R19

III B.TECH I SEM

SUPPLEMENTARY EXAMINATIONS

MARCH 2025

NEC NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

III B.Tech I Semester Supple. Examinations, March-2025

Sub Code: 19BIT5TH02 **WEB DEVELOPMENT USING MEAN STACK**

Time: 3 hours (IT) Max. Marks: 60

Note: Answer All FIVE Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No		Questions	KL	CO	M
1		Unit-I			
	a	i) Illustrate pipes with examples.	K2	CO1	6M
		ii) Explain Angular architecture in detail.	K4	CO1	6M
		OR			
	b	Illustrate Services and Dependency Injection with example program.	K4	CO1	12M
2		Unit-II			
	a	Prepare Http Client Program to communicate with the server with an example program.	K3	CO2	12M
		OR			
	b	Explain Routing and Navigation with an example program.	K4	CO2	12M
3		Unit-III			
	a	i) Summarize Node.js data types in detail.	K2	CO3	6M
		ii) Explain what is the use of NPM?	K2	CO3	6M
		OR			
	b	Implement a Node.js webserver and explain.	K3	CO3	12M
4		Unit-IV			
	a	i) Explain Node.js File System.	K4	CO3	6M
		ii) Explain how to use fs.open().	K4	CO3	6M
		OR			
	b	i) Summarize what is Express.js? Explain the advantages of Express.js.	K2	CO4	6M
		ii) Explain how to create an Express.js Server.	K4	CO4	6M
5		Unit-V			
	a	i) Explain how to create a collection in MongoDB database and insert multiple documents at a time.	K4	CO5	12M
		OR			
	b	i) Explain how to write the query for update operation in MongoDB Collection.	K4	CO5	6M
		ii)Explain how to write the query for delete operation in MongoDB Collection.	K4	CO5	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M:Marks

***

NEC NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

Subject Code: 19BIT5TH03

III B.Tech. - I Semester Supple Examinations, March-2025

DESIGN AND ANALYSIS OF ALGORITHMS

(IT)

Time: 3 hours **Max. Marks: 60**

Note: Answer All FIVE Questions. All Questions Carry Equal Marks (5 X 12 =60M)

QNo		Questions	KL	CO	Marks
		Unit-I			
1	a	Write an algorithm for linear search and analyze the algorithm for its time complexity.	2	1	6M
		Explain the process of designing an algorithm. Give characteristics of an algorithm.	2	1	6M
		OR			
	b	Explain in detail about asymptotic notations.	2	1	6M
		Calculate the time complexity of matrix multiplication using step count method	2	1	6M
		Unit-II			
2	a	Give the general procedure of divide and conquer method	2	2	6M
		Simulate Quick sort algorithm for the following example 25,36,12,4,5,16,58,54,24,16,9,65,78	3	2	6M
		OR			
	b	Explain Strassen's matrix multiplication and its time complexity	2	2	12M
		Unit-III			
3	a	Explain job sequencing with deadlines with following example n=5, (p1,p2,...)=(20,15,10,5,1) and (d1,d2,...)=(2,2,1,3,3).	3	3	6M
		Find the optimal solution of the Knapsack instance n= 7, M=20, (p1, p2,.....p7) = (8,5,6,7,6,12,3) and (w1,w2,... w7)=(2,10,8,7,6,4,11).	3	3	6M
		OR			
	b	Apply greedy algorithm to generate single-source shortest path with an example graph	4	3	6M
		Explain the kruskal's algorithm with example	3	3	6M
		Unit-IV			
4	a	Let n=4 and (a1,a2,a3,a4) Construct optimal binary search for (a1, a2, a3, a4) = (do, if, int,while), p(1 : 4) = (3,3,1,1) q(0 : 4)= (2,3,1,1,1)	4	4	12M
		OR			
	b	Explain Matrix chain multiplication in dynamic programming.	2	4	6M
		Compare and Contrast greedy method and dynamic programming	2	4	6M
		Unit-V			
5	a	Give the solution to the 8 queen's problems using backtracking	3	5	6M
		Draw the portion of state space tree generated by LCBB for the following instance of 0/1 knapsack n=5, M=12, (p1, ...p5) = (10,15,6,8,4) (w1,.....w5)=(4,6,3,4,2).	3	5	6M
		OR			
	b	Draw the portion of state space tree generated by FIFOBB for the following instance of 0/1 knapsack n= 5, M=12, (p1, ...p5) = (10,15,6,8,4) (w1,. ... w5)=(4,6,3,4,2)	3	6	12M

NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

III B.Tech I Semester Supple. Examinations, March-2025

Sub Code: 19BIT5TH05 **CRYPTOGRAPHY AND NETWORK SECURITY**

Time: 3 hours (IT) Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No		Questions	KL	CO	M
1		Unit-I			
	a	i) Explain in detail about security services	K2	CO1	6M
		ii) Differentiate monoalphabetic and polyalphabetic ciphers	K3	CO2	6M
		OR			
	b	i) Differentiate active attacks and passive attacks	K3	CO1	6M
		ii) Explain in detail the model for network security	K2	CO1	6M
2		Unit-II			
	a	Summarize the working concept of DES algorithm with a neat sketch, also explain in detail the key generation process, round function and complex function in one round of DES	K4	CO2	12M
		OR			
	b	i) Differentiate OFB and CFB modes of operation	K3	CO1	6M
		ii) Explain in detail about fiestal cipher structure	K2	CO2	6M
3		Unit-III			
	a	i) Explain different mechanisms of finding the Euler's Totient Function of a given number with suitable examples	K2	CO3	6M
		ii) Explain RSA algorithm with suitable example	K2	CO3	6M
		OR			
	b	i) Write short notes on Chinese Remainder Theorem with relevant example	K1	CO3	6M
		ii) Explain Fermat's theorem in detail with example	K2	CO3	6M
4		Unit-IV			
	a	i) Compare and contrast CMAC and HMAC	K4	CO4	6M
		ii) List and explain the requirements of a Hash function	K2	CO4	6M
		OR			
	b	Define DSS and Explain in detail the working procedure of DSA	K2	CO4	12M
5		Unit-V			
	a	i) Explain the functionality of Authentication server and Ticket Granting server in Kerberos v4	K2	CO5	6M
		ii) Write short notes on TLS	K1	CO5	6M
		OR			
	b	i) Explain in detail about the layers of SSL architecture	K2	CO5	6M
		ii) List and explain the different types of Firewalls	K2	CO6	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M:Marks

***

NAKASAKAPETA

NEC ENGINEERING COLLEGE

(AUTONOMOUS)

III B.Tech I Semester Supple. Examinations, March-2025

Sub Code: 19BCI5TH06 DATA WAREHOUSING AND DATA MINING

Time: 3 hours (CSE,IT) Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No		Questions	KL	CO	M
1		Unit-I			
	a	i) Discuss the specific challenges in Data Mining	K2	1	6M
		ii) Illustrate the General Characteristics of Data Sets and grouping of data sets	K2	1	6M
		OR			
	b	i) Discuss about the different attribute types and their operations.	K2	1	6M
		ii) Does Missing Values impact your calculations? Discuss in brief how they can be delt in Real time applications	K2	1	6M
2		Unit-II1			
	a	Illusrate about following Data Preprocessing Strategies: 1. Sampling 2. Feature subset selection 3. Discretization and binarization	K2	2	12M
		OR			
	b	i) Is the Measure of Similarity and Dissimilarity needed data mining Justify?	K2	2	6M
		ii) Discuss in brief about a)Measures of Location b)Measures of Spread	K2	2	6M
3		Unit-III			
	a	i) Discuss about Stars, Snowflakes of Multidimensional data models	K2	3	6M
		ii) Compare OLTP and OLAP Systems	K2	3	6M
		OR			
	b	i) Explain about three-tier data warehousing architecture with a neat diagram	K2	3	6M
		ii) Discuss different OLAP operations on multidimensional data	K2	3	6M
4		Unit-IV			
	a	i) Differentiate between supervised and unsupervised learning and discuss about the steps of classification	K4	4	6M
		ii) Discuss about the attribute selection measures	K4	4	6M
		OR			
	b	i) write the algorithm and method for generating a decision tree.	K4	4	6M
		ii) Discuss about the following a)Overfitting b)Cross validation	K4	4	6M
5		Unit-V			
	a	i) Illustrate the frequent Item set generation with minimum support 2 for the following AllElectronic data	K4	5	6M

Transactional Data for an All Electronic

TID	List of item ID's
T100	I1, I2, I5
T200	I2, I4
T300	I2, I3
T400	I1, I2, I4
T500	I1, I3

		T600	I2, I3			
		T700	I1, I3			
		T800	I1, I2, I3, I5			
		T900	I1, I2, I3			
		ii)Discuss about Pattern Growth approach of mining frequent items			K4	5	6M
		OR					
	b	i) Discuss the typical requirement of clustering in data mining			K4	5	6M
		ii) Discuss about the basic methods of clustering and their characteristics			K4	5	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M:Marks

***

NARASARAOPETA ENGINEERING COLLEGE
(AUTONOMOUS)

III B.Tech I Semester Supple. Examinations, March-2025

Sub Code: 19BCC5OE10 **OOPS THROUGH JAVA**

Time: 3 hours (ME) Max. Marks: 60

Note: Answer All **FIVE** Questions.

All Questions Carry Equal Marks (5 X 12 = 60M)

Q.No		Questions	KL	CO	M
1		Unit-I			
	a	i) Explain History and Evolution of Java?	K2	1	6M
		ii) List and Explain Java Buzz Words?	K1	1	6M
		OR			
	b	i) Explain Java security and Illustrate the Portability?	K4	1	6M
		ii) Explain the Structure of Java program	K3	1	6M
2		Unit-II			
	a	Define Data Type. Give the declaration of variable in Java. Write the Rules	K3	2	12 M
		OR			
	b	i) Define a Class, Method and Object. Write the syntax to define these in java.	K3	2	6M
		ii) What is a Constructor? Classify the types of Constructors in Java?	K4	2	6M
3		Unit-III			
	a	i) Write about the super keyword in java with example.	K4	3	6M
		ii) Distinguish Method Overriding and Method Overloading	K4	3	6M
		OR			
	b	i) What is a package? How to create user defined package in java with example.	K1	3	6M
		ii) What is an interface? Rules to create an interface in java with example.	K1	3	6M
4		Unit-IV			
	a	i) Explain about try, throw and catch statements.	K3	4	6M
		ii) What are Java's Built-in Exceptions? Write the importance of finally block.	K4	4	6M
		OR			
	b	i) Differentiate between AWT and SWING?	K4	4	6M
		ii) State the features of swing package in java	K1	4	6M
5		Unit-V			
	a	i) What is event handling in Java with an example?	K2	5	6M
		ii) Which package contains all the classes and methods required for event handling in Java?	K3	5	6M
		OR			
	b	i) Which listener handles all list-related events?	K4	5	6M
		ii) What is the purpose of the ActionEvent class?	K3	5	6M

KL: Blooms Taxonomy Knowledge Level CO: Course Outcome M:Marks

***