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OPSC
Programmer

Previous Year Paper
(Computer Programming)
2021

PRACTICAL TEST IN COMPUTER PROGRAMMING

Time : $2\frac{1}{2}$ hours

Full Marks : 100

The figures in the right-hand margin indicate marks.

*Answer **all** questions.*

1. **Create the following Database in MySQL.**   20

    (a) Create a Database called AJAX.

    (b) Create the following Tables :

Employee			Remarks
eid	Int	Primary Key Auto Increase	Employee Identification Number
ecode	Varchar(20)		Employee Code
ename	Varchar(50)		Name
desigid	int		Designation
dob	Date		Date of Birth
deptid	Int		Department ID
status	Char(1)	Default value – A	Status – A – Active, R – Retired, S – Suspended,

Designations			Remarks
desigid	Int	Primary Key Auto Increase	Designation Identification Number
designation	Varchar(50)		

Departments		Remarks	
deptid	Int	Primary Key Auto Increase	Department Identification Number
dname	Varchar(50)		Department Name

Leave Types		Remarks	
ltid	Int	Primary Key Auto Increase	Leavetype Identification Number
ltname	Varchar(50)		Leavytype Name
Ldpy	Int		Leave Days per Year

Leave Trans		Remarks	
ltranid	Int	Primary Key Auto Increase	Leave Transaction Identification Number
eid	Int		Employee ID
ltid	Int		Leave Type ID
fromdate	Date		
nod			Number of Days
todate	Date		

(c) Create Foreign Key :

Employee.desigid – Designations.desigid

Employee.deptid – Departments.deptid

LeaveTrans.~~eid~~ ltid – ~~Employee.eid~~ Leave Types. ltid

LeaveTrans.ltid – Employee.ltid

(d) Enter the following Master Data :

Departments

deptid	dname
1	Accounts
2	Stores

Designations

desigid	designation
1	Manager
2	Secretary

Employees

eid	ecode	ename	desigid	dob	deptid	status
1	E01	Ram	1	01 – Jun – 70	1	A
2	E02	Hari	2	21 – Nov – 96	1	A
3	E03	Durga	2	11 – Aug – 78	2	A
4	E04	Gopal	2	05 – Apr – 79	2	A
5	E05	Satya	2	21 – Jan – 90	2	A

LeaveTypes

ltid	ltname	ldpy
1	Casual	10
2	Sick	10
3	Earned	20

2. **Transactions and Reports :** 20

(a) Enter the following Transactions :

1. On 01-04-2021 Employee with eid 1 take leave for 2 Days of Leave Type 2
2. On 02-04-2021 Employee with eid 2 take leave for 1 Day of Leave Type 1
3. On 06-04-2021 Employee with eid 1 take leave for 1 Day of Leave Type 2
4. On 13-04-2021 Employee with eid 3 take leave for 3 Days of Leave Type 1
5. On 02-05-2021 Employee with eid 5 take leave for 1 Day of Leave Type 3
6. On 07-05-2021 Employee with eid 5 take leave for 2 Days of Leave Type 1
7. On 08-05-2021 Employee with eid 1 take leave for 3 Days of Leave Type 1
8. On 10-05-2021 Employee with eid 3 take leave for 2 Days of Leave Type 3
9. On 11-05-2021 Employee with eid 5 take leave for 2 Days of Leave Type 1
10. On 14-05-2021 Employee with eid 2 take leave for 3 Days of Leave Type 1
11. On 05-06-2021 Employee with eid 3 take leave for 1 Day of Leave Type 3
12. On 07-06-2021 Employee with eid 2 take leave for 1 Day of Leave Type 1
13. On 07-06-2021 Employee with eid 2 take leave for 2 Days of Leave Type 3
14. On 12-06-2021 Employee with eid 3 take leave for 2 Days of Leave Type 2
15. On 14-06-2021 Employee with eid 3 take leave for 3 Days of Leave Type 1
16. On 14-06-2021 Employee with eid 3 take leave for 3 Days of Leave Type 2
17. On 15-06-2021 Employee with eid 5 take leave for 2 Days of Leave Type 3
18. On 18-06-2021 Employee with eid 3 take leave for 3 Days of Leave Type 1
19. On 18-06-2021 Employee with eid 2 take leave for 3 Days of Leave Type 1
20. On 18-06-2021 Employee with eid 1 take leave for 3 Days of Leave Type 2

(b) Find the following :

    (i)   Which Employees are absent on 19-06-2021.

    (ii) How many leaves are sanctioned for department 2.

    (iii) Display employees and number of leaves taken.

    (iv) Display Leave Type and number of leaves taken.

    (v) Display Leave type, employees and number of leaves taken.

3. **Create a web form to enter data given in (2.6.5) above.**   20

4. **Create web reports for (2.6.1) and (2.6.2) above.**   20

5. **Excel exercise.**   20

ABC Corp is interested in building an office building and operating the same. The details of projet is given below :

- The planned size of the building is 180000 sqft.

- The estimated cost per sqft is INR 80.

- The interest rate is 12% for a term of 30 years.

- The cost of operating the building is INR 1.2 per sqft.

- The rent per sqft is expected to be INR 9.

- It is assumed that 30% of the sqft will be vacant.

The depreciation horizon is 30 years and straight line method may be used for computation of depreciation.

Applicable Tax rate is 34% on taxable income. If you make a loss, it can be carried forward to the next year.

Task 1 :

- Build a Spread Sheet to model the above scenario.

- Compute the Before and After tax profit.

- Compute the Before and After tax cash-flow.

Task 2 :

Create What-if analysis of After Tax Profit and After Tax Cash Flow for the following situations :

- Cost per sqft varies from 50 to 90.

- Rent per sqft varies from 8 to 12.

- Av Op exp per sqft varies from .6 to 1.4.

- Vacancy Rate varies from .2 to .6.

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