

GOVERNMENT POLYTECHNIC, KOLHAPUR – 416004.

(An Autonomous Institute of Govt. Of Maharashtra)

WINTER - 2024**EXAM SEAT NO.**

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| 2 | 3 | 6 | 0 | | |
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LEVEL : - III

PROGRAM : INFORMATION TECHNOLOGY

COURSE CODE :- ITH304

COURSE NAME :- DATABASE MANAGEMENT SYSTEM

MAX. MARKS : 70

TIME : 03 Hrs

DATE :- 5/12/2024

Instruction :-

- 1) Answers of two sections must be written in separate section answer book provided.
- 2) Illustrate your answers with sketches wherever necessary.
- 3) Use of non-programmable pocket calculator is permissible.
- 4) Mathematical and other tables shall be made available on request.
- 5) Assume and mention suitable additional data if necessary.
- 6) Use of Mobile is strictly prohibited.
- 7) QN- Question No., SQN-Sub Question No. R- Remembering, U- Understanding, A- Application.

| QN | S Q N | question Text | R/ U/ A | Co | Ma rks |
|-----|-------------|--|---------------|----|-----------|
| Q.1 | | Attempt any THREE: (2 X 3) | | | 06 |
| | a) | State the four database users. | R | 1 | |
| | b) | Define Database Schema. | R | 2 | |
| | c) | Write SQL syntax for i) Create View ii) Drop View | R | 3 | |
| | d) | Define Relational Model. | R | 2 | |
| | e) | Describe not null and check constraint with example. | R | 3 | |
| Q.2 | | Attempt any FOUR: (4 X 4) | | | 16 |
| | a) | Distinguish any four points between network model and hierarchical model. | U | 1 | |
| | b) | State and Explain any four Dr. E. F. Codd's rules. | U | 2 | |
| | c) | Explain types of join with example. | U | 3 | |
| | d) | Consider the following relational database schema consisting of the four relation schemas: passenger (pid, pname, pgender, pcity) agency (aid, aname, acity) flight (fid, fdate, time, src, dest) booking (pid, aid, fid, fdate) Answer the following questions using relational algebra queries; i) Get the details about all flights from Chennai to New Delhi. ii) Find the passenger names for passengers who have bookings on at least one flight. | U | 2 | |
| | e) | Explain any four string functions with example. | U | 3 | |
| | f) | List disadvantages of typical file processing system. | U | 1 | |

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| Q.3 | Attempt any TWO: (6 X 2) | | | 12 |
| a) | Draw an ER diagram for library management system. (Use Books, Publisher ,Author,Staff & Member entities) | A | 1 | |
| b) | Explain Following Operations of Relational Algebra i. Projection(π) ii. Set Difference (-) iii. Rename(ρ) | A | 2 | |
| c) | Write SQL queries for following: – EMP (empno , deptno, ename ,salary, Designation, joining date, DOB,city). i) Create Table with above attributes ii) Insert five records into the table iii) Display All records from Table | A | 3 | |
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PROGRAM : INFORMATION TECHNOLOGY**LEVEL : - THIRD****COURSE CODE :- ITH304****COURSE NAME :- DATABASE MANAGEMENT SYSTEM****MAX. MARKS : 70****TIME : 03 Hrs****DATE :- 5 /12/2024**

| QN | S Q N | Question Text | R/ U/ A | Co | Marks |
|-----|-------------|--|---------------|-----|-----------|
| Q.4 | | Attempt any FOUR: (2 X 4) | | | 08 |
| | a) | Define Functional dependencies | R | CO4 | |
| | b) | List two advantages of PL/SQL | R | CO5 | |
| | c) | State any four PL/SQL datatypes | U | CO5 | |
| | d) | Write IF statement in PL/SQL with Syntax & Example. | A | CO5 | |
| | e) | Define Transaction in DBMS | R | CO6 | |
| | f) | List Types of Database Failure | R | CO6 | |
| Q.5 | | Attempt any FOUR: (4 X 4) | | | 16 |
| | a) | Explain Functional dependencies in Database Normalization. | U | CO4 | |
| | b) | Find The number of super keys in the relation R (A, B, C, D, E) with the following three functional dependencies. $AB \rightarrow C$; $BC \rightarrow D$; $C \rightarrow E$. | A | CO4 | |
| | c) | Explain block structure of PL/SQL with Example. | U | CO5 | |
| | d) | Write a PL/SQL Program to perform basic arithmetic Operations. | A | CO5 | |
| | e) | Explain ACID properties of transaction | U | CO6 | |
| | f) | Write SQL command for following: (i) Create user (ii) Grant privileges to user | A | CO6 | |
| Q.6 | | Attempt any TWO: (6 X 2) | | | 12 |
| | a) | Write step by step syntax with example to create, open and close cursor in PL/SQL | A | CO5 | |
| | b) | Determine in terms of Normalization, below table is in which Normal Form with Justification. A table has fields F1, F2, F3, F4, F5 with the following functional dependencies $F1 \rightarrow F3$ $F2 \rightarrow F4$ $(F1, F2) \rightarrow F5$ | A | CO4 | |
| | c) | Explain states of Database transaction with the help of diagram | U | CO6 | |
