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# Anna University

for Affilated Engineering College - 2021 Regulation

## AID (Artificial Intelligence & Data Science Engineering)

1st Semester | 2nd Semester | 3rd Semester | 4th Semester

5th Semester | 6th Semester | 7th Semester | 8th Semester

Click on Subject/Paper under Semester to enter.

### 1st Semester

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- Matrices and Calculus - MA3151
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- Engineering Chemistry - CY3151
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### 2nd Semester

- Professional English - II - HS3252
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- Engineering Graphics - GE3251
- Physics for Information Science - PH3256
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- Data Structures Design - AD3251

### 3rd Semester

- Discrete Mathematics - MA3354
- Digital Principles and Computer Organization - CS3351
- Database Design and Management - AD3391
- Design and Analysis of Algorithms - AD3351
- Data Exploration and Visualization - AD3301
- Artificial Intelligence - AL3391

### 4th Semester

- Environmental Sciences and Sustainability - GE3451
- Probability and Statistics - MA3391
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### 5th Semester

- Deep Learning - AD3501
- Data and Information Security - CW3551
- Distributed Computing - CS3551
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- Elective 1
- Elective 2

### 6th Semester

- Embedded Systems and IoT - CS3691
- Open Elective-1
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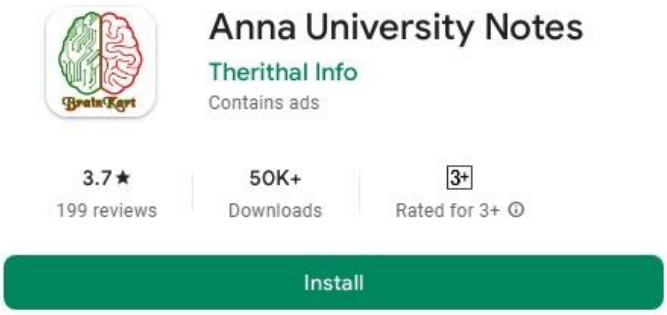
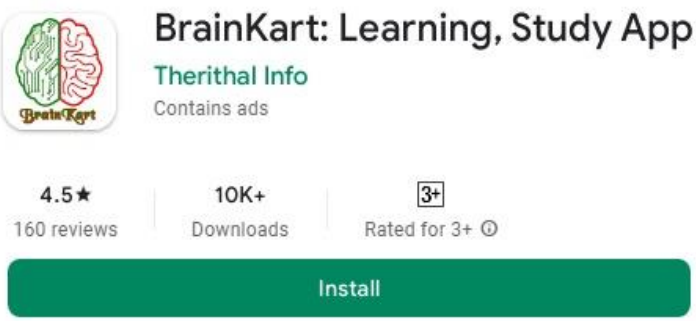
### 7th Semester

- Human Values and Ethics - GE3791
- Open Elective 2
- Open Elective 3
- Open Elective 4
- Management Elective

### 8th Semester

- Project Work / Intership

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| Artificial Intelligence | Software Testing | Grid and Cloud Computing |
| Data Ware Housing and Data Mining | Cryptography and Network Security | Resource Management Techniques |
| Service Oriented Architecture | Embedded and Real Time Systems | Multi - Core Architectures and Programming |
| Probability and Queueing Theory | Physics for Information Science | Transforms and Partial Differential Equations |
| Technical English | Engineering Physics | Engineering Chemistry |
| Engineering Graphics | Total Quality Management | Professional Ethics in Engineering |
| Basic Electrical and Electronics and Measurement Engineering | Problem Solving and Python Programming | Environmental Science and Engineering |

GRACE COLLEGE OF ENGINEERING

(Approved by AICTE, New Delhi & Affiliated to ANNA University, Chennai)

MULLAKKADU, THOOTHUKUDI - 628 005

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

# Anna University Regulation: 2021

## AD3391- Database Design and Management

## II Year/ III Semester

## Question Bank

## UNIT-I

Prepared By,

Mrs. S. KIRUTHIKA, AP/AIDS

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UNIT-I

PART-A

1.Explain the applications of DBMS?

(a) Railway Reservation System,(b).library Management System,(c) Banking and(d) Education sector.

2.What is a database environment?.

A database environment is a collective system of components that comprise and regulatesthe group of data, management, and use of data, which consist of software, hardware, people,techniques of handling database, and the data also.

3.Mention the steps in Database development lifecycle.Ans : planning,requirement gathering,conceptual design,logical design, physical design,construction,implementation and rollout, andOngoing support.

4 .What is database design?

Database design is the organization of data according to a database model. The designerdetermines what data must be stored and how the data elements interrelate. With thisinformation, they can begin to fit the data to the database model.

5.Define entity-relationship model.

An entity – relationship model (or ER model) describes interrelated things of interest in aspecific domain of knowledge.

6.List the types of entities in the ER model?

A basic ER model is composed of entity types (which classify the things of interest) andspecifies relationships that can exist between entities (instances of those entity types).

7.What is the enhanced ER model?

The enhanced entity – relationship (EER) model (or extended entity – relationship model)in computer science is a high-level or conceptual data model incorporating extensions to theoriginal entity – relationship (ER) model, used in the design of databases.

8.What is the UML diagram?

A class diagram in the Unified Modeling Language (UML) is a type of static structurediagram that describes the structure of a system by showing thesystem's classes, theirattributes, operations (or methods), and the relationships among objects.

9.Draw the UML diagram hierarchy.



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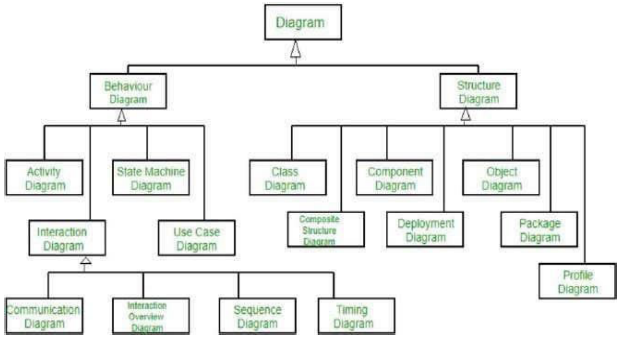


10.Mention the advantages of DBMS

Better Data Transferring,Better Data Security,Better data integration,Minimized Data Inconsistency,Faster data Access,Better decision making,increased end-user productivity and Simple.

11.List the features of a database

1.It is a persistent (stored) collection of related data.

2.The data is input (stored) only once.

3.data is organized (in some fashion).

4.The data is accessible and can be queried (effectively and efficiently).

12.List the components of DBMS.

The major components of database management system are,

Software Hardware Data Procedures

Database Access Language and Users.

13. Give the limitations of ER model? How do you overcome this? The entity relationship model is a collection of basic objects called entitiesAnd relationship among those objects. An entity is a thing or object in theReal world that is distinguishable from other objects.

14. What are the features of a good database design.

Reflects real-world structure of the problem,Can represent all expected data over time,Provides efficient access to data,Avoids redundant storage of data items andClean, consistent, and easy to understand.

15. List the characters of conceptual data model

An overall view of the structure of the data in a business context. Features that are independent of any database or physical storage structure.Objects that may not ever be implemented in physical databases.

16. Application of ER model

Database design,Database troubleshooting,Business,Education andResearch.

17.What is data model? Explain various data models with example?



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There are three main models of data modeling like conceptual, logical, and physical. Aconceptual model is used to establish the entities, attributes, and relationships. A logical datamodel is to define the structure of the data elements and set the relationship between them.Finally, the physical model is used to specify the database-centric implementation of the model.

18. What are the categories of data models.

High level/conceptual data models – provide concepts close to the wayUsers perceive the data.

PART-B

1. List and describe the features and purpose of database?
2. Compare database vs file processing system?
3. Discuss the correspondence between the ER model construct and theRelational model constructs. Show how each ER model construct can beMapped to the relational model. Discuss the option for mapping EERModel construct
4. List and describe the components of database management system with neatDiagram.
5. Explain the database system architecture with neat diagram?

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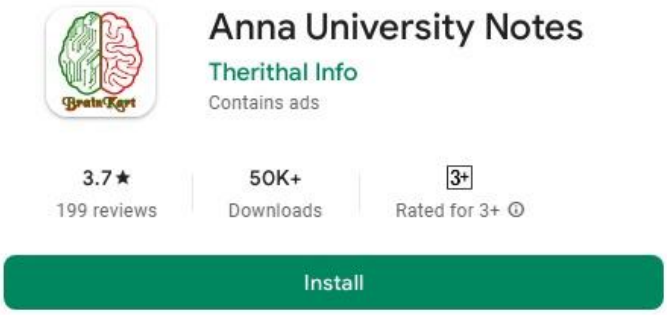


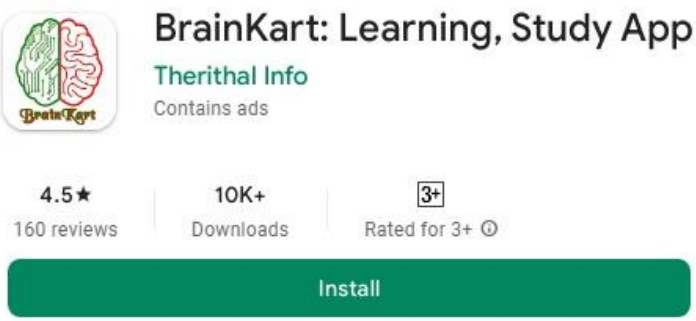


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