Department of Mechanical Engineering
Mid Test –II
(Common to CSD, CSM, CAI & IT Branches)

Subject: Optimization Techniques (20AME05)
Date : 02.06.2025
Year & Sem : II B.Tech & II Semester

Time: 10.00 AM- 12.00 AM
Max. Marks: 25
Branch: CSD/ CSM/ CAI/ IT

PART-A

ANSWER ALL THE QUESTIONS, EACH QUESTION CARRIES EQUAL MARKS **(5X2=10M)**

1. What is job sequencing in operations management? (Remembering CO3)
2. State the steps involved in Johnson's algorithm? (Remembering CO3)
3. Define a two-person zero-sum game with an example.? (Remembering CO 4)
4. What is the principle of dominance in game theory? (Remembering CO 4)
5. Differentiate between CPM and PERT techniques? (Understanding CO5)

PART-B

Answer any four of the following, each question carries equal marks **(3X5=15M)**

6a. Find makspan and idle time of Processing 5 Jobs Through 3 Machines Problem? (Understanding CO3)

Job	1	2	3	4	5
Machine-1	8	10	6	7	11
Machine-2	5	6	2	3	4
Machine-3	4	9	8	6	5

Or

6b. Find solution of Processing 2 Jobs Through m Machines Problem? (Understanding CO3)

Job-1	A	B	C	D	E
Machine-1	2	4	3	6	6
Job-2	C	A	D	E	B
Machine-2	4	6	3	3	6

7a) Solve following game using dominance method (Understanding CO4)

Player A \ Player B	B1	B2	B3	B4
A1	3	5	4	2
A2	5	6	2	4
A3	2	1	4	0
A4	3	3	5	2

7b) Find Solution of game theory problem (Understanding CO4)

Player A\Player B	B1	B2	B3	B4
A1	20	15	12	35
A2	25	14	8	10
A3	40	2	10	5
A4	-5	4	11	0

8a) Draw the network diagram, determine the critical path and total float time for the following project: [CO4 Evaluate] (Understanding CO5)

Activity	1-2	1-3	1-4	2-5	3-6	3-7	4-7	5-8	6-8	7-9	8-9
Time (Weeks)	5	6	3	5	7	10	4	2	5	6	4

Or

8b) Consider the following Project with following uncertain activity times. To find a) Critical path b) Project completion time c) probability to complete the project on or before 22 days. (Analysing CO5)

Activity	Precedence Activity	Optimistic Time	Most likely Time	*Pessimistic* Time
A	-	1	1	7
B	-	1	4	7
C	-	2	2	8
D	A	1	1	1
E	B	2	5	14
F	C	2	5	8
G	D,E	3	6	15

SRI VENKATESWARA COLLEGE OF ENGINEERING & TECHNOLOGY (AUTONOMOUS)

MID TEST – II

Year : II B.Tech II Semester | **Date :-03-06-2025 (FN)**

Branch: Common to[CSE, CSM,CSE(AI),CSE(BS), CSE(IOT) & IT]] | **Time : 2 hrs**

Subject: Probability and Statistics | **Max. Marks : 25**

PART-A

1. Answer all questions and all questions carries Two marks **5 x 2 = 10 M**

I. Define Binomial distribution. [CO3-Remember]

II. **If a random variable has a poisson distribution such that P(1) = P(2) then find λ.** [CO3-Under stand]

III. Define Null hypothesis and Alternative hypothesis. [CO4-Remember]

IV. Define Type-I error and Type –II error in testing hypothesis. [CO4-Remember]

V. Write briefly t- statistic test for a single mean. [CO5-Understand]

PART-B

Answer all questions and each question carries TEN marks. **3 x 10 = 30**

(Part-B is condemned to 5 marks)

2. a). The mean and variance of a binomial distribution are 4 and 4/3 respectively . [CO3-Apply]
find $P(X \geq 1)$ *and* $P(X \leq 2)$.

OR

b). A hospital switch board receives an average of 4 emergency calls in a 10 minute interval. What is the probability that (i) there are at most 2 emergency calls and (ii) there are 3 emergency calls in a 10 minute interval. [CO3-Apply]

3. a). In a random sample of 60 workers, the average time taken by them to get to work is 33.8 minutes with a standard deviation of 6.1minutes. Can we reject the null hypothesis $\mu = 32.6$ minutes in favour of alternative hypothesis $\mu > 32.6$ at 0.05 level of significance. [CO4-Apply]

OR

b). The means of two large samples of sizes 1000 and 2000 members are 67.5 inches and 68.0 inches respectively. Can the samples be regarded as drawn from the same population of S.D 2.5 inches. [CO4-Apply]

4. a). The blood Pressure of 5women before and after intake of a certain drug are given below: [CO5-Apply]

Before	110	120	125	132	125
After	120	118	125	136	121

Test whether there is significance change in blood pressure at 1% level of significance.

OR

b). Given the following contingency table for hair and eye colour. Find the value of x^2. Is there good association between the two? [CO5-Apply]

		Hair Colour			
		Fair	Brown	Black	Total
Eye Colour	Blue	15	5	20	40
	Grey	20	10	20	50
	Brown	25	15	20	60
	Total	60	30	60	150

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SRI VENKATESWARA COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous)
RVS NAGAR, CHITTOOR-517127.
Department of Computer science and Engineering (AI&ML)
Sessional Examinations-II, June 2025

Year & Sem: II B.Tech - II Semester **Time:** 10.00 AM to 12.00 NOON

Branches: Common to B.Tech – CSE (AI&ML, AI) **Max. Marks:** 25

Subject: MACHINE LEARNING [**23ACA02**] **Date:** 04/06/2025

PART-A

Answer all the questions. Each carry 2 Marks: **[5 x 2 = 10 M]**

1.	State Bayes Rule and its importance in classification.	[CO3]	/Remembering
2.	What is Bias Variance Trade-off?	[CO4]	/ Understanding
3.	Differentiate Linear SVM and Non-Linear SVM.	[CO4]	/ Analyze
4.	Define Linear Discriminants and its role.	[CO5]	/ Remembering
5.	Distinguish Hard and Soft clustering.	[CO5]	/ Analyze

PART-B

Answer all the questions. Each carry 5 Marks: **[3x10 = 30 M/2=15 M]**

6.a	*Describe in detail* Random Forest for both Regression and classification.	[CO3]	/Understanding
	OR		
6.b	Explain Naïve Bayes Classifier in detail.	[CO3]	/Understanding
7.a	Compare and Contrast Linear Regression and Logistic Regression.	[CO4]	/Analyze
	OR		
7.b	Elaborate Support Vector Machine with diagram and how the kernel tricks used in nonlinear SVM in detail.	[CO4]	/Apply
8.a	Discuss Rough clustering and Rough K means Clustering with example.	[CO5]	/Understanding
	OR		
8.b	What is clustering? Explain different categories of clustering in detail with example and applications.	[CO5]	/ Remembering

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SRI VENKATESWARA COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)

II Sessional Examination

Database Management Systems(23ACS12)

(Common to CSE, CSD, CSM, CSC, CAI, IT& CSBS)

Date: 05/06/2025 **Time: 10.00AM - 12.00PM**

Year/Sem: II/II **Total Marks: 25 Marks**

Part –A (5 * 2=10 Marks) (Answer all the questions)

1.What is a primary key? Explain with example. **(CO3/ Remembering)**

2. State the output of the SQL query given below: **(CO3/ understand)**

SELECT name FROM students WHERE marks > (SELECT AVG(marks) FROM students);

3.What is PL/SQL? Write the structure of a PL/SQL. **(CO4/Remembering)**

4.What is concurrent execution? Explain with an example. **(CO5 / Remembering)**

5.Explain serializability with example. **(CO5 / Remembering)**

Part –B (3* 5=15Marks) (Answer all the questions)

6.a)Write the syntax and examples for the CREATE, ALTER, and DROP command. Explain different types of **joins** in SQL with examples. **(CO3/Remember)**

(OR)

6. b)Consider a sample schema with STUDENT(student_id, name, email, department),COURSE(course_id,course_name, credits) and ENROLLMENT(enroll_id, student_id, course_id, marks). Foreign Keys: student_id → STUDENT(student_id) and course_id → COURSE(course_id) Write SQL queries for:

i. Retrieving student names enrolled in "DBMS"
ii. Calculating average marks per course
iii. Displaying course names with no enrolment **(CO3/Apply)**

7. a). Explain the cursor and triggers in PL/SQL with examples**(CO4/Remember)**

(OR)

7.b) Explain **normalization** and describe 1NF, 2NF, and 3NF with suitable examples.

(CO4/ Remember)

8.a).What is transaction? Explain different transaction states with a neat diagram. Explain ACID properties of transaction with examples. **(CO5/ Remember)**

(OR)

8.b)What is deadlock in transaction? Explain the deadlock handling methods with examples.

(CO5/ Remember)

SRI VENKATESWARA COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous)

II B-Tech - II Semester - II MID Examination, June- 2025

Department of CSE (AI),CSE (AI& ML) CSE(DS)

Subject code & Name:Digital Logic & computer Organization and Interfacing [23AEC06]

Max Marks: 25 M

Date: 06-06-2025 **Time:** 2 Hours

PART – A

Answer all questions. Each question carries 2 marks **(5 x 2 = 10 Marks)**

1.	How do you perform Subtraction of Signed Numbers with examples.	[CO3 Remember]
2.	Write short notes on Hardwired Control.	[CO3 Remember]
3	Write down the applications of Cache memory.	[CO4 Analyze]
4	Write down the Memory Management Requirements.	[CO4 Analyze]
5	How do access various I/O devices.	[CO3 Apply]

PART – B

Answer all questions. Each question carries 5 marks **(3 x 5 = 15 Marks)**

6(A)	With neat sketch explain the Fast Adders.	[CO3 Understand]
	(OR)	
6(B)	Illustrate Fast Multiplication and Multiple-Bus Organization.	[CO3 Understand]
7(A)	Write down the difference between RAM and ROM with examples.	[CO4 Remember]
	(OR)	
7(B)	Describe Virtual memories and Secondary storages	[CO4 Analyze]
8(A)	Explain in detail about Interrupts and Processor examples.	[CO5 Apply]
	(OR)	
8(B)	With neat sketch explain the Direct Memory Access.	[CO5 Analyze]

SRI VENKATESWARA COLLEGE OF ENGINEERING AND TECHNOLOGY, CHITTOOR

(Autonomous)
Common to all Branches

Sub: Design Thinking and Innovation **Time:** 10.00 am to 12.00pm
Branch: II B. Tech II SEM **MID TEST-II** **Date:** 09-06-2025
(Marks: 30)

PART-A

Answer all the questions. All questions carry equal marks (5x2=10)

1. Define Innovation. (Unit III Co3 Remembering)
2. What is Creativity? (Unit III Co3 Remembering)
3. Define Product value (Unit IV Co4 Remembering)
4. What is Product specification? (Unit IV Co4 Remembering)
5. Define Standardization. (Unit V Co5 Remembering)

PART-B

Answer all the questions. All questions carry equal marks (4x5=20)

6a). Why are creativity and Innovation considered essential for organization success in the modern business environment. (Unit III Co5 Understanding)

OR

6b). Explain the role of cross functional teams in the innovation process. (Unit IV Co4 Understanding)

7a). Why it is important to measure the impact of creativity in organizations? (Unit III Co5 Understanding)

OR

7b). How does design thinking contribute to the process of creating successful product design? (Unit IV Co3 Understanding)

8a). Explain the main stages involved in product planning? (Unit IV Co3 Understanding)

OR

8b) Explain different types of product strategies. (Unit IV Co3 Understanding)

9a) Identify common business challenges that can be effectively addressed using design thinking in detail. (Unit V Co6 Understanding)

OR

9b). Explain some common corporate needs that can be addressed using design thinking . (Unit V Co6 Understanding)