

Fourth Semester B.E. Semester End Examination, JULY SEPTEMBER 2022
SOFTWARE ENGINEERING

Time: 3 hrs.

Max. Marks :100

Instructions :1. Answer any FIVE Full Questions selecting at least ONE Question from Each Unit.

MODULE 1

L CO PO M

1a) As a Software developer you are asked to develop a software for UK-27 five-star hotel in Belgaum. The hotel is planning to develop an automated food preparation system. It is based on each customer requirement which will prepare exact quantity of food defined by restaurant for each dish and check the quality of food using aroma sensors (sensor used to sense the smell). Draw the general block diagram for the same. [3] [3] [3] [7]

1b) List and explain the Software Engineering (ACM/IEEE) Code of Ethics and Professional Practices. [2] [1] [8] [8]

1c) Differentiate between Generic software product and customized software product with relevant examples for each and also classify the following software as generic or customized product. [2] [4] [1] [5]

- a. Apollo pharmaceuticals system
- b. Weather monitoring system
- c. Income tax software
- d. Attendance management system for GIT

OR

2a) Explain Incremental development model with neat diagram. Discuss the benefits of this model as compared to Waterfall Model? [2] [4] [1] [10]

2b) With a neat diagram briefly explain the process of prototype development model and also list its benefits. [2] [3] [1] [10]

MODULE 2

3a) List and explain types of non-functional requirements. [2] [1] [1] [10]

3b) Explain the structure of a requirements document. [2] [1] [1] [10]

OR

4a) List and explain the different ways of writing a system requirement specification. [2] [1] [1] [10]

4b) Explain the advantages and disadvantages of specifying requirements using natural language. [2] [1] [2] [10]

MODULE 3

5a) Design a sequence diagram for Bill payment use case in Amazon e-commerce web application. [3] [2] [3] [10]

5b) Consider Computer E-mail system

- i) List any three actors. Explain the relevance of each actor.
- ii) List any four use cases summarize the purpose of each use case with a sentence.
- iii) Prepare use-case diagram for a computer email system.

[3] [2] [3] [10]

OR

- 6a. List and Explain Agile method Applicability. [2] [2] [1] [5]
- 6b. Analyze the online education software like Udemy /Coursera, NPTEL design 1 story card, 3-task card, 3-test card for Course registration process in online education software. [4] [3] [3] [8]
- 6c. List and explain any seven Extreme Programming practices. [2] [2] [1] [7]

MODULE 4

- 7a. Summarize the factors affecting software pricing. [2] [3] [1] [10]
- 7b. With a neat diagram explain project planning process. [2] [2] [1] [10]

OR

- 8a. With a neat diagram explain the project scheduling process. [2] [2] [1] [10]
- 8b. Summarize different COCOMO estimation models. [2] [3] [1] [10]

MODULE 5

- 9a. With a neat diagram explain the model of software testing process. [2] [2] [1] [8]
- 9b. Define Equivalence Class Partitioning.
- Scenario: A HDFC bank health care insurance wants to issue health care policy to the citizens of India who are 21 years and above and who are 70 years and below with an affordable premium.
- By using above scenario identify Valid and Invalid Partitions.
- 9c. Compare and contrast between Unit Testing and System Testing with relevant example for each. [4] [4] [3] [7]

[2] [4] [1] [5]

OR

- 10a. Subject allocation for Academic semester is done by the Head of the department of CSE through Intelligent subject allocator for staff Software. Analyze the given scenario & Design test cases by using Requirement Based Testing.
- Scenario: "For all the faculties of the CSE, department needs to allocate subjects based on Previous semester academic Feedback & Subject preference given by the faculty of their area of expertise. If the faculty has got less feedback in particular subject, then allocation of a subject shall produce warning message being issued by System"
- 10b. With a neat diagram explain all the six steps involved in Acceptance testing process. [3] [4] [3] [10]

[2] [1] [1] [10]

Third Semester B.E. SEE Semester Examination, Feb./April 2021-22

ಸಾಂಸ್ಕೃತಿಕ ಕನ್ನಡ

ಸಮಯ : 02 ಫಂಟೆ

ಗರಿಷ್ಠ ಅಂಶ : 50

ಸೂಚನೆ :- “ಭಾಗ-ಅ”ದಲ್ಲಿ ಎಲ್ಲ ಪ್ರಶ್ನೆಗಳು ಕಡ್ಡಾಯ.

“ಭಾಗ-ಬ”ದಲ್ಲಿ ಬೇಕಾದ 10 ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿರಿ.

“ಭಾಗ-ಕ್” ದಲ್ಲಿ ಬೇಕಾದ 01 ಪ್ರಶ್ನೆಗೆ ಬಿಷಪ್ತಿ ಬರೆಯಿರಿ.

“ಭಾಗ-ಲ್”

L	CO	PO	M
(2)	(1)	(10)	(20)

ಸರಿಯಾದ ಉತ್ತರವನ್ನು ಅಯ್ದು ಮಾಡಿ ಬರೆಯಿರಿ

1	ವೀರರು ಪ್ರಾಣತ್ವಾಗ ಮಾಡಿದ ಉಲ್ಲೇಖ ಈ ಕೆಲಗಿನವುಗಳಲ್ಲಿ ದೊರೆಯುವದು----- ಅ) ವೀರಗಲ್ಲು ಆ) ಮಾಸ್ತಿಗಲ್ಲು ಇ) ಕೋಳ್ಳಂಟೆ ಈ) ಹೇಳಬಿಡಿತ
2	ಕನಾಂಟಿಕ ಏಕೀಕರಣ ಹೋರಾಟ ಪ್ರಾರಂಭವಾದ ವರ್ಷ----- ಅ) 1965 ಆ) 1890 ಇ) 1908 ಈ) 1955
3	ಚೆನ್ನಮಲ್ಲಿಕಾಜುನ ಇದು -----ಇವರ ಪಚನದ ಅಂಕಿತವಾಗಿದೆ. ಅ) ಜೀಡರದಾಸಿಮಯ್ಯ ಆ) ಅಲ್ಲಮಹಿಂಧು ಇ) ಬಸವಣ್ಣ ಈ) ಅಕ್ಷಮಹಾದೇವಿ
4	ಕುರಡು ಕಾಂಚಾಣ ಕವನದ ಲೇಖಕರು. ಅ) ಮರಂದರದಾಸ ಆ) ಕನಕದಾಸ ಇ) ಡ. ರಾ. ಬೇಂದ್ರೆ ಈ) ಶಿವರಾಮಕಾರಂತ
5	ಕಾಗಿನಲೇ ಆದಿಕೇಶವರಾಯ -----ರ ಅಂಕಿತವಾಗಿದೆ. ಅ) ಮರಂದರದಾಸ ಆ) ಕನಕದಾಸ ಇ) ಮಹಿಪತಿದಾಸ ಈ) ಕಬೀರದಾಸ
6	ನಗನ್ವದು ಸಹಜ ಧರ್ಮ ; ನಗನ್ವಪದು ----- ಅ) ಅಶಿಶಯ ಧರ್ಮ ಆ) ಪರಧರ್ಮ ಇ) ನಿಜಧರ್ಮ ಈ) ಮನುಷ್ಯ ಧರ್ಮ
7	ಭಾರತದಲ್ಲಿ ತಯಾರಾದ ಬಟ್ಟೆಗಳ ಬಗ್ಗೆ ಉಲ್ಲೇಖಗಳನ್ನು ----- ಇವರು ತಮ್ಮ ಪ್ರೇರಣ ಕಥನಗಳಲ್ಲಿ ವಿವರಿಸಿದ್ದಾರೆ. ಅ) ಮೇಗಾಸ್ತಾನಿಸ ಮತ್ತುನ್ನಾಬೋ ಆ) ಟಿಕೆಯರು ಇ) ಅಪ್ಪನ್ನರು ಈ) ವೋಗಲರು
8	ಜಿ.ಎಸ್.ಎಸ್. -----ರಲ್ಲಿ ನಡೆದ ಅಭಿಭಾರತ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಸಂಪೂರ್ಣಾಳನ ಅಧ್ಯಕ್ಷರಾಗಿದ್ದರು. ಅ) 1992 ಆ) 1994 ಇ) 1998 ಈ) 2001
9	ಕುರಡು ಕಾಂಚಾಣವನ್ನು ----- ಕವನ ಸಂಕಲನದಿಂದ ಆಯ್ದುಕೊಳ್ಳಲಾಗಿದೆ ಅ) ನಾಕುಲಂತಿ ಆ) ನಾದಲೀಲೆ ಇ) ಸಹೀಗಿತೆ ಈ) ಒಲವೇ ಬದುಕು
10	ಕನಾಂಟಿಕ ಸಂಸ್ಕೃತಿ ಲೇಖನವನ್ನು ----- ಅ) ಅಂಬಿಕಾತನಯದತ್ತ ಆ) ಹೊಂದಿ. ಕೇಶವಮೂರ್ತಿ ಇ) ಹಂಪ ನಾಗರಾಜಯ್ಯ ಈ) ಅ.ನ.ಕೃ.
11	“ಕವಿರಾಜಮಾರ್ಗ” ಮಹಾಕಾವ್ಯ ರಚನೆಯಾದ ಕಾಲ ----- ಅ) 9ನೇ ಶತಮಾನ ಆ) 10ನೇ ಶತಮಾನ ಇ) 12ನೇ ಶತಮಾನ ಈ) 14ನೇ ಶತಮಾನ
12	ರಾಷ್ಟ್ರಕೆವಿ ಕುಪೆಂಪು ಇವರ -----ಮಹಾಕಾವ್ಯಕ್ಕೆ ಜ್ಞಾನಪೀಠ ಪ್ರಶಸ್ತಿ ದೊರೆತಿದೆ. ಅ) ಮಲೆಗಳಲ್ಲಿ ಮದುಮಗಳು ಆ) ಕಾನೂರು ಹೆಗ್ಗಡತಿ ಇ) ಶ್ರೀರಾಮಾಯಣ ದರ್ಶಣ ಈ) ವಚ್ಚೆಕಾಲಿ
13	ಕಂಪೂಟರ ಎಂಬ ಇಂಗ್ಲೀಷ ಪದವನ್ನು ಕನ್ನಡದಲ್ಲಿ ----- ಎಂದು ಕರೆಯುತ್ತಾರೆ. ಅ) ಜಂಗಮವಾಣಿ ಆ) ಗಣಕಯಂತ್ರ ಇ) ಬೆರಳಚ್ಚುಯಂತ್ರ ಈ) ಧ್ವನಿಮುದ್ರಣ
14	ಭಾಷಾ ಕೆಶಲ್ಲಗಳು ----- ಇವೆ. ಅ) 2 ಆ) 4 ಇ) 5 ಈ) 6

15	ಕನ್ನಡ ಭಾಷೆಯು ----- ಸಾಮಿರ ಪರಂಗಳು ಇತಿಹಾಸವನ್ನು ಹೊಂದಿದೆ. ಅ) 1000 ಆ) 1500 ಇ) 2000 ಈ) 3000
16	ನ್ಯಾಯಾಲಯಗಳ ತೀರ್ಪಿನ ಭಾಷೆ ಕನ್ನಡವೇ ಆಗಿರಬೇಕೆಂದು ----- ರಲ್ಲಿ ಅಜ್ಞ ಹೊರಡಿಸಲಾಯಿತು. ಅ) 1974 ಆ) 1979 ಇ) 1980 ಈ) 1950
17	ಸಾಮಿರ ಕೌಡಗಳ ಸುಟ್ಟು ತತ್ವ ಪದದ ಲೇಖಕರು ----- ಅ) ಮಹಾಂತ ಶಿವಯೋಗಿ ಆ) ಶಿಶುನಾಳ ಶರೀಫ ಇ) ಬನವಟ್ಟ ಈ) ಕಬೀರದಾಸರು
18	1955ರಲ್ಲಿ ಕನ್ನಡ ಸಾಹಿತ್ಯ ಪರಿಷತ್ತಿನ ಸಮ್ಮೇಳನ ನಡೆದ ಸ್ಥಳ ----- ಅ) ಬಳಾಧಿ ಆ) ರಾಯಚೂರು ಇ) ಧಾರವಾಡ ಈ) ಬೆಂಗಳೂರು
19	“ದಿವಾನಗಿರಿ” (ಪದವಿ) ಹುದ್ದೆ ಒಲಿದು ಬಂದದ್ದು ----- ಅ) ಮೂರ್ತಿರಾವ್ ಆ) ಎಂ. ವಿಶೇಷರಂಗನವರಿಗೆ ಇ) ಸರಸಿಂಹರಾಜರಿಗೆ ಈ) ಟಿಪ್ಪು ಸುಲ್ತಾನ್.
20	ಕನಾಟಕದಲ್ಲಿ ಆಡಳಿತ ಭಾಷೆ ----- ಆಗಿದೆ. ಅ) ಸಾಂಸ್ಕೃತ ಆ) ಪ್ರಾಕೃತ ಇ) ಕನ್ನಡ ಈ) ಕೊಂಕಣಿ

“ಭಾಗ-ಬ”

L CO PO M
(2) (1) (10) (20)

1	ಅಂಡಯ್ಯ ಕೆವಿ ಕನ್ನಡ ನಾಡನ್ನು ಕುರಿತು ಹೇಳಿದ ಮಾತುಗಳು ಯಾವವು?
2	ಕನ್ನಡನಾಡಿನ ವಿವಿಧ ಬಗೆಯ ಕರಕುಶಲ ಕಲೆಗಳು ಯಾವುವು? ಹೇಸರಿಸಿ.
3	ಆಡಳಿತ ಭಾಷೆಯ ಲಕ್ಷಣಗಳು ಕುರಿತು ಬರೆಯಿರಿ?
4	ಕನಾಟಕದ ಪ್ರಮುಖ ವಚನಕಾರರು ಯಾರು?
5	ಜೀಡರ ದಾಸಿಮಯ್ಯನ ಪ್ರಸ್ತುತ ವಚನದ ಆಶಯವೇನು?
6	ದೇವರು ಪ್ರತಿಯೊಂದನ್ನು ಜೋಡಾನ ಮಾಡತ್ತಾನೆ ಎಂಬುದನ್ನು ಕನಕದಾಸರು ಹೇಗೆ ವಿವರಿಸಿದ್ದಾರೆ?
7	ಯುವ ಹೀಗಿಗೆ ಕೆವಿ ಕೊಟ್ಟಿರುವ ಸಂದೇಶ ಯಾವದು?
8	ಜಾನಪದ ಸಾಹಿತ್ಯ ಎಂದರೇನು? ವಿವರಿಸಿ.
9	ಮಜ್ಜಿನಿಂದ ಮಜ್ಜಿಗೆ ಕವನದ ಆಶಯವನ್ನು ಸಂಕ್ಷಿತವಾಗಿ ವಿವರಿಸಿ.
10	ಅಕ್ಷಮಹಾದೇವಿಯವರ ಪ್ರಸ್ತುತ ವಚನದ ಆಶಯವೇನು?
11	ಆ ಮರ ಈ ಮರ ಕವನದ ಆಶಯವೇನು? ಸಂಕ್ಷಿತವಾಗಿ ವಿವರಿಸಿ.
12	ವಿಶೇಷರಂಗನವರು ತಮ್ಮ ತಾಯಿ ಮತ್ತು ಸೋದರಮಾವಸಿಗೆ ಹೇಳಿದ ಮಾತುಗಳು ಯಾವವು?

“ಭಾಗ-ಕ”

L CO PO M
(2) (1) (10) (10)

1	ಭಾರತೀಯ ಸಂಪ್ರದಾಯ ಮತ್ತು ಕರಕುಶಲಕಲೆ
2	ವಿಶೇಷರಂಗನವರ ಜೀವನ ಸಾಧನೆಗಳು.
3	ವಚನ ಸಾಹಿತ್ಯ ಮತ್ತು ಅದರ ಮಹತ್ವ.
4	ದಾಸ ಸಾಹಿತ್ಯ ಕುರಿತು ಬರೆಯಿರಿ.

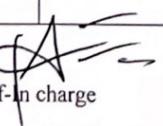
IA Test - II

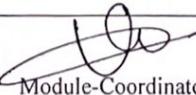
Course Title: Software Engineering
 Max. Marks: 25 marks Duration: 1 Hour

Code: 18CS45
 Date: 12/08/2022

Instructions: Answer any 5 complete questions and all carries equal marks.

Q. No.				[L]	[CO]	[PO]	[M]																									
1	Answer the following questions in one sentence, each question carries 1 mark. 1. Define Project planning. 2. Define Refactoring. 3. Define System Modelling. 4. Write Full form of UML 5. Write formula to find out "Effort cost" by using Algorithmic cost modeling technique.			[L1]	[CO1]	[PO1]	[5]																									
2	Explain different perspectives to develop various software design models			[L2]	[CO3]	[PO1]	[5]																									
3	For the set of tasks shown below draw the Project Scheduling using Activity BarChart (Assume 5 Days=1 Week)			[L3]	[CO4]	[PO3]	[5]																									
	<table border="1"> <thead> <tr> <th>Task</th> <th>Duration</th> <th>Dependencies</th> </tr> </thead> <tbody> <tr> <td>T1</td> <td>05</td> <td>-</td> </tr> <tr> <td>T2</td> <td>15</td> <td>-</td> </tr> <tr> <td>T3</td> <td>15</td> <td>T1(M1)</td> </tr> <tr> <td>T4</td> <td>10</td> <td>-</td> </tr> <tr> <td>T5</td> <td>10</td> <td>T2, T4(M2)</td> </tr> <tr> <td>T6</td> <td>05</td> <td>T1, T2(M3)</td> </tr> <tr> <td>T7</td> <td>20</td> <td>T1(M1)</td> </tr> <tr> <td>T8</td> <td>25</td> <td>T4(M4)</td> </tr> </tbody> </table>	Task	Duration	Dependencies	T1	05	-	T2	15	-	T3	15	T1(M1)	T4	10	-	T5	10	T2, T4(M2)	T6	05	T1, T2(M3)	T7	20	T1(M1)	T8	25	T4(M4)				
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T1	05	-																														
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T5	10	T2, T4(M2)																														
T6	05	T1, T2(M3)																														
T7	20	T1(M1)																														
T8	25	T4(M4)																														
4	Draw a Use-case diagram for <i>Flipkart E-commerce web application</i> , tabulate the same with at-least 02-actors & 4-use cases.			[L3]	[CO3]	[PO3]	[5]																									
5	Explain Agile Project Planning Process in XP (Extreme Programming) with neatdiagram. (Extreme Programming)			[L2]	[CO4]	[PO1]	[5]																									
6	List and Explain Agile method Applicability			[L2]	[CO3]	[PO1]	[5]																									
7	Assume that you have been assigned the task of developing <i>Academic data management system</i> (similar to dhi software at GIT). Analyze the above system and design 1-story card, 1-task card, 1-test card for any one of the specific functions related to <i>Academic data management system</i>			[L4]	[CO3]	[PO3]	[5]																									


 Staff-in charge


 Module-Coordinator


 IQAC-Members



KLS Gogte Institute of Technology, Belagavi
DEPARTMENT OF COMPUTER SCIENCE & ENGINEER



Code: 18CS43
Date: 27/08/22

Subject: Database Management System Semester: IV Div: A, B, C, D
Max. Marks: 25

- Instructions:
- Answers must be to the point and must be neatly written
 - Answer any 5 questions, all questions carry equal marks.

Q. No.	Questions	CO	BL	PO	M
1.	Explain any 5 advantages of using Database approach.	1	2	2	5
2.	Draw an ER diagram for a Hospital Management System.	2	4	3	5
3.	Explain the following Relational Operations with appropriate example, ii. SELECT ii. PROJECT	4	2	1	5
4.	Explain CREATE and ALTER DDL statements with syntax and example.	3	2	2	5
5.	Consider the company schema given below, EMP (EID, NAME, SSN, ADDR, SALARY, DNO) DEPT (DNO, DNAME, SSN) PROJECT (PNO, PNAME, PLOC, DNO) Write SQL Queries for the below, vi. Retrieve the name and address of employees who draw salary more than 50000. vii. Retrieve the name and salary of employees who work for DNO 3. viii. Retrieve the names of employees who work for 'Research' department. ix. Retrieve the project names of the projects controlled by DNO 1. x. Find out the number of employees of each department.	4	3	2	5
6.	Explain the following with appropriate example, ii. First normal form ii. Second normal form	2	3	2	5
7.	What is PL/SQL? Explain the usage of loops in PL/SQL with example.	3	4	2	5

Faculty In-charge

Module Coordinator

IQAC

Fourth Semester B.E. Semester End Examination, JULY SEPTEMBER 2022
DATABASE MANAGEMENT SYSTEM

Time: 3 hrs.

Max. Marks : 100

Instructions : 1. Answer any FIVE Full Questions selecting at least ONE Question from Each Unit.

MODULE 1**L CO PO M**

1a. Differentiate between a database and a DBMS. List and explain the important functions provided by a DBMS. [2] [1] [1] [5]

1b. With a neat diagram, explain the three-schema architecture. [2] [1] [1] [5]

1c. A music company has decided to store information on the musicians who perform for its albums in a database. The following describes the situation on which the company database must be modelled--.

1. Each musician who records at this company has an SSN, a name, an address, and a phone number.

2. Each instrument that is used in the songs has a name (e.g., guitar, synthesizer, flute) and a musical key.

3. Each album that is recorded on the company label has a title, a copyright date, a format (e.g., CD or MC), and an album identifier.

4. Each song recorded at the company has a title and an author.

5. Each musician may play several instruments and several musicians may play a given instrument.

6. Each album has a number of songs on it, but no song may appear in more than one album.

7. One or more musicians perform each song, and a musician may perform in a number of songs.

8. Each album has exactly one musician who acts as is producer. A musician may produce several albums.

Analyze the given situation and model the same conceptually using an ER diagram. Indicate all key and cardinality constraints and any assumptions that are made.

[4] [2] [2] [10]

OR

2a. Define data independence. Compare logical and physical data independence.

[2] [1] [1] [5]

2b. Can a collection of words that make up a page in a text book constitute a database? Explain why?

[2] [1] [1] [5]

2c. Consider the following scenario whose data requirements are summarized as follows: A salesperson may manage many other salespeople. A salesperson is managed by only one salespeople. A salesperson can be an agent for many customers. A customer is managed by one salespeople. A customer can place many orders. An order can be placed by one customer. An order lists many inventory items. An inventory item may be listed on many orders. An inventory item is assembled from many parts. A part may be assembled into many inventory items. Many employees assemble an inventory item from many parts. A supplier supplies many parts. A part may be supplied by many suppliers. Analyze the given scenario and model the same conceptually using an ER diagram. Indicate all key and cardinality constraints and any assumptions that are made.

[4] [2] [2] [10]

MODULE 2

3a. Demonstrate the various types of joins with suitable examples.

[2] [3] [1, 2] [10]

3b. Consider the following schema: [L3, CLO2, PO1]

Suppliers(sid: integer, sname: string, address: string)

Parts(pid: integer, pname: string, color: string)

Catalog(sid: integer, pid: integer, cost: real)

Write the relational algebra for the following queries

1. Find the names of suppliers who supply some red part.
2. Find the sids of suppliers who supply some red or green part.
3. Find the Supplier names of the suppliers who supply a red part that costs less than 100 dollars.
4. Find the pids of parts supplied by at least two different suppliers.
5. Find the sids of suppliers who supply every red part or supply every green part

[3] [3] [3] [10]

OR

4a. Consider the following relations containing airline flight information:

Flights(flno: integer, from: string, to: string, distance: integer, departs: time, arrives: time)

Aircraft(aid: integer, aname: string, cruisingrange: integer)

Certified(eid: integer, aid: integer, flno: integer)

Employees(eid: integer, ename: string, salary: integer)

Write the relational algebra for the following queries

1. Find the eids of pilots certified for some Boeing aircraft.
2. Find the names of pilots certified for some Boeing aircraft.
3. Find the names of aircrafts, flown by the pilot "Viaks"
4. Find the source and destination of flights flown by the pilot "Viaks"
5. Find the salaries of all employees who flight numbers are '2' and '6' and '9'.

[3] [3] [3] [10]

4b. Consider the two tables T1 and T2 shown below:

Table T1			Table T2			Identify the results of the following operations:					
P	Q	R	A	B	C		T1 U T2	T1 ∩ T2	2		
10	A	5	10	B	6		T1 ∩ T2	P=T2.A T2			
15	B	8	25	C	3		T1 ∩ T2	Q=T2.B T2			
25	A	6	10	B	5		T1 X T2				

[1] [3] [1, 2] [10]

MODULE 3

5a. Draw a state diagram and explain the typical states that a transaction goes through during execution.

[2] [5] [1] [5]

5b. Explain the desirable properties of transactions.

[2] [5] [1] [5]

5c. List and explain the Informal Design Guidelines for Relation Schemas.

[2] [3] [1] [10]

OR

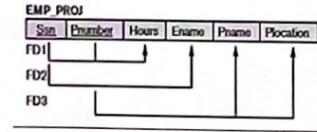
6a. Is the following relation in 1 NF? If not, explain and apply the various ways for converting the same into 1NF.

STUD_NO	STUD_NAME	STUD_PHONE	STUD_STATE	STUD_COUNTRY
1	RAM	9716271721, 9871717178	HARYANA	INDIA
2	RAM	9898297281	PUNJAB	INDIA
3	SURESH		PUNJAB	INDIA

[3] [3] [2] [10]

6b. Consider the following relation schema:

- i) Examine the given relation schema to identify and explain the highest normal form the given relation is in?
- ii) Apply normalization until you cannot decompose the relations further. State the reasons behind each decomposition.



[3] [3] [1] [10]

MODULE 4

7a. Consider the tables

STUDENT

RollNo	Name	City	DOB	CGPA	BranchId

DEPARTMENT

BrachId	Branch Name	HOD

BOOKS

BookId	BookName	Publisher	BranchName

ISSUED

BookId	RollNo	Date of Issue

(Assume suitable data already populated in all the tables)

For the above mentioned tables write DDL statements for.

1. Create ISSUED table
2. Update book name to "Operating Systems" with book id 100.
3. Modify the BOOKS table by adding a new attribute "author"
4. Delete a student whose RollNo=192
5. Delete a Publisher column from BOOKS

[3] [3] [3] [10]

7b. Consider the following schema: [L3, CLO2, PO1]

Suppliers(sid: integer, sname: string, address: string)

Parts(pid: integer, pname: string, color: string)

Catalog(sid: integer, pid: integer, cost: real)

Write the SQL for the following queries

1. Find the names of suppliers who supply some red part.
2. Find the sids of suppliers who supply some red or green part.
3. Find the Supplier names of the suppliers who supply a red part that costs less than 100 dollars.
4. Search all the suppliers located at the address "Belagavi"
5. Find the total number of suppliers, total number of parts and average and sum of the cost from the catalog.

[3] [3] [3] [10]

OR

8a. For the Table I- PRODUCTDETAILS, write the SQL statements for the queries:

1. Find the total number of products.
2. Find the product with minimum cost and maximum cost.
3. Find the average rate of products produced by company 'Com2'.
4. List the total quantity, total rate and total cost of all products
5. List the products with minimum quantity sold is greater than 3.

Table I. PRODUCTDETAILS

PRODUCT	COMPANY	QTY	RATE	COST
Item1	Com1	2	100	200
Item2	Com2	3	200	600
Item3	Com1	20	20	400
Item4	Com2	50	10	500
Item5	Com2	2	120	240

[3] [3] [3] [10]



- the book ids, publisher of “DBMS” or “OS” books.
4. Display all the information about various departments
5. Display all the information about all students.

STUDENT

RollNo	Name	City	DOB	CGPA	BranchId
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DEPARTMENT

BranchId	Branch Name	HOD
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BOOKS

BookId	BookName	Publisher	BranchName
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ISSUED

BookId	RollNo	Date of Issue	[3]	[3]	[4]	[10]
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MODULE 5

- 9a. Develop a PL/SQL function that computes and returns the maximum of two values. [3] [4] [2] [5]
9b. When would you use a PL/SQL loop? With syntax, explain the PL/SQL FOR and WHILE loops. [2] [4] [1] [5]
9c. Differentiate between a PL/SQL function and a procedure. Explain with syntax how a standalone function can be created in PL/SQL. [2] [4] [1] [10]

OR

- 10a. Develop a PL/SQL procedure takes two numbers using IN mode and returns their minimum using OUT parameters. [3] [4] [2] [5]
10b. Explain the general syntax for exception handling in PL/SQL. [2] [4] [1] [5]
10c. What is the difference between a function and procedure in PL/SQL? Explain with syntax how a procedure can be created in PL/SQL. [2] [4] [1] [10]

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