

# **INSTITUTE OF AERONAUTICAL ENGINEERING**

(Autonomous) Dundigal, Hyderabad-500043

## **INFORMATION TECHNOLOGY**

# **TUTORIAL QUESTION BANK**

| Course Title      | ADVANCED DATABASES |                    |           |            |         |  |  |  |  |  |
|-------------------|--------------------|--------------------|-----------|------------|---------|--|--|--|--|--|
| Course Code       | AIT505             | AIT505             |           |            |         |  |  |  |  |  |
| Programme         | B. Tech            |                    |           |            |         |  |  |  |  |  |
| Semester          | V                  |                    |           |            |         |  |  |  |  |  |
| Course Type       | Elective           |                    |           |            |         |  |  |  |  |  |
| Regulation        | IARE - R1          | 6                  |           |            |         |  |  |  |  |  |
|                   | Theory Practical   |                    |           |            |         |  |  |  |  |  |
| Course Structure  | Lectures           | Tutorials          | Credits   | Laboratory | Credits |  |  |  |  |  |
|                   | 3                  | -                  | 3         | -          | -       |  |  |  |  |  |
| Chief Coordinator | Mr. D. Rahu        | l, Assistant Profe | essor     |            |         |  |  |  |  |  |
| Course Faculty    | Mr. N. Bhas        | wanth, Assistant   | Professor |            |         |  |  |  |  |  |

#### **COURSE OBJECTIVES:**

| The cou | The course should enable the students to:                           |  |  |  |  |  |  |  |
|---------|---|--|--|--|--|--|--|--|
| Ι       | Define entity relationship model and transaction processing system. |  |  |  |  |  |  |  |
| Π       | Understand various storage structures for database.                 |  |  |  |  |  |  |  |
| III     | Describe the distributed and parallel database processing.          |  |  |  |  |  |  |  |
| IV      | Describe object oriented database concepts and models.              |  |  |  |  |  |  |  |
| V       | Understand various advancements in database technology.             |  |  |  |  |  |  |  |

#### **COURSE OUTCOMES (COs):**

| CO 1 | Understand the concept of Active Databases in Starburst, Oracle, and DB2.        |
|------|--|
| CO 2 | Analyze the concepts of Temporal and Object Databases-SQL.                       |
| CO 3 | Understand the Concepts of Relational calculi, relational algebra and recursion. |
| CO 4 | Explore the concept of Spatial, Text and Multimedia Databases.                   |
| CO 5 | Understand the concept of Uncertainty in Databases                               |

# COURSE LEARNING OUTCOMES (CLOs):

| AIT505.01 | Understand and explain the key ideas underlying database systems and the database approach   |
|-----------|--|
|           | to information storage and manipulation.   |
| AIT505.02 | Design and implement database applications.  |
| AIT505.03 | Understand the types of tasks involved in database administration and the facilities provided in a typical database system to support these tasks.   |
| AIT505.04 | Design adequate backup, recovery and security measures for a database installation, and understand the facilities provided by typical database systems to support these tasks.                               |
| AIT505.05 | Define and use important temporal concepts, such as time point, time interval, and time-<br>interval operators such as before, after and overlaps.   |
| AIT505.06 | Understand the temporal data model at the conceptual level.  |
| AIT505.07 | Describe some of the extensions to conventional query languages that have been proposed to support temporal query processing.  |
| AIT505.08 | Critically assess the strengths and weaknesses of Object databases with respect to Relational systems.   |
| AIT505.09 | Describe why Object databases appear to be such a good fit for a number of major growth areas in computing, such as Web-based and multimedia information systems.  |
| AIT505.10 | Describe the strategy being adopted by major database supplier Oracle to address the apparent threat of Object database systems, and critically compare this approach with a pure Object technology approach |
| AIT505.11 | Formulate, using relational calculus solutions to a broad range of query problems  |
| AIT505.12 | Identify a range of concepts, techniques and tools for creating and editing the interactive multimedia database  |
| AIT505.13 | Identify the current and future issues related to multimedia technology to store information   |
| AIT505.14 | Impart an overview of emerging data models like temporal, mobile and spatial databases   |
| AIT505.15 | Understand the commercial relational database system (Oracle) by writing SQL using the system.   |

### TUTORIAL QUESTION BANK

|                  | UNIT - I   |            |          |             |  |  |  |  |  |  |  |
|------------------|--|------------|----------|-------------|--|--|--|--|--|--|--|
| ACTIVE DATABASES |  |            |          |             |  |  |  |  |  |  |  |
|                  | Part - A (Short Answer Questions)  |            |          |             |  |  |  |  |  |  |  |
| S No             | QUESTIONS  | Blooms     | Course   | Course      |  |  |  |  |  |  |  |
|                  |  | Taxonomy   | Outcomes | Learning    |  |  |  |  |  |  |  |
|                  |  | Level      |          | Outcomes    |  |  |  |  |  |  |  |
|                  |  |            |          | (CLOs)      |  |  |  |  |  |  |  |
| 1                | Explain the active database and list of the advantages using active database?    | Remember   | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 2                | List the applications of active database and explain any one of the application? | Remember   | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 3                | Discuss about the Starburst and write the suitable syntax?                       | Understand | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 4                | Discuss about the Starburst and write the semantics of Starburst?                | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 5                | Which statement is used to create a trigger?                                     | Remember   | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 6                | Discuss about the Oracle and write the semantics of Oracle?                      | Understand | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 7                | What is abc in the following statement?  | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
|                  | CREATE TRIGGER abc () () ON def FOR EACH ROW ghi;                                |            |          |             |  |  |  |  |  |  |  |
| 8                | Discuss about the DB2 and write the semantics of DB2?                            | Understand | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 9                | Explain about the integrity management and with suitable examples?               | Remember   | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 10               | Discuss about the workflow management?   | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 11               | Explain about the triggers?  | Remember   | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 12               | Enlist the disadvantages of query.   | Remember   | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 13               | Discuss about Oracle and write the suitable syntax?                              | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 14               | Which statement is used to remove a trigger?                                     | Remember   | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 15               | Discuss about DB2 and write the suitable syntax?                                 | Understand | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 16               | List the Benefits of Active Technologies?  | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 17               | Write the steps of Rule Generation for Integrity Checking?                       | Remember   | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 18               | Write the advantages of Business Rules and Difficulties                          | Understand | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 19               | Explain the rule debugging and monitoring  | Remember   | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 20               | Explain about the rule modularization?   | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
|                  | Part - B (Long Answer Questions)   | 1          | 11       |             |  |  |  |  |  |  |  |
| 1                | Give the syntax for following statements and discuss briefly on:                 | Remember   | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
|                  | i) Starburst ii) Oracle iii) DB2   |            |          |             |  |  |  |  |  |  |  |
| 2                | Write the Semantics for following statements:                                    | Understand | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
|                  | i) Starburst ii) Oracla iii) DB2   |            |          |             |  |  |  |  |  |  |  |
| 3                | I) Starburst II) Oracle III) DB2   | Understand | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 3                | Discuss about the Starburst rule Definition? Write the query for the following   | Understand | CO 1     | AIT505.03   |  |  |  |  |  |  |  |
| 4                | statement "salary of employees is not larger than the salary of the manager of   | Understand | 01       | A11303.01   |  |  |  |  |  |  |  |
|                  | their department"?   |            |          |             |  |  |  |  |  |  |  |
| 5                | Write the query for the following statement "If the average solary of amployees  | Domombor   | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 5                | gets over 100, then reduces the salary of all employees by 10 %" using starburst | Kemeniber  | 01       | AI1303.02   |  |  |  |  |  |  |  |
|                  | rule?  |            |          |             |  |  |  |  |  |  |  |
| 6                | Discuss about the Rusiness Rules? Write the Case Study of Energy Management      | Understand | CO 1     | AIT505.01   |  |  |  |  |  |  |  |
| 0                | System using the business rules? While the Case Study of Energy Management       | Understand | 01       | A11505.01   |  |  |  |  |  |  |  |
| 7                | Evaluin the Design Principles for Active Databases? Give the suitable everyles   | Understand | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| /                | of using recursive rules?  | Understand |          | A11505.02   |  |  |  |  |  |  |  |
| 0                | Write the quary for the following statement "If every colory of everlapped       | Undorstond | CO 1     | A IT 505 01 |  |  |  |  |  |  |  |
| 0                | write the query for the following statement. If average salary of employees      | Understand | 01       | A11303.01   |  |  |  |  |  |  |  |
| 0                | Discuss shout Pusiness Pulse Adventages and Differentias with with her such      | Domanshar  | CO 1     | A IT 505 02 |  |  |  |  |  |  |  |
| 9                | of ease study?   | Kennember  | 01       | ATT505.02   |  |  |  |  |  |  |  |
| 10               | Write the syntax of the DP2 grantes trigger statement and explain the DP2        | Understand | CO 1     | AIT505.02   |  |  |  |  |  |  |  |
| 10               | white the syntax of the DB2 creates trigger statement and explain the DB2        | Understand |          | ATT 505.05  |  |  |  |  |  |  |  |

|    | statement   | processing        | procedure?               |            |               |                 |  |            |            |                 |
|----|-------------|-------------------|--------------------------|------------|---------------|-----------------|--|------------|------------|-----------------|
| 11 | Explain ab  | out the rul       | e modulariza             | tion and   | write the p   | rogram for or   | der processing                         | Remember   | CO 1       | AIT505.01       |
|    | database?   |                   |                          |            | 1             | C               | 1 0                                    |            |            |                 |
| 12 | Briefly des | scribed abo       | out rule debu            | gging and  | d monitorii   | ng of active da | atabase?                               | Remember   | CO 1       | AIT505.02       |
| 13 | Explain a   | bout the          | IDEA Met                 | Understand | CO 1          | AIT505.01       |  |            |            |                 |
|    | architectur | e of Tools'       | ?                        |            |               |                 |  |            |            |                 |
| 14 | Explain al  | oout the A        | Active-Datab             | Remember   | CO 1          | AIT505.02       |  |            |            |                 |
|    | Rules       |                   |                          |            |               |                 |  |            |            |                 |
| 15 | Briefly de  | scribed abo       | out Correctn             | ess of Ev  | valuation o   | f Interacting I | Rules and give                         | Understand | CO 1       | AIT505.03       |
|    | the examp   | le of Non-7       | Fermination <sup>4</sup> | 2          |               |                 |  |            |            |                 |
| 16 | Define act  | ive databa        | ises? Explai             | n the dif  | ferences b    | etween relation | onal prototype                         | Understand | CO 1       | AIT505.01       |
| 17 | system and  | two relati        | onal systems             | 3.         |               |                 |  | <b>D</b> 1 | CO 1       | A 177 5 0 5 0 0 |
| 17 | Explain in  | details th        | ie IDEA me               | thodolog   | gies with i   | ts purpose, ii  | ngredients and                         | Remember   | CO 1       | AIT505.02       |
| 10 | Discuss in  | dotoile obc       | esign tool st            | pporung    | the method    | uologies.       | aga gystam                             | Understand | CO 1       | AIT505.01       |
| 10 |             |                   | out various a            | ppileation |               |                 | ase system.                            | Understand | 001        | AI1303.01       |
| 19 | Explain the | e taxonom         | y of Active I            | Databases  | s in details. |                 |  | Understand | CO 1       | AIT505.02       |
| 20 | Explain th  | e differenc       | ces between              | relationa  | l prototyp    | e system and    | two relational                         | Remember   | CO 1       | AIT505.01       |
|    | systems.    |                   |                          |            |               |                 |  |            |            |                 |
|    |             |                   | Part                     | - C (Pro   | blem Solvi    | ng and Critic   | al Thinking Q                          | uestions)  | <i>e</i> - |                 |
| 1  | Write the s | syntax for        | finding supe             | rvisor "I  | 'he supervi   | sor of an emp   | oloyee must be                         | Understand | CO 1       | AIT505.01       |
|    | older than  | the employ        | ee" Using a              | trigger.   |               |                 |  |            |            |                 |
|    | Fname       | Lname             | Bdate                    | Sex        | Salary        | HireDate        |  |            |            |                 |
|    | John        | Smith             | 09-05-1955               | М          | 30000         | 01-01-1985      |  |            |            |                 |
|    | Franklin    | Wong              | 08-12-1945               | М          | 40000         | 01-01-1982      |  |            |            |                 |
|    | Alicia      | Zelaya            | 19-07-1958               | F          | 25000         | 01-01-1985      |  |            |            |                 |
|    | Jennifer    | Wallace           | 20-06-1931               | F          | 43000         | 01-01-1982      |  |            |            |                 |
|    | Ramesh      | Narayan           | 15-09-1952               | М          | 38000         | 01-01-1985      |  |            |            |                 |
|    | Joyce       | English           | 31-07-1962               | F          | 25000         | 01-01-1985      |  |            |            |                 |
|    | Ahmad       | Jabbar            | 29-03-1959               | М          | 25000         | 01-01-1985      |  |            |            |                 |
|    | James       | Borg              | 10-11-1927               | М          | 55000         | 01-01-1980      |  |            |            |                 |
| 2  | State the s | yntax for s       | atisfying the            | followin   | g statemen    | t "The locatio  | n of a project                         | Remember   | CO 1       | AIT505.02       |
|    | must be or  | e of the lo       | cations of its           | departm    | ent."         |                 |  |            |            |                 |
|    | Project T   | able:             |                          |            | DeptLoc       | ations Table    | :                                      |            |            |                 |
|    | PName       | PNumbe            | PLocatio D               | numbe      | Dnumb         | er Dlocation    |  |            |            |                 |
|    | ProductX    | 1                 | n r<br>Bellaire 5        |            | 1             | Houston         |  |            |            |                 |
|    | ProductY    | 2                 | Sugarland 5              |            | 5             | Bellaire        |  |            |            |                 |
|    | ProductZ    | 3                 | Houston 5                |            | 4             | Stafford        | ————                                   |            |            |                 |
|    | Computer    | 10                | Stafford 4               |            | 5             | Sugarland       | —————————————————————————————————————— |            |            |                 |
|    | Reo         | 20                | Houston 1                |            | 5             | Houston         | —————————————————————————————————————— |            |            |                 |
|    | New         | 30                | Stafford 4               |            |               | 1               |  |            |            |                 |
| 3  | Definition  | and use of        | triggers in C            | Dracle? W  | Vrite the Tr  | igger syntax i  | n Oracle?                              | Remember   | CO 1       | AIT505.03       |
| 4  | Definition  | and use of        | triggers in I            | DB2? Wr    | ite the Trig  | ger syntax in   | DB2?                                   | Understand | CO 1       | AIT505.01       |
| 5  | Given the   | relational s      | chema:                   |            |               |                 |  | Remember   | CO 1       | AIT505.02       |
|    | EMPLOY      | EE( <u>Name</u> , | Salary, Dep              | Num)       |               |                 |  |            |            |                 |
|    | DEPART      | MENT( <u>Der</u>  | <u>otNum</u> , Man       | agerNam    | e)            |                 |  |            |            |                 |
|    | Define the  | following         | active rules             | in Oracle  | and DB2.      |                 |  |            |            |                 |
|    | 1. A rul    | e that dele       | tes all the e            | mployees   | s belonging   | g to a departn  | nent when that                         |            |            |                 |
|    | depar       | rtment is de      | eleted.                  | -          |               | -               |  |            |            |                 |

|    | 2. A rule that reacts to the deletion of the employee who is manager in a         |            |        |            |
|----|---|------------|--------|------------|
|    | department by deleting that department and all its employees.                     |            |        |            |
|    | 3. A rule that, each time that salary of an employee becomes higher than that     |            |        |            |
|    | of his or her manager, makes that salary equal to that of the manager.            |            |        |            |
| 6  | Given the relational schema:  | Understand | CO 1   | AIT505.01  |
|    | STUDENT(Name, Subject, Supervisor)  |            |        |            |
|    | PROFESSOR(Name, Subject)  |            |        |            |
|    | COURSE(Title, Professor)  |            |        |            |
|    | EXAM(StudentName, CourseTitle)  |            |        |            |
|    | Describe the triggers that manager the following integrity constraints (business  |            |        |            |
|    | 1 Each student must work in the same area as his or her supervisor                |            |        |            |
|    | 2. Each student must have taken at least three courses in the subject of his or   |            |        |            |
|    | 2. Each student must have taken at least three courses in the subject of his of   |            |        |            |
|    | 3 Each student must have taken the exam for the course taught by his or her       |            |        |            |
|    | supervisor.   |            |        |            |
| 7  | Given the relational schema:  | Understand | CO 1   | AIT505.02  |
|    | EMPLOYEE( <u>Name</u> , Salary, DeptNum)  |            |        |            |
|    | DEPARTMENT(DeptNum, ManagerName)  |            |        |            |
|    |   |            |        |            |
|    | Define the following active rules in Oracle and DB2.                              |            |        |            |
|    | 1. A rule that, each time the salaries are modified, verifies that there are no   |            |        |            |
|    | departments in which the average salary increases more that three                 |            |        |            |
|    | percents and in this case cancels the modification.                               |            | ~~     |            |
| 8  | Given the relational schema:  | Remember   | CO 1   | AIT505.03  |
|    | EMPLOYEE(Name, Salary, DeptNum)   |            |        |            |
|    | DEPARTMENT(DeptNum, ManagerName)  |            |        |            |
|    | Define the following active rules in Oracle and DB2.                              |            |        |            |
|    | 1. A rule that, each time that the salaries are modified, verifies                |            |        |            |
|    | their average and if it is higher than 50 thousand, deletes all                   |            |        |            |
|    | the employees whose salaries have been modified and are                           |            |        |            |
|    | higher than 80 thousand.  |            |        |            |
| 9  | A family tree represents the structure of a family. Show how the information of a | Understand | CO 1   | AIT505.01  |
|    | family tree can be represented by means of a relational database, possibly        |            |        |            |
|    | starting with a simplified structure, in which only the male line or only the     |            |        |            |
|    | female line is represented (that is, only the offspring of the male or the female |            |        |            |
|    | members of the family are represented ).  |            |        |            |
| 10 | Define a database schema that organizes the information necessary to generate     | Remember   | CO 1   | AIT505.02  |
|    | the radio programmes page of a daily newspaper, with station, times and           |            |        |            |
|    | programme title; besides the name, include transmission frequency and the         |            |        |            |
|    | location of the radio station.  |            |        |            |
|    | UNIT - II   |            |        |            |
|    | TEMPORIAL AND OBJECT DATABAS  | ES         |        |            |
|    | Part – A (Short Answer Questions)   |            |        |            |
| 1  | Discuss about the Temporal Database?  | Understand | CO 2   | AIT505.04  |
| 2  | Explain about the Time Structure and draw the Structure?                          | Remember   | CO 2   | AIT505.05  |
| 3  | Discuss the Time Density?   | Understand | CO 2   | AIT505.06  |
| 4  | Briefly discuss about the TSQL2 Time ontology?                                    | Remember   | CO 2   | AIT505.04  |
| 5  | Explain the associating facts with time in temporal database?                     | Remember   | CO 2   | AIT505.05  |
| 6  | Create table and Write the query for "What is Bob's Salary?                       | Understand | CO 2   | AIT505.06  |
| 7  | Explain about temporal join with suitable example?                                | Remember   | CO 2   | AIT505.04  |
| 0  | List out the Time Data Types and explain?   | Remember   | $CO_2$ | AIT 505 05 |

| 9        | Explain the Temporal query languages?  | Understand | CO 2 | AIT505.06   |
|----------|--|------------|------|-------------|
| 10       | Briefly described about the time ontology? And list out the data types?  | Remember   | CO 2 | AIT505.04   |
| 11       | Explain the data model in temporal database?   | Understand | CO 2 | AIT505.05   |
| 12       | Discuss the temporal database constructs?  | Understand | CO 2 | AIT505.06   |
| 13       | Discuss about the aggregates function with suitable example?   | Remember   | CO 2 | AIT505.04   |
| 14       | Briefly described about constructs and data model?   | Understand | CO 2 | AIT505.05   |
| 15       | Discuss about the time ontology in temporal database?  | Understand | CO 2 | AIT505.06   |
| 16       | Explain the time facts?  | Understand | CO 2 | AIT505.04   |
| 17       | Create a employee table and find the employee date of birth?   | Remember   | CO 2 | AIT505.05   |
| 18       | Discuss about temporal data base and explain the time domain?  | Understand | CO 2 | AIT505.06   |
| 19       | Explain about the Time Structure and Time Density?   | Remember   | CO 2 | AIT505.04   |
| 20       | Create a employee table and find the employee current salary?  | Remember   | CO 2 | AIT505.05   |
|          | Part - B (Long Answer Questions)   |            |      |             |
| 1        | Summarize the phrase 'The complexities of time in Temporal databases', with  | Remember   | CO 2 | AIT505.04   |
| 2        | Suitable examples.   | Understand | CO 2 | A IT 505 05 |
| 2        | biscuss various types of commands which can be used for manipulating text in<br>the T SOL code (i.e. for exemple. Perface a text string. Obtain a portion of the | Understand | 02   | ATT505.05   |
|          | taxt etc.)   |            |      |             |
| 3        | Briefly explain about time domain and associating facts with time of temporal  | Understand | CO 2 | AIT505.06   |
| 5        | database with example?   | Onderstand | 002  | AI1505.00   |
| 4        | Explain about the temporal query language in temporal database with suitable   | Understand | CO 2 | AIT505.04   |
| _        | example?   |            | ~~ • |             |
| 5        | List out the temporal supports and transact-SQL supports? Explain?   | Remember   | CO 2 | AIT505.05   |
| 6        | What is Time stamped? Give the example suitable example for time stamped?  | Understand | CO 2 | AIT505.05   |
| 7        | CREATE TABLE Lab Test (Name, Physician, TestID) and write the program for  | Remember   | CO 2 | AIT505.06   |
| -        | Patients who were the sole receivers of all tests ordered by a physician?  |            |      |             |
| 8        | Explain the different Kinds of Tables and write the suitable syntax?   | Remember   | CO 2 | AIT505.04   |
| 9        | Discuss the language constructs in Transact-SQL with suitable example?   | Understand | CO 2 | AIT505.06   |
| 10       | Summarize the Time ontology of temporal database and explain the data model  | Remember   | CO 2 | AI1505.04   |
| 11       | With suitable example?   | Damaanhan  | CO 2 | A IT 505 04 |
| 11       | operators with example   | Remember   | 02   | AI1505.04   |
| 12       | Sketch the System Architecture of conventional DBMS and discus the changes   | Understand | CO 2 | AIT505.05   |
|          | need to be done for adding Temporal Support.   |            |      |             |
| 13       | What are temporal database? How they differ from conventional databases?   | Remember   | CO 2 | AIT505.05   |
| 14       | Write note on Time Ontology and Data Model of TSQL2  | Remember   | CO 2 | AIT505.06   |
| 15       | Discuss the time density and explain about TSQL2 data model with example.  | Understand | CO 2 | AIT505.04   |
| 16       | Explain the time domain and time data types of temporal database in details.   | Remember   | CO 2 | AIT505.05   |
| 17       | Write note on Time Data Types? Explain the Associating Facts with Time?  | Understand | CO 2 | AIT505.05   |
| 18       | List out the Temporal Support Compiler and explain briefly.  | Remember   | CO 2 | AIT505.06   |
| 19       | Briefly discuss about Data Dictionary and Data Files.  | Remember   | CO 2 | AIT505.04   |
| 20       | Explain the following temporal support compilers   | Understand | CO 2 | AIT505.06   |
|          | i. Run-Time Evaluator  |            |      |             |
|          | 11. DDL Compiler   |            |      |             |
|          | Part - C (Problem Solving and Critical Thinking O  | uestions)  |      |             |
| 1        | Create a table using the attributes (name, address, city, and region) of employees   | Remember   | CO 2 | AIT505.04   |
| <u> </u> | living in INDIA. Write a Query to find the list of persons living in INDIA.  |            |      |             |
| 2        | Nam Create a tables "employee" and "Employee Lifecycle"? Give the name of  | Understand | CO 2 | AIT505.05   |
|          | current employees who do not work currently in any department?   |            |      |             |
| 3        | Create a tables "employee", "Supervision" and "WorksOn"? Give the name of  | Understand | CO 2 | AIT505.06   |
|          | supervisors who had work on a project at some time   |            |      |             |

| 4 | Write the syn   | ntax for "V  | Who has been   | rug for more than a total of six | Understand                         | CO 2       | AIT505.04 |           |
|---|-----------------|--------------|----------------|----------------------------------|------------------------------------|------------|-----------|-----------|
|   | months"? Usi    | ng followin  | g Scenario:    |                                  |                                    |            |           |           |
|   | Patie           | nt records   | include info   |                                  |                                    |            |           |           |
|   | patie           | nt.          |                |                                  |                                    |            |           |           |
|   | • The           | valid time   | specifies th   | (s) during which the drug was    |                                    |            |           |           |
|   | prese           | ribed.       |                |                                  |                                    |            |           |           |
|   | • The           | valid time   | has a granula  | rity of da                       | y (transaction time granularity is |            |           |           |
|   | syste           | m defined)   | :              |                                  |                                    |            |           |           |
| 5 | Explain about   | Valid Tin    | ne Projection  | and writ                         | e the syntax of "What drugs was    | Remember   | CO 2      | AIT505.04 |
|   | Melanie presc   | ribed durin  | g 1994"using   | , the patie                      | nt record?                         |            |           |           |
| 6 | Create a tabl   | e of "emp    | oloyee" and    | Write the                        | syntax to "Find the employee's     | Understand | CO 2      | AIT505.05 |
|   | salary at a giv | en time: e.g | g. the current | one:"                            |                                    |            |           |           |
| 7 | Give the name   | e of the mai | nagers living  | currently                        | in Houston.                        | Understand | CO 2      | AIT505.06 |
|   |                 |              |                |                                  |                                    |            |           |           |
|   | Employee:       |              |                |                                  |                                    |            |           |           |
|   | SSN             | FNAME        | LNA            |                                  |                                    |            |           |           |
|   | 10045570        | <b>X</b> 1   | ME             |                                  |                                    |            |           |           |
|   | 12345678        | John         | Smith          |                                  |                                    |            |           |           |
|   | 9               | Tanana       | Desc           |                                  |                                    |            |           |           |
|   | 88800555        | James        | Borg           |                                  |                                    |            |           |           |
|   | J<br>08765422   | Aliaia       | Zalav          |                                  |                                    |            |           |           |
|   | 98703432        | Alicia       | Zelay          |                                  |                                    |            |           |           |
|   |                 |              | a              |                                  |                                    |            |           |           |
|   | Department:     |              |                |                                  |                                    |            |           |           |
|   | DNumber         | MarSSN       |                |                                  |                                    |            |           |           |
|   |                 | 88866555     | 5              |                                  |                                    |            |           |           |
|   | 1               | 98765/32     | 1              |                                  |                                    |            |           |           |
|   | Employee Ac     | dress.       | 1              |                                  |                                    |            |           |           |
|   | Linployee In    | ui 055.      |                |                                  |                                    |            |           |           |
|   | SSN             | CITY         |                |                                  |                                    |            |           |           |
|   | 123456789       | Houston      |                |                                  |                                    |            |           |           |
|   | 888665555       | Houston      |                |                                  |                                    |            |           |           |
|   | 987654321       | Bellaire     |                |                                  |                                    |            |           |           |
|   |                 |              |                |                                  |                                    |            |           |           |
| 8 | Write the sql   | query "At    | any point in   | time an e                        | employee cannot work more than     | Remember   | CO 2      | AIT505.04 |
|   | once in a proj  | ect.In other | r terms (SSN   | ,PNumbe                          | r) is a sequenced primary key for  |            |           |           |
|   | WorksOn"        |              |                |                                  |                                    |            |           |           |
|   |                 |              |                |                                  |                                    |            |           |           |
|   |                 |              |                |                                  |                                    |            |           |           |
|   | WorksOn:        |              |                | 1                                |                                    |            |           |           |
|   | SSN             | 1            | PNUMBER        | HOU                              |                                    |            |           |           |
|   |                 |              |                | RES                              |                                    |            |           |           |
|   | 123456789       |              |                |                                  |                                    |            |           |           |
|   | 123456789       | 2            |                |                                  |                                    |            |           |           |
|   | 999887777       |              |                | 10                               |                                    |            |           |           |
|   | 999887777       |              | 50             | 30                               |                                    |            |           |           |
|   | 666884444       |              | 5              | 20                               |                                    |            |           |           |
|   | 453453453       | ]            | l              | 20                               | ]                                  |            |           |           |
|   | ·               |              | '              |                                  |                                    | TT.J 4     |           |           |
| 9 | write the sql   | query for f  | inding the na  | me(s) of                         | the employee(s) who had the less   | Understand | CO 2      | ATT505.05 |
|   | salary on 1/    | 1/2010.      |                |                                  |                                    |            |           |           |

|    | Employee      | e Table:     | :           |                    |                | Salary T       | able:        |           |            |          |             |
|----|---------------|--------------|-------------|--------------------|----------------|----------------|--------------|-----------|------------|----------|-------------|
|    |               |              |             |                    |                | ·              |              |           |            |          |             |
|    | SSN           | FName        | LNam<br>e   | SSN                | Salar<br>y     | From Date      | To Date      |           |            |          |             |
|    | 12345678<br>9 | John         | Smith       | 12345678<br>9      | 3000           | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 33344555      | Frankli<br>n | Wong        | 33344555<br>5      | 4000<br>0      | 01-01-1982     | 01-01-1983   |           |            |          |             |
|    | 99988777<br>7 | Alicia       | Zelaya      | 33344555<br>5      | 6<br>4500<br>0 | 01-01-1983     | 01-01-2079   |           |            |          |             |
|    | 98765432      | Jennife<br>r | Wallac      | 99988777<br>7      | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 66688444<br>4 | Ram          | Naraya      | 98765432           | 4300<br>0      | 01-01-1982     | 01-01-2079   |           |            |          |             |
|    | 45345345      | Joyce        | Englis<br>h | 66688444<br>4      | 3800<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 98798798<br>7 | Ahmad        | Jabbar      | 45345345<br>3      | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 88866555<br>5 | James        | Borg        | -<br>98798798<br>7 | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
| 10 | Write the     | sql qu       | ery for     | finding the        | name(          | s) of the em   | ployee(s) wh | o had the | Remember   | CO 2     | AIT505.06   |
|    | highest sa    | lary on      | 1/1/20      | 02.                |                |                |              |           |            |          |             |
|    | Employee      | e Table:     | T Nam       | CON                | Calar          | Salary T       | able:        |           |            |          |             |
|    | 22IN          | FNam         |             | 29IN               | Salar          | • From Date    | To Date      |           |            |          |             |
|    | 12345678      | e<br>Iohn    | e<br>Smith  | 12345678           | y<br>3000      |                |              |           |            |          |             |
|    | 9             | JOIIII       | Shiitii     | 9                  | 0              | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 33344555<br>5 | Frankli<br>n | Wong        | 33344555<br>5      | 64000<br>0     | 01-01-1982     | 01-01-1983   |           |            |          |             |
|    | 99988777<br>7 | Alicia       | Zelaya      | 33344555<br>5      | 4500<br>0      | 01-01-1983     | 01-01-2079   |           |            |          |             |
|    | 98765432<br>1 | Jennife<br>r | Wallac      | 99988777<br>7      | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 66688444<br>4 | Ram          | Naraya      | 98765432<br>1      | 24300<br>0     | 01-01-1982     | 01-01-2079   |           |            |          |             |
|    | 45345345<br>3 | Joyce        | Englis<br>h | 66688444<br>4      | 3800<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 98798798<br>7 | Ahmad        | Jabbar      | 45345345<br>3      | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    | 88866555<br>5 | James        | Borg        | 98798798<br>7      | 2500<br>0      | 01-01-1985     | 01-01-2079   |           |            |          |             |
|    |               |              |             | 88866555<br>5      | 5500<br>0      | 01-01-1980     | 01-01-1981   |           |            |          |             |
|    |               |              |             | 88866555<br>5      | 5800<br>0      | 01-01-1981     | 01-01-2079   |           |            |          |             |
|    |               |              |             |                    |                |                |              |           |            |          |             |
|    |               |              |             |                    | MDI            | UN<br>EX OLIED |              |           |            |          |             |
|    |               |              |             | CO                 |                | EX QUERI       | ES AND R     | LASUNI    | NG         |          |             |
| 1  | Evoluin al    | out th-      | Deta1a-     | and with an        | Pa:            | rt - A (Short  | Answer Que   | estions)  | Understand | $CO^{2}$ | A IT 505 07 |
| 2  | Briefly ov    | nlain ab     | Datalog     | Tuple Relation     | naule          | alculus (TRC   | )9           |           | Remember   | CO 3     | AIT505.07   |
| 3  | Write the     | svntax (     | of first of | rder logic         |                |                | <i>)</i> •   |           | Understand | CO 3     | AIT505.08   |

| 4  | Discuss about the Relational Model vs Datalog?   | Remember        | CO 3  | AIT505.07   |
|----|--|-----------------|-------|-------------|
| 5  | Explain the operators and list out the Relational Operators?   | Understand      | CO 3  | AIT505.08   |
| 6  | Discuss about Minimal Model and Least Model?   | Remember        | CO 3  | AIT505.09   |
| 7  | Briefly discuss about the Fix Point Semantics?   | Understand      | CO 3  | AIT505.07   |
| 8  | Discuss about Relational Algebra (RA) and explain the set operators?                                   | Remember        | CO 3  | AIT505.08   |
| 9  | Explain the Least Fix Point of $T_p$ and power of $T_p$ ?  | Understand      | CO 3  | AIT505.09   |
| 10 | Explain the Rule-Rewriting Methods.  |                 |       |             |
|    |  |                 |       |             |
| 11 | Discuss about the Positive program?  | Understand      | CO 3  | AIT505.07   |
| 12 | Briefly described about the Rule rewriting methods?  | Remember        | CO 3  | AIT505.09   |
| 13 | Explain the compilation and optimization?  | Remember        | CO 3  | AIT505.07   |
| 14 | Exemplify the Recursive queries in SOL?  | Understand      | CO 3  | AIT505.08   |
| 15 | Discuss about the Non-recursive programs?  | Remember        | CO 3  | AIT505.09   |
| 16 | Explain the Left-Linear and Right-Linear Recursion?  | Remember        | CO 3  | AIT505.07   |
| 17 | Discuss about the Magic Sets Method and give one example?  | Understand      | CO 3  | AIT505.07   |
| 18 | Examplify the Pastricting search via magic set?  | Remember        |       | AIT505.08   |
| 10 | Briefly described about the Counting Method?   | Remember        | CO 3  | AIT505.08   |
| 20 | Discuss shout the Supplementary Maria Sata   | Kemeniber       | 0.0.3 | AI1303.07   |
| 20 | Discuss about the Supplementary Magic Sets   |                 |       |             |
| 1  | <b>Fart – B</b> (Long Answer Questions)  | Understand      | CO 2  | AIT505.07   |
| 1  | the Syntax of First-Order Logic and Datalog.   | Understand      | 03    | A11505.07   |
| 2  | Explain about the relational database with suitable example with help of student and courses?          | Remember        | CO 3  | AIT505.08   |
| 3  | Discuss about Minimal Model and Least Model with suitable example?                                     | Understand      | CO 3  | AIT 505 09  |
| 4  | Explain about the Negation in Datalog and with suitable example?                                       | Remember        | CO 3  | AIT505.07   |
| 5  | Discuss about Domain Relational Calculus and write the syntax differences in                           | Understand      | CO 3  | AIT505.07   |
| 5  | DRC?   | Onderstand      | 005   | /11/505.00  |
| 6  | Explain the algorithm for mapping a safe non-recursive datalog program P into                          | Understand      | CO 3  | AIT505.07   |
| Ŭ  | RA.  | Chidorbland     | 005   | 111000107   |
| 7  | Explain the Relational Calculi and its flavors in detail.  | Remember        | CO 3  | AIT505.08   |
| 8  | State the Syntax and Semantics of Datalog Languages and discuss in detail about                        | Remember        | CO 3  | AIT505.09   |
|    | the Syntax of First-Order Logic and Datalog  |                 |       |             |
| 9  | Define Relational Calculus? Explain about types of Relational Calculus with                            | Understand      | CO 3  | AIT505.07   |
|    | their syntax's and give for example.   | Chiderbland     | 005   | 111000.07   |
| 10 | List out the various operators in Relational Algebra? Explain them briefly.                            | Understand      | CO 3  | AIT505.07   |
| 11 | Cive the meaning of Dule Dormiting Mathed Illustrate the Left Line of                                  | Domam's         | CO 2  |             |
| 11 | Give the meaning of Rule-Kewfiling Method. Inustrate the Left-Linear and                               | Remember        | 0.05  | ATT505.08   |
| 10 | Weite the Alexithm Diadice Dessing analysis for Desurging Dradiester?                                  | I In denote a d | CO 2  | A IT 505 00 |
| 12 | while the Algorithm Binding Passing analysis for Recursive Predicates?                                 | Understand      | CO 3  | AIT505.09   |
| 13 | Compilation and Optimization?  | Remember        | 03    | A11505.07   |
| 14 | Write the Algorithm Construction of the Rule-Goal graph rgg(P) for non-                                | Understand      | CO 3  | AIT505.08   |
|    | recursive program P?   |                 |       |             |
| 15 | Exemplify the Magic set and Counting Method using the Rule rewriting methods? Give the one example?    | Understand      | CO 3  | AIT505.09   |
| 16 | Write a short note on Datalog with suitable example  | Understand      | CO 3  | AIT505.07   |
| 17 | Explain about Counting Method Give advantages and disadvantages of the                                 | Remember        | CO 3  | ΔΙΤ505.07   |
| 1/ | technique?   | Kentenillei     | 005   | AT 303.00   |
| 18 | Discuss about Tuple Relational Calculus and Domain Relational Calculus with                            | Understand      | CO 3  | AIT505.09   |
| 10 | sunaole example.   | TT. J           | CO 2  |             |
| 19 | Explain about the Magic Sets Method? Discuss about the Supplementary Magic Sets with suitable example. | Understand      | 003   | ATT505.07   |

| 20  | Explain t  | he Recursiv  | ve Queries   | s in SQL3   | Remember   | CO 3           | AIT505.07  |            |            |          |             |  |
|-----|--|--------------|--------------|-------------|------------|----------------|------------|------------|------------|----------|-------------|--|
|     | Part – C (Problem Solving and Critical Thinking) |              |              |             |            |                |            |            |            |          |             |  |
| 1   | Write a I  | Datalog prog | gram to con  | r a CS      | Understand | CO 3           | AIT505.07  |            |            |          |             |  |
|     | degree w   | here an eac  | h CS senio   |             |            |                |            |            |            |          |             |  |
|     |  | Student      |              |             |            |                |            |            |            |          |             |  |
|     | Name   | Major        | Year         |             | -          | Nama (         |            | Grade      |            |          |             |  |
|     | Joe  | CS           | Senior       |             | -          |                |            | 2.7        |            |          |             |  |
|     | Jones  | CS           | Junior       |             | _          | Joe (          | CS125      | 2.7        |            |          |             |  |
|     | Black  | EE           | Junior       |             | _          | Jones (        | 20142      | 3.0        |            |          |             |  |
|     | L  |              |              |             | -          | Dial (         | 20145      | 3.3        |            |          |             |  |
|     |  |              |              |             |            | Black          | _5101      | 2.7        |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |
| 2   | Find the   | name of ju   | unior-level  | students    | <b></b>    | T 1            |            | who        | Remember   | CO 3     | AIT505.08   |  |
|     | have take  | en both cs10 | 01 and cs14  | 13          |            | 1 OOK          |            | _          |            |          |             |  |
|     |  | Student      |              |             | Name       | Course         | Grade      | _          |            |          |             |  |
|     | Name   | Maior        | Year         |             | Joe        | CS123          | 2.7        | _          |            |          |             |  |
|     | Joe  | CS           | Senior       |             | Jones      | CS101          | 3.0        | _          |            |          |             |  |
|     | Iones  | CS           | Junior       |             | Jones      | CS143          | 3.3        |            |            |          |             |  |
|     | Black  | FF           | Junior       |             | Black      | CS143          | 3.3        |            |            |          |             |  |
|     | DIACK  |              | Juinoi       |             | Black      | CS101          | 2.7        |            |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |
| 3   | Write the  | auery for    | "Junior les  | val Student | te who di  | id not take    | course os  | 1/3"using  | Understand | CO 3     | AIT505.00   |  |
| 5   | Nogation   | 2 query 101  | Junioi-le    | er Studen   | is who u   | iu not take    | course es  | 145 using  | Understand | 05       | AI1505.09   |  |
|     | Negation   | (<br>Ctudont |              |             |            |                |            |            |            |          |             |  |
|     | Nama   | Maior        | Vaar         |             |            | Tool           | K          |            |            |          |             |  |
|     | Iname  | Major        | rear         |             | Nan        | ne Course      | e Grad     | le         |            |          |             |  |
|     | Joe  |              | Semor        |             | Joe        | CS123          | 3 2.7      |            |            |          |             |  |
|     | Jones  |              | Junior       |             | Jone       | es CS101       | 3.0        |            |            |          |             |  |
|     | Власк  | EE           | Junior       |             | Jone       | es CS143       | 3 3.3      |            |            |          |             |  |
|     |  |              |              |             | Blac       | ck CS143       | 3 3.3      |            |            |          |             |  |
|     |  |              |              |             | Blac       | ck CS101       | 2.7        |            |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |
| - 1 | a .  | . 1.1 . C    | . 1 . 01     |             | *7         | <b>T</b> 1 ()) |            | <u> </u>   |            | <u> </u> | 100000      |  |
| 4   | Create a   | tables of s  | student (Na  | ime, Majo   | r, Year),  | Took (Nar      | ne, Cours  | se, Grade) | Remember   | CO 3     | AI1505.07   |  |
|     | and write  | e the query  | y for "Find  | the senic   | or studen  | ts who are     | NOT m      | issing any |            |          |             |  |
| _   | requirem   | ent using    | Double Ne    | gation?     |            |                |            |            | XX 1 . 1   | <u> </u> |             |  |
| 2   | Given the  | e relations: | 1            |             |            |                |            |            | Understand | CO 3     | AI1505.08   |  |
|     | employee   | e(name,sala  | (ry,deptno)  | 11 \        |            |                |            |            |            |          |             |  |
|     | departme   | nt (deptno,  | deptname,    | address)    |            |                | 1          | 1 1 1      |            |          |             |  |
|     | Explain v  | which quer   | ry cannot    | be express  | sed using  | g the basic    | relation   | al algebra |            |          |             |  |
|     | operation  | IS ?         |              |             |            |                |            |            |            |          |             |  |
| 0.4 | E 1 ' '  | -1           |              | 1 1 1       |            | 1              | 12 . 1 1 . |            | TT. 1 . 1  | <u> </u> | A ITICOC OO |  |
| 06  | Explain h  | now the ma   | igic sets an | a related n | nethods a  | tre also app   | incable to | programs   | Understand | 03       | A11505.08   |  |
|     | that have  | e the bindi  | ing passin   | g property  | , but no   | t the uniqu    | ue bindin  | ig passing |            |          |             |  |
|     | property.  | Apply the    | magic sets   | method to   | the follo  | wing examp     | pie:       |            |            |          |             |  |
|     | 9(   | XX71         |              |             |            |                |            |            |            |          |             |  |
|     | ?sg(marc   | ; who).      |              |             |            |                |            |            |            |          |             |  |
|     | sg(X; Y)   | < pare       | nt(XP; X);   | sg(YP; XP   | ); parent  | (YP; Y).       |            |            |            |          |             |  |
|     | sg(A.A)  |              |              |             |            |                |            |            |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |
|     |  |              |              |             |            |                |            |            |            |          |             |  |

| 07  | Write the Program on Recursive View in SQL using following Table.  |  |   |   |   |   |  |  | Understand       | CO 3  | AIT505.09  |  |
|---|--|--|---|---|---|---|--|--|------------------|---|--|--|
|   | Part_Cost  |  |   |   |   | Assembly  |  |  |                  |   |  |  |
|   | BASIC-   | SUPPLI   | COS   | TIM   | -   | PAR   | SUBPA  | QTY  |                  |   |  |  |
|   | PART   | ER   | Т   | Е   |   | Т   | RT   |  |                  |   |  |  |
|   | Top_tube   | Cinelli  | 20  | 14  | -   | Bike  | frame  | 1  |                  |   |  |  |
|   | Top_tube   | columbu  | 15  | 6   | -   | Bike  | wheel  | 2  |                  |   |  |  |
|   |  | s  |   |   |   |   |  |  |                  |   |  |  |
|   | Down_tub   | columbu  | 10  | 6   | -   | frame   | Top_tub  | 1  |                  |   |  |  |
|   | e  | S  |   |   |   |   | e  |  |                  |   |  |  |
|   | Head_tub   | Cinelli  | 20  | 14  | -   | frame   | Down_t   | 1  |                  |   |  |  |
|   | e  |  |   |   |   |   | ube  |  |                  |   |  |  |
|   | fork   | Cinelli  | 40  | 14  | Ī   | frame   | fork   | 1  |                  |   |  |  |
|   | Hub  | suntour  | 10  | 15  | Ī   | wheel   | Spoke  | 36   |                  |   |  |  |
| 08  | Create a tal   | oles of Par  | t_Cost  | (BASIC  | C-P/  | ART, SU   | UPPLIER,   | COST,  | TIME),           | Understand  | CO 3   | AIT505.07  |
|   | Assembly (P  | ART, SUBI  | PART,   | QTY) at   | nd  | write the   | e query for  | find t   | the parts        |   |  |  |
|   | using 'top_tul   | be'" using re  | cursive   | queries?  |   |   |  |  |                  |   |  |  |
| 09  | Create a tal   | oles of Par  | t_Cost  | (BASIC  | C-P/  | ART, SU   | JPPLIER,   | COST,  | TIME),           | Understand  | CO 3   | AIT505.08  |
|   | Assembly (P.   | ART, SUBP  | ART, Q  | TY) and   | l wı  | rite the q  | uery for "N  | <i>l</i> ateriali  | zation of        |   |  |  |
|   | the view of re   | ecursive view  | v?  |   |   |   |  |  |                  |   |  |  |
| 10  | Based on data  | alog, the foll   | owing s   | chema is  | s gi  | ven :   |  |  |                  |   |  |  |
|   | Purchase(pid   | , product, pr  | ice, quai   | ntity)  |   |   |  |  |                  |   |  |  |
|   | Product(pnan   | ne, manufact   | turer)  |   |   |   |  |  |                  |   |  |  |
|   | I. Find  | l all products   | s under 9   | 9.99  |   |   |  |  |                  |   |  |  |
|   | II. Find   | l all manufac  | cturers th  | nat manu  | ıfac  | ture som  | e products   | under 9.   | .99              |   |  |  |
|   | III. Find  | l manufactur   | ers that  | manufac   | cture   | e produc  | ts both $< 9$ .  | 99 and >   | > 999.99         |   |  |  |
|   | UNIT - IV  |  |   |   |   |   |  |  |                  |   |  |  |
|   |  |  |   |   |   |   | UN11 - 1   | /  |                  |   |  |  |
|   |  |  | <b>SPA</b>  | TIAL, '   | TE  | XT AN   | D MULT   |  | A DATA           | BASES   |  |  |
|   |  |  | SPA'  | TIAL, '   | TE<br>Par   | XT AN   | D MULT   | MEDI<br>er Ques  | A DATA<br>tions) | ABASES  |  |  |
| 1   | Explain abou   | t Traditional  | SPA'  | TIAL, '<br>]<br>ng Metho  | TE<br>Par   | <b>XT AN</b><br><b>t - A (Sl</b><br>?   | D MULT   | IMEDI<br>er Ques   | A DATA<br>tions) | <b>BASES</b><br>Understand  | CO 4   | AIT505.10  |
| 1<br>2  | Explain abou<br>Briefly descr  | t Traditional  | SPA'<br>Indexir   | TIAL, '<br>g Metho<br>ey and g  | TE<br>Par<br>ods <sup>2</sup><br>give   | XT AN<br>t – A (SI<br>me one  | D MULTI<br>hort Answe  | IMEDI<br>er Ques   | A DATA<br>tions) | <b>NBASES</b><br>Understand<br>Understand   | CO 4<br>CO 4   | AIT505.10<br>AIT505.11   |
| 1<br>2<br>3   | Explain abou<br>Briefly descr<br>Discuss abou  | t Traditional<br>ibed the secc<br>t Inverted Fi  | SPA'<br>Indexir<br>ondary k<br>les and  | TIAL, '<br>g Metho<br>ey and g<br>Grid Filo   | <b>TE</b><br>Par<br>ods?<br>give<br>e?  | $\frac{\mathbf{XT} \mathbf{AN}}{\mathbf{t} - \mathbf{A} (\mathbf{SI})}$   | D MULTI<br>hort Answe  | MEDI<br>er Ques  | A DATA<br>tions) | Understand<br>Understand<br>Remember  | CO 4<br>CO 4<br>CO 4   | AIT505.10<br>AIT505.11<br>AIT505.10  |
| 1<br>2<br>3<br>4  | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I   | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Ilustrate the   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr   | TIAL, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?   | TE<br>Par<br>ods <sup>2</sup><br>give<br>e?   | $\frac{\mathbf{XT} \ \mathbf{AN}}{\mathbf{T} \ \mathbf{AN}}$  | D MULTI<br>hort Answe  | IMEDI<br>er Ques   | A DATA<br>tions) | Understand<br>Understand<br>Remember<br>Understand  | CO 4<br>CO 4<br>CO 4<br>CO 4                                 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12   |
| $ \begin{array}{c} 1\\ 2\\ 3\\ 4\\ 5 \end{array} $  | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr  | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Ilustrate the<br>ibe about Sp   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Ac   | rial, '<br>ag Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Me  | TE<br>Par<br>ods?<br>give<br>e?<br>thoo   | XT AN<br>t – A (S)<br>me one<br>ds (SAM   | born - Tropic of the second solution of the s   | MEDI<br>er Ques  | A DATA<br>tions) | Understand<br>Understand<br>Remember<br>Understand<br>Understand  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4                         | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11  |
| 1<br>2<br>3<br>4<br>5<br>6  | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S  | t Traditional<br>ibed the secc<br>t Inverted Fi<br>Ilustrate the<br>ibe about Sp<br>patial Acces   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tro<br>atial Act   | rial, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Meto<br>ods (SAM  | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)   | XT AN<br>t - A (Sl<br>?<br>me one<br>ds (SAM<br>and expl  | born - Tropic of the second se   | er Ques  | A DATA<br>tions) | ABASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Understand<br>Remember  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4         | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10   |
| 1<br>2<br>3<br>4<br>5<br>6<br>7   | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T  | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Ilustrate the<br>ibe about Sp<br>patial Acces<br>ext Retrieva   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Ac<br>s Metho<br>il and ex   | TIAL, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Me<br>ods (SAM<br>plain Sig   | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)<br>gnat   | XT AN<br>t – A (Sl<br>?<br>me one<br>ds (SAM<br>and expl<br>ture Files  | born - Trong born  | MEDI<br>er Ques  | A DATA<br>tions) | ABASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Understand<br>Remember<br>Remember  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.11  |
| $     \begin{array}{c}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       8       \end{array} $  | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T<br>Discus about  | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Ilustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Po   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tro<br>atial Acc<br>s Metho<br>il and ex<br>oints and  | TIAL, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Me<br>ods (SAM<br>plain Sig<br>I Handli   | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)<br>gna  | XT AN<br>t – A (Sl<br>?<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?  | bort Answer<br>example?<br>s)?<br>ain?<br>s?   | er Ques  | A DATA           | ABASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Understand<br>Remember<br>Remember<br>Remember  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.11<br>AIT505.10   |
| 1     2     3     4     5     6     7     8     9   | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T<br>Discus about<br>Briefly descr   | t Traditional<br>ibed the secc<br>t Inverted Fi<br>illustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Po<br>ibed about T  | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tro<br>atial Acc<br>as Methous<br>I and ex<br>pints and<br>cext Retr   | TIAL, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Meto<br>ods (SAM<br>plain Si<br>i Handli<br>ieval an  | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)<br>gnat<br>ng I<br>d Ti   | XT AN<br>t – A (Sl<br>?<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Queri  | born - Tr<br>bort Answe<br>example?<br>s)?<br>ain?<br>s?<br>es can be C  | Classified   | A DATA<br>tions) | ABASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Remember<br>Remember<br>Remember<br>Understand  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.11  |
| $     \begin{array}{c}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       9 \\       10 \\       \end{array} $   | Explain abou<br>Briefly descri<br>Discuss abou<br>Explain and I<br>Briefly descri<br>List out the S<br>List out the T<br>Discus about<br>Briefly descri<br>List out the T  | t Traditional<br>ibed the seco<br>t Inverted Fi<br>illustrate the<br>ibe about Sp<br>patial Acces<br>ext Retrieva<br>Handling Po<br>ibed about T<br>ext Retrieva   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Ac<br>s Metho<br>il and ex<br>oints and<br>cext Retr<br>il and ex  | TIAL, '<br>ng Metho<br>ey and g<br>Grid Filo<br>ee?<br>cess Me<br>ods (SAM<br>plain Sig<br>I Handli<br>ieval ano<br>plain Fu  | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)<br>gnat<br>ng I<br>d TI<br>d TI   | XT AN<br>t – A (Sl<br>?<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Querio<br>?<br>ext Scan  | born - Tr<br>bort Answe<br>example?<br>example?<br>s?<br>es can be C<br>ning?  | MEDI<br>er Ques  | A DATA<br>tions) | BASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Remember<br>Remember<br>Remember<br>Understand<br>Remember   | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.11<br>AIT505.11   |
| $     \begin{array}{r}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       9 \\       10 \\       11 \\       \end{array} $   | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T<br>Discus about<br>Briefly descr<br>List out the T<br>Explain the S  | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Illustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Po<br>ibed about T<br>'ext Retrieva<br>pace Filling   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Act<br>is Metho<br>I and ex<br>pints and<br>cext Retr<br>I and ex<br>Curves  | TIAL, '<br>ng Metho<br>ey and g<br>Grid File<br>ee?<br>cess Metods (SAM<br>plain Si<br>ieval and<br>plain Fu<br>and drav  | TE<br>Par<br>ods<br>give<br>e?<br>thoo<br>Ms)<br>gnat<br>ng I<br>d T<br>d T<br>d T<br>d T<br>thur<br>thur<br>thur<br>thur<br>thur<br>thur<br>thur<br>thur   | XT AN<br>t - A (S)<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Querio<br>'ext Scan<br>te Z-orde  | born - To<br>born - | Plassifiec   | A DATA<br>tions) | BASES<br>Understand<br>Understand<br>Understand<br>Understand<br>Remember<br>Remember<br>Remember<br>Understand<br>Remember<br>Understand   | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.12  |
| $     \begin{array}{r}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       9 \\       10 \\       11 \\       12 \\       \end{array} $   | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T<br>Discus about<br>Briefly descr<br>List out the T<br>Explain the S<br>Briefly descr   | t Traditional<br>ibed the secc<br>t Inverted Fi<br>illustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Po<br>ibed about T<br>'ext Retrieva<br>pace Filling<br>ibed about S   | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tra<br>atial Acc<br>as Metho<br>I and ex<br>pints and<br>ext Retr<br>I and ex<br>Curves<br>ignature  | rIAL, '<br>ng Metho<br>ey and g<br>Grid Fild<br>ee?<br>cess Me<br>ods (SAM<br>plain Si<br>ieval and<br>plain Fu<br>and drav   | TE<br>Par<br>ods?<br>give<br>e?<br>thoce<br>Ms)<br>gnat<br>ng I<br>d T<br>ill T<br>w th<br>h gc   | XT AN<br>t – A (Sl<br>?<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Querio<br>fext Scan<br>he Z-orde<br>pod exan   | born - Tr<br>bort Answe<br>example?<br>example?<br>s?<br>es can be C<br>uning?<br>ering square<br>pple?  | Par Ques<br>Passifiec  | A DATA<br>tions) | BASES<br>Understand<br>Understand<br>Remember<br>Understand<br>Remember<br>Remember<br>Remember<br>Understand<br>Remember<br>Understand<br>Remember   | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.12   |
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| $ \begin{array}{c} 1\\ 2\\ 3\\ 4\\ 5\\ 6\\ 7\\ 8\\ 9\\ 10\\ 11\\ 12\\ 13\\ 14\\ 15\\ 16\\ 17\\ 18\\ 19\\ 20\\ - \end{array} $   | Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Briefly descr<br>List out the S<br>List out the T<br>Discus about<br>Briefly descr<br>List out the T<br>Explain the S<br>Briefly descr<br>List out the T<br>Discus about<br>Explain abou<br>Briefly descr<br>Discuss abou<br>Explain and I<br>Explain the c<br>Describe the                        | t Traditional<br>ibed the seco<br>t Inverted Fi<br>Illustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Pc<br>ibed about T<br>'ext Retrieva<br>pace Filling<br>ibed about S<br>'ext Retrieva<br>the Vector S<br>t Traditional<br>ibed the seco<br>t Inverted Fi<br>Illustrate the<br>lasses of the<br>Repository a              | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Ac<br>is Metho<br>I and ex<br>oints and<br>cext Retr<br>I and ex<br>Curves<br>ignature<br>I and ex<br>Space M<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>multime<br>applicati  | TIAL, '<br>ng Metho<br>ey and g<br>Grid File<br>ee?<br>cess Meto<br>ods (SAM<br>plain Sig<br>l Handli<br>ieval and<br>plain Fu<br>and drav<br>file wit<br>plain In<br>odel and<br>ng Metho<br>ey and g<br>Grid File<br>ee?<br>edia data<br>on in mu     | TE<br>Par<br>odsf<br>give<br>e?<br>thoo<br>Ms)<br>gnat<br>ng I<br>d Tl<br>dll T<br>dll T<br>dl<br>dll T<br>dll T<br>dl<br>dll T<br>dll T<br>dll T<br>dll T<br>dll T<br>dl<br>dll T<br>dl<br>dll T<br>dl<br>dl T<br>dl<br>dl<br>dl<br>dl<br>dl<br>dl<br>dl<br>dl<br>dl<br>dl<br>d<br>dl<br>d | XT AN<br>t - A (SI<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Querio<br>'ext Scan<br>the Z-order<br>cod exan<br>sion?<br>ustering?<br>me one<br>me one<br>se<br>media data<br>rt - B (L   | D MULT<br>hort Answe<br>example?<br>example?<br>es can be C<br>uning?<br>ering square<br>pple?<br>example?<br>example?<br>example?   | MEDI<br>er Ques  | A DATA<br>tions) | Understand         Understand         Remember         Understand         Understand         Understand         Remember         Remember         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Understand         Understand         Understand         Understand         Understand         Understand         Understand  | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.12<br>AIT505.12<br>AIT505.10<br>AIT505.12<br>AIT505.12<br>AIT505.11                           |
| $     \begin{array}{r}       1 \\       2 \\       3 \\       4 \\       5 \\       6 \\       7 \\       8 \\       9 \\       10 \\       11 \\       12 \\       13 \\       14 \\       15 \\       16 \\       17 \\       18 \\       19 \\       20 \\       1       1       1       1       1       $ | Explain abou<br>Briefly descri<br>Discuss abou<br>Explain and I<br>Briefly descri<br>List out the S<br>List out the T<br>Discus about<br>Briefly descri<br>List out the T<br>Explain the S<br>Briefly descri<br>List out the T<br>Discus about<br>Explain abou<br>Briefly descri<br>Discuss abou<br>Explain and I<br>Explain the c<br>Describe the<br>Briefly descri | t Traditional<br>ibed the seco<br>t Inverted Fi<br>illustrate the<br>ibe about Sp<br>patial Acces<br>'ext Retrieva<br>Handling Po<br>ibed about T<br>'ext Retrieva<br>pace Filling<br>ibed about S<br>'ext Retrieva<br>the Vector S<br>t Traditional<br>ibed the seco<br>t Inverted Fi<br>llustrate the<br>lasses of the<br>Repository a<br>ibed about | SPA<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>atial Ac<br>s Metho<br>as Metho<br>and ex<br>oints and<br>cext Retr<br>and ex<br>oints and<br>cext Retr<br>and ex<br>curves<br>ignature<br>and ex<br>Space M<br>Indexir<br>ondary k<br>les and<br>K-D Tr<br>multime<br>applicati | TIAL, '<br>ng Metho<br>ey and g<br>Grid File<br>ee?<br>cess Me<br>ods (SAM<br>plain Sig<br>Handli<br>ieval and<br>plain Fu<br>and drav<br>file witt<br>plain In<br>odel and<br>ng Metho<br>ee?<br>Grid File<br>ee?<br>edia data<br>on in mu<br>ne Serie | TE<br>Par<br>odsS<br>give<br>e?<br>thoo<br>Ms)<br>gnat<br>ng I<br>d Ti<br>d Ti<br>d Ti<br>d Ti<br>d Ti<br>d Ti<br>d Ti<br>d Ti  | XT AN<br>t - A (SI<br>me one<br>ds (SAM<br>and expl<br>ture Files<br>Regions?<br>he Queric<br>fext Scan<br>the Z-order<br>bod exan<br>sion?<br>ustering?<br>me one<br>se<br>media data<br>rt - B (L<br>nd the 2 | born - To<br>born Answe<br>example?<br>example?<br>es can be Coning?<br>es can be Coning?<br>ering square<br>pple?<br>example?<br>example?<br>example?<br>cong Answe   | MEDI<br>er Ques<br>lassifiec<br>er Ques<br>er Quest<br>finages a | A DATA<br>tions) | NASES         Understand         Understand         Remember         Understand         Understand         Remember         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Remember         Understand         Understand         Understand         Understand         Understand         Understand         Understand         Remember         Understand         Remember         Remember         Understand         Remember         Reme | CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4<br>CO 4 | AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.12<br>AIT505.11<br>AIT505.10<br>AIT505.11<br>AIT505.10<br>AIT505.10<br>AIT505.10<br>AIT505.12<br>AIT505.12<br>AIT505.12<br>AIT505.12<br>AIT505.10<br>AIT505.11<br>AIT505.11<br>AIT505.11 |

| 2  | List out the Spatial Access Methods (SAMs) and Space Filling Curves with  | Remember   | CO 4     | AIT505.11 |
|----|---|------------|----------|-----------|
|    | Suitable example?   |            |          |           |
| 3  | Explain about Traditional Indexing Methods? Briefly described the secondary key and give me one example?  | Understand | CO 4     | AIT505.10 |
| 4  | Briefly explain the following<br>a) Secondary Key b) Inverted File c) Grid File   | Remember   | CO 4     | AIT505.11 |
| 5  | Briefly described about Text Retrieval? Explain Vector Space Model and Chiefering?  | Remember   | CO 4     | AIT505.10 |
| 6  | Explain about the Multimedia Indexing method? Discuss about 1-D Time Series with suitable example?  | Understand | CO 4     | AIT505.12 |
| 7  | List out the 2-D Color Images and Explain Image Futures and Distance  | Remember   | CO 4     | AIT505.10 |
| 8  | Discuss about Sub pattern Matching and Sketch of the Approach - ST-Index with suitable example?   | Understand | CO 4     | AIT505.12 |
| 9  | Briefly explain the following<br>a) Full Text Scanning b) Inversion c)Signature Files   | Remember   | CO 4     | AIT505.10 |
| 10 | Discus about 1-D Time Series and the 2-D Color Images and Advantages and Disadvantages?   | Understand | CO 4     | AIT505.11 |
| 11 | Define Multimedia? List out traditional indexing methods? Explain about spatial access method in detail.  | Understand | CO 4     | AIT505.12 |
| 12 | Discuss about multimedia system and its applications. Give the meaning for secondary keys and text retrieval with examples.   | Remember   | CO 4     | AIT505.10 |
| 13 | Define Multimedia? Discuss the various types of Access Methods for multimedia objects.  | Understand | CO 4     | AIT505.11 |
| 14 | Discuss about Special Access Methods (SAMs) in detail.  | Understand | CO 4     | AIT505.12 |
| 15 | Discuss the Generic Multimedia object indexing in details.  | Remember   | CO 4     | AIT505.10 |
| 16 | Explain Vector Space Model and Clustering? Discuss the various types of Access Methods for multimedia objects.  | Understand | CO 4     | AIT505.11 |
| 17 | Explain the secondary keys? Discuss about text retrieval with examples.   | Understand | CO 4     | AIT505.12 |
| 18 | Briefly described about 2-D Color Images and with suitable example?   | Remember   | CO 4     | AIT505.10 |
| 19 | Briefly explain the following<br>i. Sub pattern Matching<br>ii. B-tree  | Understand | CO 4     | AIT505.11 |
| 20 | Elaborate 2-D color images with their characteristics.  | Understand | CO 4     | AIT505.12 |
|    | Part – C (Problem Solving and Critical Thinki   | ing)       |          |           |
| 1  | Consider the following table:   | Understand | CO 4     | AIT505.10 |
|    | Country(name: String, pop: number, boundary: POLYGON)<br>Where for each country, we record its name, population, and boundary. Also<br>assume that country name is a primary key. Write an SQL-like quarry language<br>for "List the name, population and area of each country in the country table"? |            |          |           |
| 2  | Consider the following table:<br>Country(name: String, pop: number, boundary: POLYGON)<br>Where for each country, we record its name, population, and boundary. Also<br>assume that country name is a primary key. Write an SQL-like quarry language  | Understand | CO 4     | AIT505.11 |
|    | for" Find all the names of countries that are neighbors of the United Kingdom (UK)."?   | TT. 1 4 4  | <u> </u> |           |
| 3  | Explain the Space filling Curves? Let the 8*8 grid in the following figures represent the maximum level of space decommission. Find the binary Z-value to best approximate the two objects in the following figure. You can use up to 4 Z-values for one object.                                      | Understand | CO 4     | AI1505.12 |

|    | В   |            |      |           |
|----|---|------------|------|-----------|
|    |   |            |      |           |
|    | A   |            |      |           |
|    |   |            |      |           |
|    |   |            |      |           |
| 4  | Explain about the Multimedia Indexing method? Discuss about Sub pattern         | Understand | CO 4 | AIT505.10 |
|    | Matching and Sketch of the Approach - ST-Index with suitable example?           |            |      |           |
| 5  | Briefly described about Text Retrieval? Explain Vector Space Model and          | Remember   | CO 4 | AIT505.11 |
|    | Clustering? Explain about the Multimedia Indexing method?                       |            |      |           |
| 6  | Explain the 1-D Time Series and List out the Advantages and Disadvantages       | Understand | CO 4 | AIT505.10 |
| 7  | Explain Vector Space Model and Clustering? List out traditional indexing        | Remember   | CO 4 | AIT505.11 |
|    | methods?  |            |      |           |
| 8  | Explain about spatial access method in detail? Discuss the Space Filling Curves | Understand | CO 4 | AIT505.10 |
|    | with Suitable example?  |            |      |           |
| 9  | Explain the 1-D Time Series and the 2-D Color Images? List out the Advantages   | Remember   | CO 4 | AIT505.11 |
|    | and Disadvantages of 2-D Color Images?  |            |      |           |
| 10 | Discuss about the $B^+$ -tree?Write the syntax of $B^+$ Tree index SQL.         | Understand | CO 4 | AIT505.10 |
|    | UNIT - V  |            |      |           |
|    | UNCERTAINITY IN DATABASES AND KNOWLH  | EDGE BASES | 5    |           |
|    | Part - A (Short Answer Questions)   |            |      |           |
| 1  | Explain about Models of Uncertainty database?                                   | Understand | CO 5 | AIT505.13 |
| 2  | Briefly described about uncertainty database in image database?                 | Remember   | CO 5 | AIT505.14 |
| 3  | Described about uncertainty database in temporal database?                      | Understand | CO 5 | AIT505.13 |
| 4  | Discuss about the uncertainty database in Null-Value?                           | Understand | CO 5 | AIT505.14 |
| 5  | List out the models of uncertainty database?                                    | Remember   | CO 5 | AIT505.15 |
| 6  | Explain the Fuzzy Sets and Fuzzy logic with suitable example?                   | Understand | CO 5 | AIT505.14 |
| 7  | Discuss about Lattice-Based Approaches and Lattices?                            | Remember   | CO 5 | AIT505.13 |
| 8  | Write about the Relationship to Fuzzy logic?                                    | Understand | CO 5 | AIT505.14 |
| 9  | Explain the Independence and Ignorance?   | Understand | CO 5 | AIT505.15 |
| 10 | Write the Probability Theory in models of uncertainty?                          | Remember   | CO 5 | AIT505.14 |
| 11 | Explain the Uncertainty in Relational Databases?                                | Understand | CO 5 | AIT505.13 |
| 12 | Briefly described about Lattice-Based Relational Databases?                     | Remember   | CO 5 | AIT505.15 |
| 13 | Write the Querying of Lattice-Based Database?                                   | Understand | CO 5 | AIT505.14 |
| 14 | Discuss about Probabilistic Relational Databases?                               | Remember   | CO 5 | AIT505.13 |
| 15 | Explain the Converting of Probabilistic Tuples to Annotated Tuples?             | Understand | CO 5 | AIT505.15 |
| 16 | Explain the Manipulating Annotated Relations? With Suitable example?            | Understand | CO 5 | AIT505.14 |
| 17 | Explain about the Integrity Constraints Uncertainty database                    | Understand | CO 5 | AIT505.14 |
| 18 | Describe the relational database in Uncertainty database                        | Remember   | CO 5 | AIT505.13 |
| 19 | Define attribute in Uncertainty database  | Understand | CO 5 | AIT505.15 |
| 20 | Explain the Multilevel Index in Uncertainty database                            | Understand | CO 5 | AIT505.14 |
|    | Part - B (Long Answer Questions)  |            |      |           |
| 1  | List out the Probabilistic Relational Databases and explain the Converting the  | Remember   | CO 5 | AIT505.13 |
|    | Probabilistic Tuples to Annotated Tuples?                                       |            |      |           |
| 2  | Briefly described about Lattice-Based Approaches and with suitable example?     | Remember   | CO 5 | AIT505.14 |
| 3  | Explain about Models of Uncertainty database? Briefly described about           | Understand | CO 5 | AIT505.15 |
|    | uncertainty database in image database?   |            |      |           |
| 4  | Briefly described about uncertainty database in image database and Temporal     | Remember   | CO 5 | AIT505.13 |
|    | Databases?  |            |      |           |

| 5       | Discuss the models of un   | ncertainty database wi   | Understand  | CO 5   | AIT505.15                    |  |
|---------|--|--|---|--|------------------------------|--|
| 6       | List out the Probabili   | istic Relational Data  | Understand  | CO 5   | AIT505.14                    |  |
|         | Annotated Relations?   |  |   |  |                              |  |
| 7       | Briefly described about  | Probability Theory wi  | Remember  | CO 5   | AIT505.13                    |  |
| 8       | Explain the Uncertainty  | in Databases and know  | Understand  | CO 5   | AIT505.13                    |  |
| 9       | Briefly described about  | it Models of Uncert  |   | CO 5   |                              |  |
|         | Databases with suitable  | examples   |   |  |                              |  |
| 10      | List out the models of un  | ncertainty database an   | d Lattice-Based Approaches?   | Understand                                       | CO 5                         | AIT505.13  |
| 11      | Explain the Uncertaint   | ty in Image Databa   | se and Temporal Database with   | Understand                                       | CO 5                         | AIT505.15  |
|         | example.   |  |   |  |                              |  |
| 12      | Discuss the various Mod  | lels of Uncertainty in   | detail.   | Remember   | CO 5                         | AIT505.14  |
| 13      | Discuss in details about   | ut Lattice based RD  | BMS and give the notations and  | Understand                                       | CO 5                         | AIT505.13  |
| 1.4     | selection relation with ex   | xamples.   |   | <b>D</b> 1                                       | <u> </u>                     | A 175 0 5 1 5                                    |
| 14      | State and prove the mod  | els of Uncertainty wit   | h suitable examples.  | Remember   | CO 5                         | AI1505.15  |
|         | I. Fuzzy logic   |  |   |  |                              |  |
| 15      | II. Fuzzy Sets   | ale of Uncontainty wit   | h guitable exemples   | Understand                                       | CO 5                         | AIT505 14  |
| 15      | I Probability The  | ers of Oncertainty wit   | ii suitable examples.   | Understand                                       | 05                           | AI1505.14  |
|         | II Fuzzy logic   | Jory   |   |  |                              |  |
| 16      | Briefly described about  | t uncertainty database   | e in image database? List out the   | Remember   | CO 5                         | AIT505.13  |
| 10      | models of uncertainty da   | atabase?   | in mage autouse. List out the   | rememori   | 000                          | 111202112  |
| 17      | Discuss about Probabil   | listic Relational Data   | abases? Explain the Manipulating  | Understand                                       | CO 5                         | AIT505.15  |
|         | Annotated Relations? W   | ith Suitable example?  |   |  |                              |  |
| 18      | Explain the Converting   | g of Probabilistic Tu  | ples to Annotated Tuples? Define  | Remember   | CO 5                         | AIT505.14  |
|         | attribute in Uncertainty   | / database   | -   |  |                              |  |
| 19      | Explain the Fuzzy Sets a   | and Fuzzy logic with s   | uitable example?  | Understand                                       | CO 5                         | AIT505.13  |
| 20      | State and prove the mod  | lels of Uncertainty wi   | th suitable examples of Probability   | Remember   | CO 5                         | AIT505.15  |
|         | Theory and Fuzzy Sets  |  |   |  |                              |  |
|         |  | Part – C (P  | roblem Solving and Critical Thinki  | ing)   |                              |  |
|         | Create a table using the   | attributes (File, Person   | n, LB, UB, and Salary) and Find all   | Understand                                       | CO 5                         | AIT505.15  |
| 1       | Pictures of people maki  | ing over \$100,000 pe  | r year where the pictures correctly   |  |                              |  |
|         | identify the person in au  | estion with over 70%   | Probability?  |  |                              |  |
|         | raenary the person in qu   |  | se with certainty over 50% using  | <b></b>  | ~ ~ -                        |  |
| 2       | Find people who appea  | ar in the face databa  | se with certainty over 50% using  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear following table?  | ar in the face databa  | se will certainly over 50% using  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?   | Person   |   | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif  | Person<br>Mark Bloom   | Unc<br>0.6  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im1.gif   | Person<br>Mark Bloom<br>Ted Lewis  | Unc<br>0.6<br>0.8   | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif  | Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.   | Unc<br>0.6<br>0.8<br>1  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif   | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis   | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>Im3.gif  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elso   | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0   | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa   | Unc         0.6           0.8         1           1         0.4           0.         0.   | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa   | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif<br>Briefly described about   | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati   | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.4<br>0.<br>0.4<br>0.  | Understand                                       | CO 5                         | AIT505.13  |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif<br>Briefly described abou<br>Explain the Converting  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>z the Probabilistic T  | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.  | Understand                                       | CO 5<br>CO 5                 | AIT505.13<br>AIT505.14                           |
| 2       | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>Im3.gif<br>Briefly described abou<br>Explain the Converting<br>suitable examples?  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T  | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.1<br>0.4<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.  | Understand                                       | CO 5                         | AIT505.13<br>AIT505.14                           |
| 2 3 4   | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif<br>Briefly described abou<br>Explain the Converting<br>suitable examples?<br>Explain the Uncertainty   | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T<br>in Image Databases  | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>Onal Databases and List out and<br>Fuples to Annotated Tuples with<br>and Temporal Databases and Null-  | Understand Remember Understand                   | CO 5<br>CO 5<br>CO 5         | AIT505.13<br>AIT505.14<br>AIT505.13              |
| 2 3 4   | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif<br>Briefly described abou<br>Explain the Converting<br>suitable examples?<br>Explain the Uncertainty<br>Value with suitable exam   | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T<br>in Image Databases<br>nples?  | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.4<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.   | Understand<br>Remember<br>Understand             | CO 5<br>CO 5<br>CO 5         | AIT505.13<br>AIT505.14<br>AIT505.13              |
| 2 3 4 5 | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>Im3.gif<br>Briefly described about<br>Explain the Converting<br>suitable examples?<br>Explain the Uncertainty<br>Value with suitable exar<br>Briefly described about                           | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T<br>in Image Databases<br>ples?<br>Lattice-Based Relat                            | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.  | Understand<br>Remember<br>Understand<br>Remember | CO 5<br>CO 5<br>CO 5<br>CO 5 | AIT505.13<br>AIT505.14<br>AIT505.13<br>AIT505.14 |
| 2 3 4 5 | Find people who appea<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>In3.gif<br>Briefly described abou<br>Explain the Converting<br>suitable examples?<br>Explain the Uncertainty<br>Value with suitable exar<br>Briefly described about<br>example in Projection, U | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T<br>in Image Databases<br>nples?<br>Lattice-Based Relat<br>Jnion and Intersection | Unc<br>0.6<br>0.8<br>1<br>1<br>0.4<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.<br>0.  | Understand<br>Remember<br>Understand<br>Remember | CO 5<br>CO 5<br>CO 5<br>CO 5 | AIT505.13<br>AIT505.14<br>AIT505.13<br>AIT505.14 |
| 2 3 4 5 | Find people who appear<br>following table?<br>File<br>Im1.gif<br>Im2.gif<br>Im2.gif<br>Im3.gif<br>Im3.gif<br>Briefly described about<br>Explain the Converting<br>suitable examples?<br>Explain the Uncertainty<br>Value with suitable example in Projection, U                                  | ar in the face databa<br>Person<br>Mark Bloom<br>Ted Lewis<br>Mark Bloom.<br>Ted Lewis<br>Lynn<br>Elsa<br>t Probabilistic Relati<br>g the Probabilistic T<br>in Image Databases<br>nples?<br>Lattice-Based Relat<br>Jnion and Intersection | Unc         0.6         0.8         1         0.4         0.         onal Databases and List out and Fuples to Annotated Tuples with and Temporal Databases and Null-         ional Databases and with suitable ? | Understand<br>Remember<br>Understand<br>Remember | CO 5<br>CO 5<br>CO 5<br>CO 5 | AIT505.13<br>AIT505.14<br>AIT505.13<br>AIT505.14 |

| 6  | Find people who appear in the face database with certainty over 50%             |                     |                             |                          |          | Understand | CO 5 | AIT505.13 |
|----|---|---------------------|-----------------------------|--------------------------|----------|------------|------|-----------|
|    | File  |                     | Person                      | Unc                      |          |            |      |           |
|    | Im1.g   | gif                 | Mark Bloom                  | 0.6                      |          |            |      |           |
|    | Im1.g   | gif                 | Ted Lewis                   | 0.8                      |          |            |      |           |
|    | Im2.g   | gif                 | Mark Bloom.                 | 1                        |          |            |      |           |
|    | Im2.g   | gif                 | Ted Lewis                   | 1                        |          |            |      |           |
|    | Im3.g   | gif                 | Lynn                        | 0.4                      |          |            |      |           |
|    | In3.g   | if                  | Elsa                        | 0.                       |          |            |      |           |
| 7  | Create  | a table using the   | attributes (File, Person, I | LB, UB, and Salary) and  | Using    | Remember   | CO 5 | AIT505.14 |
|    | the ign   | orance strategy for | or conjunction, find all j  | pictures of people makin | g over   |            |      |           |
|    | \$100,000 per year where the pictures correctly identify the person in question |                     |                             |                          |          |            |      |           |
|    | with or   | ver 70% probabilit  | y                           |                          |          |            |      |           |
| 8  | Briefly   | described about     | t Querying Probabilis       | tic Databases in Unce    | ertainty | Understand | CO 5 | AIT505.13 |
|    | database.   |                     |                             |                          |          |            |      |           |
| 9  | State and prove the models of Uncertainty with suitable examples                |                     |                             |                          |          | Remember   | CO 5 | AIT505.14 |
|    | I. Selection  |                     |                             |                          |          |            |      |           |
|    | II.   | Projection          |                             |                          |          |            |      |           |
|    | III.  | Difference          |                             |                          |          |            |      |           |
| 10 | State a   | nd prove the mode   | els of Uncertainty with su  | itable examples          |          | Understand | CO 5 | AIT505.13 |
|    | I.  | Cartesian Produ     | ct                          |                          |          |            |      |           |
|    | II.   | Union               |                             |                          |          |            |      |           |
|    | III. Compaction   |                     |                             |                          |          |            |      |           |

**Prepared by:** Mr. D Rahul, Assistant Professor

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