers in various UNITs are:

Unit	No. of computers
Admin	150
Finance	25
Training	90
Resource	75

- a) Suggest and draw a cable layout to efficiently connect the various units within the Chennai campus.
- b) Suggest the most suitable place(ie.Units) to house the server of this organization with a suitable reason.

c) Suggest the placement of Repeater and Hub/Switch in the units in the above network.

d) NGO is planning to connect its Regional Office at Pondicherry, Tamil Nadu. Which Out of the following wired communication, will you suggest for a high-speed connectivity?

i) Twisted Pair Cable ii) Ethernet Cable iii) Fiber Optic Cable

**End of the Question Paper**