BHARATIYA VIDYA BHAVAN'S
SARDAR PATEL INSTITUTE OF TECHNOLOGY
MUNSHI NAGAR, ANDHERI (WEST), MUMBAI – 400 058, India
(Autonomous College Affiliated to University of Mumbai)

executed

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Duration: 1 hour
Marks: 25 Marks
General Instructions:
Viva will be taken at the time of practical as well as after the practical if required.
The figures to the right indicate full marks.
If you are using any additional information, state it clearly.
Once you finish with the code show it to the examiner for testing. Write your answer in Word file and upload it on Moodle.

Q. 1 A)	**Consider the University database given below. The primary keys are underlined and the data types are specified:** **Student** (snum:number,sname:string, major:string, level:string, age:number) **Class** (cname:string,meet_at:number, room:number,not null, fid:number) **Enrolled** (snum:number, cname:string) **Faculty** (fid,:numberfname:string,not null, deptid:number) a) Create the above tables by properly specifying the primary keys and the foreign keys and named constraints. b)Enter atleast five tuples for each relation. c) Write SQL query to find average age of each class. d) Write SQL query to display class details where faculty Anita is teaching. e) Write SQL query to drop all the constraints defined on Faculty relation.	**10**
B)	Write a PL/SQL Function to find factorial of a given number.	**10**
C)	Write a PL/SQL block to grant all the privileges to RMAN user on Student table.	**5**

Q1 A)

(a).
```
Create table student (snum primary key, sname varchar(20),
major varchar(20), level varchar(20), age int);

Create table class (cname varchar(20) primary key,
meet_at int, room int not null, fid int);

Create table enrolled (snum int, cname varchar(20),
foreign key(snum) references student(snum), foreign key(cname)
refrences class(cname));

Create table faculty (fid int primary key,
fname varchar(20) not null, deptid int);
```

(b)
```
Insert into student values (1, "mohit", "mca", "fy", 23),
(2, "soni", "btech", "fy", 18), (3, "suman", "mca", "sy", 24),
(4, "ramesh", "mca", "fy", 20), (5, "suresh", "btech", "ty", 22);
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- Insert into class values ("bca", 23, 401, 11), ("mca", 54, 405, 22), ("btech", 21, 404, 33), ("mtech", 40, 202, 44), ("bsc", 33, 403, 55);
- Insert into enrolled values (1, 'mca'), (2, 'btech'), (3, 'mca'), (4, 'mca'), (5, 'btech');
- Insert into faculty values (22, "john", 675), (55, "nick", 546), (33, "chris", 786), (66, "carla", 657), (11, "ros", 123);

(c) Select c.cname as Class_Name, avg(sage) as Average_Age from class c join enrolled e on c.cname = e.cname join student s on e.snum = s.snum group by c.cname;

(d) select c.* from class c join faculty f on c.fid = f.fid where f.fname = 'Anita';

(e) Alter table faculty Drop primary key;

B) Create Definer = 'root'@'localhost' function 'calc_factorial' (num INT) returns int
Deterministic
Begin
Declare fact_value int default 1;
Declare i int default 2;
If num < 0 then
signal sqlstate '45000' set message_text = 'Factorial of negative numbers is undefined';
Else If num <= 1 then return 1;
Else while i <= num
Do set fact_value = fact_value * i;
set i = i+1;
End While;
Return fact_value;
End if;
End

C) Grant All Privileges on University.student to 'RMAN'@'localhost';

Select * from student where salary IN(25000, 30000);

Question by Examiner