Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	695
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No
Revisit allowed for group Instructions? :	Yes
Maximum Instruction Time :	0
Minimum Instruction Time :	0
Group Time In :	Minutes
Revisit Section :	Yes
Action on Revisit Section :	View and Edit
Navigate To Group Summary From Last Question? :	No
Disable Submit Button During Assessment? :	No
Section Selection Time? :	0
No of Optional sections to be attempted :	0

DBMS

Section Id :	64065360923
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	14
Number of Questions to be attempted :	14
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653126821
Question Shuffling Allowed :	No

Question Number : 1 Question Id : 640653852324 Question Type : MCQ

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : DATABASE MANAGEMENT SYSTEMS (COMPUTER BASED EXAM)"

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 :

6406532866834. ✔ YES

6406532866835. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	640653126822
Question Shuffling Allowed :	Yes

Question Number : 2 Question Id : 640653852325 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the relation schema and the set of functional dependencies:
$\mathbf{R}(A, B, C, D, E, F, G)$
$\mathcal{F} = \{A \rightarrow BC, D \rightarrow EF, F \rightarrow G, G \rightarrow A\}$

What is the total number of superkeys of relation $\mathbf{R}$?

Options :

6406532866836. ✖ 48

6406532866837. ✖ 32

6406532866838. ✔ 64

6406532866839. ✖ 16

Question Number : 3 Question Id : 640653852330 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the schema $\mathbf{D}(P, Q, R, S)$ with the following functional dependencies
$\mathrm{F} = \{R \rightarrow S, P \rightarrow Q, Q \rightarrow R, S \rightarrow P\}$
Let D_1, D_2 be a decomposition of $\mathbf{D}$ such that $D_1 \cap D_2 \neq \phi$.
Then, D_1 and D_2 are

Options :

6406532866856. ✖ not in 2NF

6406532866857. ✖ in 2NF but not in 3NF

6406532866858. ✖ in 3NF but not in 2NF

6406532866859. ✔ in both 2NF and 3NF

Question Number : 4 Question Id : 640653852332 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following table 1:

Country	Player	Runs	Wickets
India	Sharma	a	b
India	Pandya	c	23
India	Sharma	676	20
India	Pandya	500	23

Table 1: Scorecard

Choose the correct values of a, b, and c such that the following MVD is true:
$Country \twoheadrightarrow (Player, Wickets)$

Options :

6406532866864. ✖ a: 500, b: 23, c: 676

6406532866865. ✖ a: 676, b: 20, c: 500

6406532866866. ✖ a: 500, b: 23, c: 500

6406532866867. ✔ a: 500, b: 20, c: 676

Sub-Section Number : 3

Sub-Section Id : 640653126823

Question Shuffling Allowed : Yes

Question Number : 5 Question Id : 640653852326 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

Consider the relational schema $\mathrm{R}(P, Q, R, S, T, U, V)$
and the set of functional dependencies
$\mathcal{F} = \{$
$P \rightarrow Q,$
$PQ \rightarrow R,$
$S \rightarrow RP,$
$ST \rightarrow U,$
$U \rightarrow V\}$
Which of the following functional dependency sets is sufficient to derive the given set of functional dependencies?

Options :

6406532866840. ✖

$\mathcal{F} = \{P \to Q, P \to R, S \to Q, T \to Q, U \to V\}$

6406532866841. ✖ $\mathcal{F} = \{P \to R, S \to P, S \to Q, R \to T, U \to V\}$

6406532866842. ✔ $\mathcal{F} = \{P \to Q, P \to R, S \to P, ST \to Q, Q \to U, U \to V\}$

6406532866843. ✖ $\mathcal{F} = \{P \to Q, P \to R, S \to Q, ST \to Q, Q \to U, U \to V\}$

Question Number : 6 Question Id : 640653852327 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a relation $\mathrm{R}(A,B,C,D,E,F,G,H,I)$, where each attribute is atomic. The following set of functional dependencies is applicable to R:
$\mathcal{F}=\{AB \to CDE, D \to F, F \to GH, H \to I, I \to AB\}$
The highest normal form for this relation is.....

Options :

6406532866844. ✖ 1 NF

6406532866845. ✖ 2 NF

6406532866846. ✖ 3 NF

6406532866847. ✔ BCNF

Question Number : 7 Question Id : 640653852328 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

The following numbers are inserted into an empty binary search tree in the given order.

24, 60, 48, 12, 72, 96, 36, 108, 84

Let X, Y denote the number of nodes in the left and right sub tree of node 60 respectively. Find the value of $|X - Y|$.

Options :

6406532866848. ✔ 2

6406532866849. ✖ 3

6406532866850. ✖ 4

6406532866851. ✖ 5

Question Number : 8 Question Id : 640653852329 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

Consider a disk with a sector size of 512 bytes, 3000 tracks/surface, 50 sectors/track, and 8 double-sided platters. Which of the following is the correct choice for the number of cylinders and block size?

Options :

6406532866852. ✔ Number of cylinders= 3000, block size= 1536

6406532866853. ✖ Number of cylinders= 6000, block size= 256

6406532866854. ✖ Number of cylinders= 3000, block size= 256

6406532866855. ✖ Number of cylinders= 6000, block size= 786

Question Number : 9 Question Id : 640653852331 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

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

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

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

Options :

6406532866860. ✔ X covers Y

6406532866861. ✖ Y covers X

6406532866862. ✖ Both X covers Y and Y covers X

6406532866863. ✖ Neither X covers Y nor Y covers X

Sub-Section Number : 4

Sub-Section Id : 640653126824

Question Shuffling Allowed : Yes

Question Number : 10 Question Id : 640653852335 Question Type : MSQ

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following commands will make changes in the Data Dictionary?

Options :

6406532866876. ✖ UPDATE

6406532866877. ✖ DELETE

6406532866878. ✔ TRUNCATE

6406532866879. ✔ ALTER

Sub-Section Number : 5

Sub-Section Id : 640653126825

Question Shuffling Allowed : Yes

Question Number : 11 Question Id : 640653852334 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0
Question Label : Multiple Select Question

Consider the following table:

Artist	Genre	ActiveYears	RecordsSold
Pink Floyd	Progressive Rock	50	2500000
Guns N' Roses	Blues Rock	40	1800000
Iron Maiden	Heavy Metal	35	2300000
Queen	Rock	40	1800000
Led Zeppelin	Hard Rock	50	2200000
Black Sabbath	Death Metal	40	1700000

Table 2: **Bands**

Which of the following functional dependencies hold in the **Bands** table?

Options :

6406532866872. ✔ $Genre \rightarrow Artist$

6406532866873. ✖ $ActiveYears \rightarrow Genre$

6406532866874. ✔ $Artist \rightarrow RecordsSold$

6406532866875. ✔ $RecordsSold \rightarrow ActiveYears$

Question Number : 12 Question Id : 640653852336 Question Type : MSQ
Correct Marks : 3 Max. Selectable Options : 0
Question Label : Multiple Select Question

Identify the SQL statement(s) that can act as SQL Injections to retrieve all the user IDs, names and passwords from the table *users* in the absence of any security for the database.

Options :

6406532866880. ✖
```
SELECT userid, name, password FROM users
WHERE userid = 160 or 1<>1;
```

6406532866881. ✖
```
SELECT userid, name, password FROM users
WHERE userid = 160 and 1=1;
```

6406532866882. ✔
```
SELECT userid, name, password FROM users
WHERE userid = 160 or 1=1;
```

6406532866883. ✔
```
SELECT userid, name, password FROM users
WHERE userid = 160 or 99=99;
```

Sub-Section Number : 6
Sub-Section Id : 640653126826
Question Shuffling Allowed : Yes

Question Number : 13 Question Id : 640653852333 Question Type : MSQ
Correct Marks : 5 Max. Selectable Options : 0
Question Label : Multiple Select Question

Consider a relational schema **Student**$(admissionNo, studentName, phoneNo, address)$ with four different sets of functional dependencies (Assume that all the attributes have atomic values.).

- $F1 = \{admissionNo \rightarrow studentName,$
  $phoneNo \rightarrow admissionNo,$
  $(studentName, address) \rightarrow admissionNo\}$
- $F2 = \{admissionNo \rightarrow (studentName, address),$
  $phoneNo \rightarrow admissionNo,$
  $(studentName, address) \rightarrow phoneNo\}$
- $F3 = \{(admissionNo, studentName) \rightarrow address,$
  $phoneNo \rightarrow studentName,$
  $(studentName, admissionNo) \rightarrow phoneNo\}$
- $F4 = \{(admissionNo, studentName) \rightarrow (address, phoneNo),$
  $phoneNo \rightarrow admissionNo,$
  $studentName \rightarrow address\}$

Which of the following is/are true?

Options :

6406532866868. ✖ Relation **Student** is in 3NF when F1 is the Functional dependencies set.

6406532866869. ✔ Relation **Student** is in 3NF when F2 is the Functional dependencies set.

6406532866870. ✔ Relation **Student** is in 3NF when F3 is the Functional dependencies set.

6406532866871. ✖ Relation **Student** is in 3NF when F4 is the Functional dependencies set.

Sub-Section Number : 7

Sub-Section Id : 640653126827

Question Shuffling Allowed : No

Question Id : 640653852337 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Question Numbers : (14 to 15)

Question Label : Comprehension

Use the data given below and answer the given subquestions.

SpaceX CEO Elon Musk has decided to set up an office in India. They have designed a database collecting records of all the employees that will be working towards their new projects. Below is the original structure of the database designed by SpaceX.

$\mathbf{SpaceX}(Emp\_ID, Associate\_Name, Department\_ID, Department\_Name, Salary, Project\_ID, Project\_Name)$

The functional dependencies applicable to **SpaceX** are:

$$\mathcal{F} = \{Emp\_ID \rightarrow Associate\_Name, Project\_ID$$
$$Project\_ID \rightarrow Project\_Name,$$
$$Department\_ID \rightarrow Department\_Name, Project\_ID$$
$$(Department\_ID, Emp\_ID) \rightarrow Salary\}$$

Sub questions

Question Number : 14 Question Id : 640653852338 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

The current table is in which normal form?

Options :

6406532866884. ✔ 1 NF

6406532866885. ✖ 2 NF

6406532866886. ✖ 3 NF

6406532866887. ✖ BCNF

Question Number : 15 Question Id : 640653852339 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

Which of the following decompositions will help to achieve BCNF?

Options :

6406532866888. ✖

Table 1: **Employee** $(Emp\_ID, Associate\_Name)$
Table 2: **Projects** $(Project\_ID, Project\_Name)$
Table 3: **Departments** $(Department\_ID, Department\_Name, Salary)$
Table 4: **Salary** $(Department\_ID, Emp\_ID)$

6406532866889. ✖

Table 1: **Employee** $(Emp\_ID, Associate\_Name)$
Table 2: **Projects** $(Project\_ID, Project\_Name)$
Table 3: **Departments** $(Department\_ID, Department\_Name, Project\_Name)$
Table 4: **Salary** $(Department\_ID, Salary)$

6406532866890. ✖

Table 1: **Employee** $(Emp\_ID, Associate\_Name, Project\_ID)$
Table 2: **Projects** $(Project\_ID, Project\_Name)$
Table 3: **Departments** $(Department\_ID, Department\_Name, Project\_Name)$
Table 4: **Salary** $(Department\_ID, Emp\_ID, Salary)$

6406532866891. ✔

Table 1: **Employee** $(Emp\_ID, Associate\_Name)$
Table 2: **Projects** $(Project\_ID, Project\_Name)$
Table 3: **Departments** $(Department\_ID, Department\_Name, Project\_ID)$
Table 4: **Salary** $(Department\_ID, Emp\_ID, Salary)$

PDSA

Section Id :	64065360924
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17
Number of Questions to be attempted :	17
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	No
Section Maximum Duration :	0
Section Minimum Duration :	0
Section Time In :	Minutes