INSTRUCTIONS:

1. **Paper is divided into 3 sections i.e TYPE A, B and C.**
2. **Type A, consists of 7 questions(1-7). Each questions carries 2 mark each**
3. **Type B, consists of 3 questions(8-10). Each questions carries 3 mark each**
4. **Type C, consists of 3 questions(11-13). Each questions carries 4 mark each**
5. **Internal Choices have been given for questions number 7 ,8 and 12**

SECTION A (14 MARKS)

Q1.	i)	Name the package for connecting Python with MySQL database	2
	ii)	What is the purpose of cursor object?	
Q2.	i)	A small computer networks that are confined to localized area is called-----------------	2
	ii)	The cables that made of plastic or glass and are about as thick as human hair, used for data communication is--------------------	

Q3. In Marks column of 'Student' table, for Rollnumber 2, the Class Teacher entered   2
the marks as 45. However there was a totaling error and the student has got
her marks increased by 5. Which MySQL command should she use to change the
marks in 'Student' table.

Q4. The LastName column of a table "Directory" is given below: 2

LastName
Batra
Sehgal
Bhatia
Sharma
Mehta

Based on this information, find the output of the following queries:
a) SELECT lastname FROM Directory WHERE lastname like "_a%";
b)SELECT lastname FROM Directory WHERE lastname not like "%a";

Q5. Mr. Janak is using a table with following columns :   2
Name , Class , Course_Id, Course_name
He needs to display names of students, who have not been assigned any stream
or have been assigned Course_name that ends with "economics". He wrote the
following command, which did not give the desired result.
SELECT Name, Class FROM Students WHERE Course name = NULL OR Course
name="%economics";
Help Mr. Janak to run the query by removing the error and write the correct
query.

Q6.	i)	Which keyword is used to remove duplicate records from relation.	2
	ii)	A table "Design" in a database has 5 columns and 2records. What is the degree and cardinality of this table?	

Q7.   2

Table: CD

Code	Title	Duration	Singer	Category
101	Sufi Singer	50mins	Zakir Faiz	12
102	Eureka	45mins	Shyam Mukharjee	12
103	Nagmey	23 mins	Sonvi Kumar	77
104	Dosti	35 mins	Bobby	1

Table: TYPE

(i)

Category	Description
1	Jazz
12	Classical
40	Country Side
78	Pop

Name the Primary key in ''CD'' table.

(ii) Name the foreign key in ''CD'' table.
(iii) Write the Cardinality and Degree of ''TYPE'' table.
(iv) Check every value in CATEGORY column of both the tables. Do you find any
discrepancy ? State the discrepancy
OR
Consider the tables given below which are linked with each other and maintains
referential integrity:

Table: SAP

SAPID	ItemCode	ItemName	ItemStorageLocation

S1001	1001	RECEIVER	W12-B3-R24
S1002	1002	TRANSPONDER	W13-B7-R87
S1003	1003	BATTERY BANK	W21-B1-R87
S1004	1004	INVERTER	W21-B11-R2
S1005	1005	GENSET	W22-B15-R16

Table Store:

StoreID	ItemCode	StoreLocation	ReceiveDate
1201	1001	Hauz Khaas	2016-05-20
1202	1002	Rajouri Garden	2016-06-14
1203	1003	Rohini	2016-05-06
1204	1004	Hauz Khaas	2016-07-15
1205	1005	Rajendra Place	2016-05-27

With reference to the above given tables, write commands in SQL for (i) and (ii),(iv) and output for (iii) below:

i.   To display the ItemCode,ItemName and ReceivedDate of all the items

ii.   To display SAPID,ItemName,ItemStorageLocation of all the items whose Received date is after 2nd May 2016.

iii.   SELECT SAPID,ItemName,STOREID FROM SAP,Store WHERE SAP.ItemCode=Store.ItemCode AND StoreLocation = "Hauz Khas"

iv.   What will be the degree and cardinality of the cartesian product formed while combining both the above given tables 'SAP' and 'Store' ?

SECTION B (9 MARKS)

Q8. Write a program that implements three stacks namely HighestPr, NormalPr and LowestPr.The program accepts an element along with its priority from the user.e.g., enter element: KP213   **3**
Priority (Highest/ Normal / Lowest (H/N/L): H
As per priority entered, the element is added in the corresponding stack.
A menu offers following options:
1. Insert Element
2. Search for Element
3. Change Priority
For option 1, element is inserted in one stack as described above.
For option 2, ask for an element and search for it in all three stack. If found, display its stack name otherwise display "Element not found".
For option 3, ask for an clement, if it exists in a stack, ask for its new priority as: Want to Increase/Decrease its priority (I/D) ? I
And then remove the element from its existing stack and add it to the new stack as changed priority.

OR

Write a program to create a Stack of Student records contains Roll, Name and Percentage mark. Perform the following:
a. Display the details of Second Topper Student
b. Insert a new Record to a Stack
c. Remove the student details scored less than 90% and display Stack

Q9.   **3**

COMPANY

CID	NAME	CITY	PRODUCTNAME
111	SONY	DELHI	TV
222	NOKIA	MUMBAI	MOBILE
333	ONIDA	DELHI	TV
444	SONY	MUMBAI	MOBILE
555	BLACKBERRY	MADRAS	MOBILE
666	DELL	DELHI	LAPTOP

CUSTOMER

CUSTID	NAME	PRICE	QTY	CID
101	ROHAN SHARMA	70,000	20	222
102	DEEPAK KUMAR	50,000	10	666
103	MOHAN KUMAR	30,000	5	111
104	SAHIL BANSAL	35,000	3	333
105	NEHA SONI	25,000	7	444
106	SONAL AGGARWAL	20,000	5	333
107	ARUN SINGH	50,000	15	666

1. To display those company name which are having prize less than 30000.
2. To display the name of the companies in reverse alphabetical order.
3. To increase the prize by 1000 for those customer whose name starts with S?
4. To add one more column totalprice with decimal] 10,2) to the table customer
5. SELECT   COUNT(*) , CITY   FROM COMPANY GROUP BY CITY;

6. SELECT PRODUCTNAME,CITY, PRICE FROM COMPANY, CUSTOMER WHERE COMPANY. CID=CUSTOMER.CID AND PRODUCTNAME="MOBILE";

Q10 a) Write the SQL queries: 3

Table: SHOP

Id	SName	Area
S001	ABC computronics	CP
S002	All Infotech Media	GK II
S003	Tech Shop	CP
S004	Geeks Tecno Soft	Nehru Place
S005	Hitech Tech Store	Nehru Place

Table: ACCESSORIES

No	Name	Price	Id
A01	Mother Board	12000	S01
A02	Hard Disk	5000	S01
A03	Keyboard	500	S02
A04	Mouse	300	S01
A05	Mother Board	13000	S02
A06	Keyboard	400	S03
A07	LCD	6000	S04
T08	LCD	5500	S05
T09	Mouse	350	S05
T10	Hard Disk	4500	S03

1. To display Name and Price of all the Accessories in ascending order of their Price.
2. To display Id and SName of all Shop located in Nehru Place.
3. To display Minimum and Maximum Price of each Name of Accessories.
4. To display Name, Price of all Accessories and their respective SName where they are available.

Write the output of the following SQL

5. SELECT DISTINCT NAME FROM ACCESSORIES WHERE PRICE> =5000;
6. SELECT NAME, PRICE*0.05 DISCOUNT FROM ACCESSORIES WHERE SNO IN ('S02','S03');

SECTION C (12 MARKS)

Q11 Consider the table '**PERSONS**' given below. Write commands in SQL for (i) to (iv)   4

Pid	Surname	FirstName	Gender	City	PinCode	BasicSalary
1	Sharma	Geeta	F	Udhamwara	182141	50000
2	Singh	Surinder	M	Kupwara Nagar	193222	75000
3	Jacob	Peter	M	Bhawani	185155	45000
4	Alvis	Thomas	M	Ahmed Nagar	380025	50000
5	Mohan	Garima	M	Nagar Coolangatta	390026	33000
6	Azmi	Simi	F	New Delhi	110021	40000
7	Kaur	Manpreet	F	Udhamwara	182141	42000

(i) Display the SurNames, FirstNames and Cities of people residing in Udhamwara city.
(ii) Display the Person Ids (PID), cities and Pincodes of persons in descending order of Pincodes.
(iii) Display the First Names and cities of all the females getting Basic salaries above 40000.
(iv) Display First Names and Basic Salaries of all the persons whose firstnames starts with "G".

Q12   i) Differentiate between packet switching and message switching technique in network communication.   4(2+2)
      ii) What is the difference between HTTP and FTP?

OR

      i) Write two advantages of using an optical fibre cable over an ethernet cable to connect two service stations, which are 190 m away from each other
      ii) Expand DHCP, FLOSS, CDMA, GPRS

Q13   i) What is difference between star topology and bus topology of network?   4(2+2)
      ii) What is the importance of URL in networking?