B.P. Poddar Institute of Management and Technology
Department of Information Technology
Academic Year: 2024-25 [Even Semester] Database Management System (PCC CS691)

OUTCOME BASED EDUCATION (OBE)

Question No.	Knowledge Domain	Allotted Marks	COs
Set - 1	Remember, Understand, Apply	20	CO3,CO4
Set - 2	Understand, Apply	20	CO3,CO4
Set - 3	Understand, Analyze, Apply	20	CO3,CO4
Set - 4	Analyze, Apply	20	CO3,CO4
Set - 5	Remember, Analyze, Apply	20	CO3,CO4

Time Allotted: 3 hrs **Full Marks: 60**

Marks Distribution (Experiment + Output:30, Lab Copy:10, Viva: 20)

SET - 1

A. Create the following table: **STUDENT** and display structure

Column Name	Data Type	Size	Constraints
RegNo	Varchar2	6	Not null
RollNo	Number	6	Not null
Name	Varchar2	10	Not null
Address	Varchar2	15	Not null
PhoneNo	Number	10	
YearOfAdm	Number	4	Not null
DeptCode	Varchar2	4	Not null
Year	Number	1	Not null
BirthDate	Date		Not null

Insert the following data in the student table.

RegNo	RollNo	Name	Address	PhoneNo	YearOfAdm	DeptCode	Year	BirthDate
012301	123001	Ashish	Jadavpur	24761892	2003	CSE	3	01-Jun-81
012315	123015	Titas	Kasba	24424987	2003	CSE	3	19-Sep-81
012424	124024	Ipsita	Kaikhali	25739608	2004	CSE	2	15-Aug-82
012357	123057	Animesh	Barasat	25426742	2003	IT	3	15-Jul-81
012419	124019	Srija	Garia	24755655	2004	EE	2	25-Oct-82

1. Write SQL command to add primary key to the table STUDENT with RegNo as Primary Key
2. Display all student records
3. Display name, address and year of admission of each student
4. List the name and year of students who are in Computer Science.

B. Write SQL queries in below

TABLE : ACCOUNT

ANO	ANAME	ADDRESS
101	Nirja Singh	Bangalore
102	Rohan Gupta	Chennai
103	Ali Reza	Hyderabad
104	Rishabh Jain	Chennai
105	Simran Kaur	Chandigarh

TABLE: TRANSACT

TRNO	ANO	AMOUNT	TYPE	DOT
T001	101	2500	Withdraw	2017-12-21
T002	103	3000	Deposit	2017-06-01
T003	102	2000	Withdraw	2017-05-12
T004	103	1000	Deposit	2017-10-22
T005	102	12000	Deposit	2017-11-06

(i) To display details of all transactions of TYPE Withdraw from TRANSACT table

(ii) To display ANO and AMOUNT of all Deposit and Withdrawals done in month of May'2017 from table TRANSACT

C.Create a view on the STUDENT table named V_STD selecting all the columns. Run the following queries on the view.(Create a STUDENT Table with minimum 4 tuples.)

1. Display all data from the view.
2. Insert a new row into the view with the following data –

012363 123011 Bishakh Salt Lake 23371987 2005 IT 2 01-May- 82

3. Display data from student table to verify that the row has been inserted into the table.
4. Update the address of Bishakh to "SectorV" & verify the change in the table.

SET - 2

A. Create the following table: **STUDENT** and display structure

Column Name	Data Type	Size	Constraints
RegNo	Varchar2	6	Not null
RollNo	Number	6	Not null
Name	Varchar2	10	Not null
Address	Varchar2	15	Not null

PhoneNo	Number	10	
YearOfAdm	Number	4	Not null
DeptCode	Varchar2	4	Not null
Year	Number	1	Not null
BirthDate	Date		Not null

Insert the following data in the student table.

RegNo	RollNo	Name	Address	PhoneNo	YearOfAdm	DeptCode	Year	BirthDate
012301	123001	Saibal	Jadavpur	24761892	2003	CSE	3	01-Jun-81
012315	123015	Titas	Kasba	24424987	2003	CSE	3	19-Sep-81
012424	124024	Ipsita	Kaikhali	25739608	2004	CSE	2	15-Aug-82
012250	122050	Anita	Hooghly	36719695	2002	IT	4	22-Dec-80
012344	123044	Santanu	Howrah	null	2003	IT	3	03-Jan-82
012357	123057	Animesh	Barasat	25426742	2003	IT	3	15-Jul-81

1.Display names of students with ‘a’ as the second letter in their names.

2.Display names of students in descending alphabetical order.

3.List the names of students who do not have a phone number.

4.List names of student and their departments whose date of birth is after 1st June 1981.

5.Create a CHECK constraint on this table for the field Year such that Year should be between 1&4.

Consider the following tables EMP and SALGRADE, write the query

TABLE: EMPLOYEE

ECODE	NAME	DESIG	SGRADE	DOJ	DOB
101	Vikrant	Executive	S03	2003-03-23	1980-01-13
102	Ravi	Head-IT	S02	2010-02-12	1987-07-22
103	John Cena	Receptionist	S03	2009-06-24	1983-02-24
105	Azhar Ansari	GM	S02	2009-08-11	1984-03-03
108	Priyam Sen	CEO	S01	2004-12-29	1982-01-19

TABLE: SALGRADE

SGRADE	SALARY	HRA
S01	56000	18000
S02	32000	12000
S03	24000	8000

i)To display details of all employee in descending order of their DOJ

ii) To display NAME AND DESIG of those employees whose sgrade is either S02 or SO3

c.Write a query to create a view to getting a count of how many customers we have at each level of a grade.

customer_id	cust_name	city	grade	salesman_id
3002	Nick Rimando	New York	100	5001
3007	Brad Davis	New York	200	5001
3005	Graham Zusi	California	200	5002
3008	Julian Green	London	300	5002
3004	Fabian Johnson	Paris	300	5006
3009	Geoff Cameron	Berlin	100	5003
3003	Jozy Altidor	Moscow	200	5007

SET - 3

A. Create a table named Client_Master_Rollno in the following figure:

Client_No	Name	Address	City	State	Pincode	Balance_Due
C0001	Amit Ghosh	14 ABC Road	Kolkata	West Bengal	700076	2000
C0002	Samer Roy	54 Chandni Chauk	Delhi	Delhi	100021	1500
C0003	Sudeep Kar	11/12 AP Street	Bangalore	Karnataka	600098	500
C0004	Sushmita Bose	ASD Street	Mangalore	Karnataka	878880	1200
C0005	Madhumita Nag	12 PP Road	Bangalore	Karnataka	607564	5600

a) Make the field Client_No as a Primary Key to the table.

b) 1st Character in the Client_No must be in 'C'.

c) Listing of the names of all Clients having 'a' as the second letter in their names.

d) List out all clients who stay in 'Bangalore' or 'Mangalore'.

B. Consider the table SHOPPE and ACCESSORIES, write the query

Table : SHOPPE

Id	SName	Area
S01	ABC Computronics	CP
S02	All Infotech Media	GK II
S03	Tech Shoppe	CP
S04	Geeks Tecno Soft	Nehru Place
S05	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

(i) To display Name and Price of all the Accessories in descending order of their Price
(ii) To display Id and Sname of all the Shoppe location in Nehru Place.

C. Create a view named V_FACULTY consisting of columns FacultyName, DeptCode from FACULTY table and HOD from Department table.(Create a Faculty Table and Department Table. Populate the two table with minimum 4 distinct department values)1. Display data from V_FACULTY

3. Try to insert a new row into this view V_FACULTY.
4. Try to update the DeptCode of a CSE faculty to IT.

SET - 4

A. Create table **SUBJECT** and insert minimum 10 tuples.

Column Name	**Data Type**	**Size**	**Constraints**
SubjectCode	Varchar2	4	Not null, Primary key
SubjectName	Varchar2	15	Not null
Faculty	Varchar2	4	Foreign key references FacultyCode of table **FACULTY**

B. Create table: FACULTY

Column Name	**Data Type**	**Size**	**Constraints**
FacultyCode	Varchar2	4	Primary key
FacultyName	Varchar2	15	Not null
DateOfJoin	Date		Not null
DeptCode	Varchar2	4	Not null

Insert appropriate values in the above table.

FacultyCode	**FacultyName**	**DateOfJoin**	**DeptCode**
F101	S. RoyChoudhury	01-10-2005	CSE
F105	P. Roy	01-05-2006	CSE
F201	D. Dutta	24-08-2005	IT
F301	S. Paul	15-03-2003	MCA
F401	D. Majumdar	01-02-2002	IT
F501	N. Sanyal	31-11-2003	EE
F601	I. Majumdar	10-04-2000	ECE
F701	S. Ghosh	01-01-2004	ECE
F801	P. Das	15-06-2002	EE

C. Create the following table: **STUDENT** and display structure

Column Name	Data Type	Size	Constraints
RegNo	Varchar2	6	Not null
RollNo	Number	6	Not null
Name	Varchar2	10	Not null
Address	Varchar2	15	Not null
PhoneNo	Number	10	
YearOfAdm	Number	4	Not null
DeptCode	Varchar2	4	Not null
Year	Number	1	Not null
BirthDate	Date		Not null

Insert the following data in the student table.

RegNo	RollNo	Name	Address	PhoneNo	YearOfAdm	DeptCode	Year	BirthDate
012301	123001	Ashish	Jadavpur	24761892	2003	CSE	3	01-Jun-81
012315	123015	Titas	Kasba	24424987	2003	CSE	3	19-Sep-81
012424	124024	Ipsita	Kaikhali	25739608	2004	CSE	2	15-Aug-82
012250	122050	Anita	Hooghly	36719695	2002	IT	4	22-Dec-80
012344	123044	Biplab	Howrah	null	2003	IT	3	03-Jan-82
012357	123057	Animesh	Barasat	25426742	2003	IT	3	15-Jul-81
012419	124019	Srija	Garia	24755655	2004	EE	2	25-Oct-82
012427	124027	Saibal	Garia	24753306	2004	IT	2	22-Mar-83
012236	122036	Santanu	DumDum	null	2002	ECE	4	11-Dec-80
012349	123049	Gita	Kasba	24428682	2003	MCA	3	14-Apr-81

a) Add the **salary** column in the FACULTY table (Mention the apropriate Queries)

1 Find the number of students in each department with their department name.

2. Increment the salary of each faculty by Rs 500.
3. Find the second maximum salary among all faculties.
4. Name the departments having highest number of faculties and display the names of faculties.

C. Create a view on student table snamed V_STD_2 selecting the columns – RegNo, Name, Year, Deptcode.

1.Display data from the view.

2. Update the Deptcode of 'Saibal' to 'IT' through view.

SET - 5

A.

1. Write Query for the following requirements – (STUDENT)

ID	NAME	STIPEND	SUBJECT	AVERAGE	DIVISON
1	KARAN	400	PHYSICS	68	1
2	DIVAKAR	450	COMP SC	68	1
3	DIVYA	300	CHEMISTRY	62	2
4	ARUN	350	PHYSICS	63	1
5	SABINA	500	MATHS	70	1
6	JOHN	400	CHEMISTRY	55	2
7	ROBERT	250	PHYSICS	64	1
8	RUBINA	450	MATHS	NULL	NULL
9	VIKAS	500	COMP SC	62	1
10	MOHAN	300	MATHS	57	2

GUIDE:

SUBJECT	ADVISOR
PHYSICS	ALOK
COMP SC	RAJAN
CHEMISTRY	MANJU
MATHS	SMITA
HISTORY	KISHORE

1. TO DISPLAY THE NAME OF STUDENT, SUBJECT AND ADVISOR NAME
2. TO DISPLAY THE STUDENT NAME AND ADVISOR ALL THE STUDENTS WHO ARE OFFERING EITHER PHYSICS OR CHEMISTRY

A. Create table **DEPARTMENT**

Column Name	Data Type	Size	Constraints
DeptCode	Varchar2	4	Not null, Primary key
DeptName	Varchar2	15	Not null
HOD	Varchar2	4	Not null

Insert values into DEPARTMENT table, as follows:

DeptCode	DeptName	HOD
IT	Information Technology	F201
EE	Electrical Engineering	F501
CSE	Computer Science and Engineering	F101
ECE	Electronics Engineering	F701
MCA	Master of Computer application	F301

Add a foreign key constraint in STUDENT against DeptCode column which references department.

B. Create table: FACULTY

Column Name	**Data Type**	**Size**	**Constraints**
FacultyCode	Varchar2	4	Primary key
FacultyName	Varchar2	15	Not null
DateOfJoin	Date		Not null
DeptCode	Varchar2	4	Not null

Insert appropriate values in the above table.

FacultyCode	**FacultyName**	**DateOfJoin**	**DeptCode**
F101	A.Kanjilal	01-10-2000	CSE
F105	P. Roy	01-05-2006	CSE
F201	S. Sengupta	24-08-2004	IT
F301	S. Paul	15-03-2003	MCA
F401	D. Majumdar	01-02-2002	IT

[1] Alter the table **Faculty** and add check constraint such that FacultyCode starts with 'F'

[2] Alter the table **Faculty** and add check constraint such DeptCode is either CSE,IT, MCA, EE, ECE

[3] Add constraint : DeptCode of **Faculty** is foreign key and references DeptCode in **Department.**

[4] Add Constraint: HOD of **Department** table is foreign key and references FacultyCode of **Faculty.**

C.Write a query to create a view that shows all of the customers who have the highest grade.
table: customer

customer_id	cust_name	city	grade	salesman_id
3002	Nick Rimando	New York	100	5001
3007	Brad Davis	New York	200	5001
3005	Graham Zusi	California	200	5002
3008	Julian Green	London	300	5002
3004	Fabian Johnson	Paris	300	5006
3009	Geoff Cameron	Berlin	100	5003
3003	Jozy Altidor	Moscow	200	5007