```
nSub = {}
while(Table 1 has more rows){
    Read the first row X from Table 1
    count = 0
    if(member(M, X.SeqNo)){
        count = count + 1
    }
    if(member(P, X.SeqNo)){
        count = count + 1
    }
    if(member(C, X.SeqNo)){
        count = count + 1
    }
    if(count >= 2){
        nSub[SeqNo] = True
    }
    Move X to Table 2
}
```

```
nSub = {}
while(Table 1 has more rows){
    Read the first row X from Table 1
    count = 0
    if(member(M, X.SeqNo)){
        count = count + 1
    }
    if(member(P, X.SeqNo)){
        count = count + 1
    }
    if(member(C, X.SeqNo)){
        count = count + 1
    }
    nSub[X.SeqNo] = count
    Move X to Table 2
}
```

6406531165887.

DBMS

Section Id : 64065322134

Section Number : 4

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	16 16 50
Number of Questions to be attempted :	Yes No
Section Marks :	
Display Number Panel :	
Group All Questions :	
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065350380
Question Shuffling Allowed :	No

Question Number : 64 Question Id : 640653351286 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DATABASE MANAGEMENT SYSTEMS"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

Yes 6406531165888. ✔

No 6406531165889. ✖

Sub-Section Number :	2
Sub-Section Id :	64065350381
Question Shuffling Allowed :	Yes

Question Number : 65 Question Id : 640653351291 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following statements.

Statement 1: Minimum arity of a node is defined as the arity of the tree.

Statement 2: Arity of the Binary Search Tree is 1.

Options :

6406531165906. Statement 1 is correct, statement 2 is wrong.

6406531165907. Statement 1 is wrong, statement 2 is correct.

6406531165908. Both the statements are correct.

6406531165909. Both the statements are wrong.

Question Number : 66 Question Id : 640653351297 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

The relation **EmployeeReview** is defined as **EmployeeReview**$(EmpID,\ Name,\ HireDate,\ Reviewer,\ Grade)$ with the functional dependencies set

$$\mathcal{F} = \{EmpID \rightarrow HireDate, Name \\ Reviewer \rightarrow Grade \\ EmpID \rightarrow Grade\}$$

According to which of the following rules, $EmpID \rightarrow \{HireDate, Name, Grade\}$ holds?

Options :

6406531165920. Decomposition

6406531165921. Union

6406531165922. Pseudo-transitivity

6406531165923. Augmentation

Question Number : 67 Question Id : 640653351303 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following statements:

1. HyperText Transfer Protocol (HTTP) is used for communication with the Web server
2. HTTP provides formatting, hypertext link, and image display features.
3. The HTTP protocol is connectionless.

Choose the correct option.

Options :

6406531165944. Statements 1 & 2 are correct.

6406531165945. Statements 2 & 3 are correct.

6406531165946. Statements 1 & 3 are correct.

6406531165947. All the statements are correct.

Sub-Section Number :	3
Sub-Section Id :	64065350382
Question Shuffling Allowed :	Yes

Question Number : 68 Question Id : 640653351288 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the tables **Name** and **Rule** shown in the Table 2 and Table 3 respectively.

Name
1. Augmentation
2. Complementation
3. Replication
4. Transitivity

Table 2: **Name**

Rule
A. If $X \rightarrow\rightarrow Y$ and $Z \subseteq W$, then $WX \rightarrow\rightarrow YZ$.
B. If $X \rightarrow\rightarrow Y$ and $Y \rightarrow\rightarrow Z$, then $X \rightarrow\rightarrow (Z - Y)$
C. If $X \rightarrow\rightarrow Y$, then $X \rightarrow\rightarrow (R - (X \cup Y))$.
D. If $X \rightarrow Y$, then $X \rightarrow\rightarrow Y$ but the reverse is not true

Table 3: **Rule**

Which among the following is the correct matching of **Name** and **Rule**?

Options :

6406531165894. 1-A, 2-D, 3-C, 4-B

6406531165895. 1-B, 2-A, 3-D, 4-C

6406531165896. 1-A, 2-C, 3-D, 4-B

6406531165897. 1-A, 2-C, 3-B, 4-D

Question Number : 69 Question Id : 640653351290 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a relational schema **Faculty** $(fid, fname, address, experience, designation, salary)$, where the domains of all the attributes consist of atomic values. Consider the following functional dependencies for the relation **Faculty**.

$$\mathcal{F} = \{$$
$$fid \rightarrow fname, address, experience, designation,$$
$$designation \rightarrow salary,$$
$$experience \rightarrow designation$$
$$\}$$

What is the highest normal form of the above relational schema **Faculty**?

Options :

6406531165902. 1NF

6406531165903. 2NF

6406531165904. 3NF

6406531165905. BCNF

Question Number : 70 Question Id : 640653351300 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the relation **CAR**(*LicenseNo, EngineSerialNo, Model, Year*) and the following functional dependencies set

$$\mathcal{F} = \{LicenseNo, EngineSerialNo \rightarrow Model,$$
$$EngineSerialNo \rightarrow Year$$
$$Model, Year \rightarrow EngineSerialNo\}$$

If the relation **CAR** is decomposed into two relations **C1** and **C2**, which of the following is a lossless decomposition?

Options :

6406531165932. $\mathbf{C1}(LicenseNo,\ EngineSerialNo,\ Model),\ \mathbf{C2}(Model,\ Year)$

6406531165933. $\mathbf{C1}(LicenseNo,\ EngineSerialNo,\ Model),\ \mathbf{C2}(EngineSerialNo,\ Year)$

6406531165934. $\mathbf{C1}(LicenseNo,\ EngineSerialNo),\ \mathbf{C2}(Model,\ Year)$

6406531165935. $\mathbf{C1}(LicenseNo,\ EngineSerialNo,\ Year),\ \mathbf{C2}(LicenseNo,\ Year)$

Question Number : 71 Question Id : 640653351301 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider a relation $\mathbf{R}(A,\ B,\ C,\ D,\ E)$ with the following functional dependency sets

$\mathcal{F} = \{A \rightarrow BCD, CD \rightarrow E, BC \rightarrow AE\}$

Which of the following is the correct canonical cover of the set of functional dependencies $\mathcal{F}$ that occur in the relation $\mathbf{R}$?

Options :

6406531165936. $A \rightarrow BD, CD \rightarrow E, BC \rightarrow AE$

6406531165937. $A \rightarrow D, CD \rightarrow E, BC \rightarrow E$

6406531165938. $A \rightarrow C, D \rightarrow E, BC \rightarrow AE$

6406531165939. $A \rightarrow BCD, CD \rightarrow E, BC \rightarrow A$

Question Number : 72 Question Id : 640653351304 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider table **profile** shown in table 5:

Name	Salary
Data Engg	55000
Data Sci.	75000
Data Arch.	75000
App Dev	40000
JAVA Dev	30000
Programmer	60000

Table 5: **profile**

Choose the correct output table when the following query is executed.

```
UPDATE profile
SET salary = salary + 5000
WHERE name LIKE 'Data%' or 'X' = 'X'
```

Options :

6406531165948.

Name	Salary
Data Engg	55000
Data Sci.	75000
Data Arch.	75000
App Dev	45000
JAVA Dev	35000
Programmer	65000

6406531165949.

Name	Salary
Data Engg	55000
Data Sci.	75000
Data Arch.	75000
App Dev	40000
JAVA Dev	30000
Programmer	60000

6406531165950.

Name	Salary
Data Engg	60000
Data Sci.	80000
Data Arch.	80000
App Dev	45000
JAVA Dev	35000
Programmer	65000

Name	Salary
Data Engg	60000
Data Sci.	80000
Data Arch.	80000
App Dev	40000
JAVA Dev	30000
Programmer	60000

6406531165951.

Sub-Section Number : 4

Sub-Section Id : 64065350383

Question Shuffling Allowed : Yes

Question Number : 73 Question Id : 640653351302 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

Consider table **employee** inside the database **organization**. Table **employee** has the data as shown in table 4:

eid	edept	ename	esalary
5	Acc	Abhijeet	720000
6	Mar	Shahid	608000
7	Sales	Shab	200000
8	Mar	Meenakshi	336000
9	Sales	Dj	528000
10	Mar	Sashi	432000
11	Acc	Rekha	3080000
12	HR	Joseph	1822504
13	HR	Arif	3037504

Table 4: **employee**

How many rows will be fetched and display by the Python code given below?

```
import os
import sys
import psycopg2

conn = None
try:
    conn = psycopg2.connect(database = 'organization', user = 'postgres',
    password = 'passwrd',host = 'localhost',port = '5432')

    cur=conn.cursor()
    cur.execute('select * from employee where esalary > 500000')
    result = cur.fetchmany()
    for i in result:
        print(i)
    cur.close()
except (Exception, psycopg2.DatabaseError) as error:
        print(error)
finally:
    if conn is not None:
        conn.close()
```

Options :

6406531165940. 1

6406531165941. 2

6406531165942. 3

6406531165943. 4

Sub-Section Number : 5

Sub-Section Id : 64065350384

Question Shuffling Allowed : Yes

Question Number : 74 Question Id : 640653351298 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Select Question

Consider a **CourseSection** relation having the attributes (*Course, Section, Instructor, RoomNo, Time*) with the following set of FDs:

$\mathcal{F} = \{Course, Section, Time \rightarrow RoomNo, Instructor$
$Course, Section, Instructor \rightarrow RoomNo, Time\}$

Which among the following is/are candidate key for the relation **CourseSection**?

Options :

6406531165924. {*Course, Section, Time*}

6406531165925. {*Course, Section, Instructor*}

6406531165926. {*Instructor, RoomNo*}

6406531165927. {*Course, Section, Time, Instructor*}

Sub-Section Number : 6

Sub-Section Id : 64065350385

Question Shuffling Allowed : Yes

Question Number : 75 Question Id : 640653351287 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the table **R** shown in the Table 1

X	Y	Z
a	b	d
a	c	e
a	c	d
a	b	e

Table 1: **R**

Which among the following holds true for the given table?

Options :

6406531165890. X → Y

6406531165891. X →→ Y

6406531165892. X → → Z

6406531165893. Y → Z

Question Number : 76 Question Id : 640653351289 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider a relational schema **BankAccount***(Name, AadharNo, AccountNo,ContactNo)* with the following functional dependencies:

$$\mathcal{F} = \{$$
$$Name \rightarrow AadharNo,$$
$$AadharNo \rightarrow AccountNo,$$
$$AccountNo \rightarrow ContactNo,$$
$$ContactNo \rightarrow Name$$
$$\}$$

Above relation **BankAccount** is decomposed into three smaller relations. **BankAccount1**(*Name, AadharNo*), **BankAccount2**(*AadharNo, AccountNo*) and **BankAccount3**(*AccountNo,ContactNo*).

Based on the given information, which among the following is incorrect?

Options :

6406531165898. The number of super keys for relation **BankAccount** are 15.

6406531165899. The decomposition of **BankAccount** is lossy.

6406531165900. AccountNo → ContactNo is preserved in the decomposed relations.

6406531165901. ContactNo → Name is not preserved in the decomposed relations.

Question Number : 77 Question Id : 640653351299 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Select Question

Consider the relation $\mathbf{R}$ $\{P, Q, R, S, T\}$ with the following set of FDs:

$\mathbf{X} = \{P \rightarrow R, T \rightarrow S, PQ \rightarrow R, R \rightarrow QS\}$
$\mathbf{Y} = \{P \rightarrow QR, T \rightarrow S, R \rightarrow Q, Q \rightarrow S\}$

Which of the following statement(s) is/are correct?

Options :

6406531165928. Both X covers Y and Y covers X

6406531165929. X covers Y

6406531165930. Y covers X

6406531165931. Neither X covers Y nor Y covers X

Sub-Section Number : 7

Sub-Section Id : 64065350386

Question Shuffling Allowed : Yes

Question Number : 78 Question Id : 640653351292 Question Type : SA Calculator : None
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 3

Question Label : Short Answer Question

If the maximum level of a complete binary search tree is 5, then what is the maximum number of nodes?

NOTE: Enter your answer to the nearest integer.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Sub-Section Number : 8

Sub-Section Id : 64065350387

Question Shuffling Allowed : No

Question Id : 640653351293 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (79 to 81)

Question Label : Comprehension

Answer the given subquestions on the basis of the following data.

Consider a magnetic disk with 8 platters, 2 surfaces/platter, 1024 tracks/surface, 2048 sectors/track, and 512 bytes/sector. The disk rotates with 6000 revolutions per minute.

Sub questions

Question Number : 79 Question Id : 640653351294 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

What is the capacity of the disk?

Options :

6406531165911. 16 GB

6406531165912. 32 GB

6406531165913. 32 MB

6406531165914. 16 MB

Question Number : 80 Question Id : 640653351295 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Short Answer Question

What is the minimum number of bits required for addressing all the sectors?

NOTE: Enter your answer to the nearest integer. **Response Type :** Numeric **Evaluation Required For SA :** Yes **Show Word Count :** Yes **Answers Type :** Equal **Text Areas :** PlainText **Possible Answers :**

Question Number : 81 Question Id : 640653351296 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Correct Marks : 2 Question Label : Multiple Choice Question

Given that the rotational speed of the disk is 6000 revolutions per minute. Consider the seek time is 3ms. What will be the rotational latency?

Options :

6406531165916. 10 sec

6406531165917. 5 sec

6406531165918. 10 ms

6406531165919. 5 ms

PDSA

Section Id : 64065322135

Section Number : 5 Online

Section type : Mandatory

Mandatory or Optional : 15 15

Number of Questions :

Number of Questions to be attempted :