

M.Tech (Computer science and engineering)

Mathematical Foundation of Computer Applications (U23MAT103)

Class I A Section

Date: 05.11.2024

Time: 1.40 Min

Max. Marks- 50

		Marks	B. L	CO's
PART A (6 Marks)				
Answer any three Questions				
Q.1	Find the Eigen values of A^{-1} if $A = \begin{bmatrix} 4 & 1 \\ 3 & 2 \end{bmatrix}$	2	1	CO1
Q.2	Find the product of the eigen values of the matrix $\begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 2 \\ 1 & 2 & 3 \end{bmatrix}$	2	1	CO1
Q.3	State Cayley-Hamilton theorem.	2	2	CO1
Q.4	Define venn diagram	2	1	CO2
Q.5	Define onto function with example	2	1	CO2
PART B (44 Marks)				
Answer any four Questions				
Q.11	By investigating the rank of relevant matrices show that the se of equations posses one parameter family of solution. $2x - y - z = 2; x + 2y + z = 2; 4x - 7y - 5z = 2$	11	3	CO1
Q.12	Verify Cayley – Hamilton theorem for the following matrix $A = \begin{bmatrix} 1 & 2 & -2 \\ 1 & 1 & 1 \\ 1 & 3 & 1 \end{bmatrix}$ and find the inverse	11	2	CO1
Q.13	Find the eigen values and eigen vector of the following $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 1 \\ 1 & 4 & 2 \end{bmatrix}$	11	2	CO1
Q.14	For what values of a and b do the equations $x+3y+5z$, $x+2y+3z$, $2x+5y+az=b$ have (i) unique solution (ii) infinite solution (iii) no solution	11	2	CO2
Q.15	Explain briefly about operation on sets	11	3	CO2



M.Tech. (Department of Computer Science and Engineering) (I-Year/ I-Semester)
Continuous Assessment Test-1, November 2024
Advanced Data Structures and Algorithms (P23CSTD018)

Day and Date: 06.11.2024 & Tuesday..
Time: 9.00 am to 10.40 am

Max. Marks- 40

Instructions:

IMP: Verify that you have received question paper with correct course, code, branch etc.

- i) All questions are compulsory.
- ii) Figure to the right indicate full marks.
- iii) Assume suitable data wherever necessary.

Course Outcomes:

CO1 -

CO2 -

Knowledge Level: K1-Remember, K2-Understand, K3-Apply, K4-Analyze & K5-Evaluate

		Marks	G.L	CO's
PART A (5 x 2 = 10 Marks)				
Answer all the Questions				
Q.1	Describe for memory representations of Multidimensional Array.	2	1	CO1
Q.2	Write an short notes on asymptotic notation with an example	2	1	CO1
Q.3	Describe about time space tradeoff	2	1	CO1
Q.4	Briefly describe a binary search tree and provide a real-world application scenario.	2	1	CO2
Q.5	Discuss the advantages and disadvantages of AVL trees.	2	1	CO2
PART B (3 x 10 = 30 Marks)				
Answer any THREE Questions				
Q.6	Explain mathematical induction with merits and demerits. Prove that For all $n \geq 1$, prove that, $1.2.3 + 2.3.4 + 3.4.5 + \dots + n(n+1)(n+2) = (n(n+1)(n+2)(n+3))/4$	10	3	CO1
Q.7	Define recurrence equations. Explain various methods to solve recurrence equations with examples.	10	2	CO1
Q.8	Write detailed notes on: i) Hash tables ii) Hash functions	10	1	CO2
Q.9	Discuss topological sorting and describe sorting algorithms that operate in linear time.	10	1	CO2

****ALL THE BEST****



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M.Tech. (Department of Computer Science and Engineering)
Continuous Assessment Test-1, November-2024
Speech Language Processing (P23CSTD02)

Day and Date: 07-11-2024

Time: 9.00am to 10.40 am

Year/Sem: I/I

Max. Marks- 40

Instructions:

IMP: Verify that you have received question paper with correct course, code, branch etc.

- All questions are compulsory.
- Figure to the right indicates full marks.
- Assume suitable data wherever necessary.

Course Outcomes:

CO1 – Understand the basics of NLP. (K3)

CO2 – Apply the basic ML and DL techniques for NLP. (K3)

Knowledge Level: K1–Remember, K2–Understand, K3–Apply, K4–Analyze & K5–Evaluate

		Marks	B.L	C
PART A (5 x 2 =10 Marks)				
Answer all the Questions				
Q.1	Define NLP.	2	K2	C
Q.2	Describe Tokenization with example.	2	K2	C
Q.3	Discuss the term Feature Engineering.	2	K2	C
Q.4	Differentiate between Supervised and Unsupervised Learning.	2	K2	C
Q.5	State the term RNN with example.	2	K2	C
PART B (3 x 10 =30 Marks)				
Answer any TWO Questions				
Q.6	Explain the Phases of NLP in detail.	10	K3	C
Q.7	Explain CNN for NLP in a detail manner with a real time example.	10	K3	C
Q.8	Elaborate the Long Short-Term Memory for NLP in detail.	10	K3	C



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M.Tech. (Department of Computer Science and Engineering)
Continuous Assessment Test-1, November-2024
Research Methodology and IPR (P2JHSTC01)

Day and Date: 08-11-2024

Time: 9.00am to 10.40 am

Year/Sem: I/I

Max. Marks- 40

Instructions:

IMP: Verify that you have received question paper with correct course, code, branch etc.

- All questions are compulsory.
- Figure to the right indicates full marks.
- Assume suitable data wherever necessary.

Course Outcomes:

CO1 – Gain Knowledge to formulate the research problem. (K2)

CO2 – Understand the concepts to carry out the literature review, ethics and research analysis. (K2)

Knowledge Level: K1–Remember, K2–Understand, K3–Apply, K4–Analyze & K5–Evaluate

		Marks	B.L	CO's
PART A (5 x 2 =10 Marks)				
Answer all the Questions				
Q.1	Specify the Data Collection techniques.	2	K2	CO1
Q.2	How to define a Research Objectives	2	K2	CO1
Q.3	Write down the common errors in research selections.	2	K2	CO2
Q.4	List out the types of Plagiarism	2	K1	CO2
Q.5	Discuss the Role of Analysis in literature review	2	K2	CO2
PART B (3 x 10 =30 Marks)				
Answer any TWO Questions				
Q.6	Outline the various characteristics of good research problem.	10	K3	CO1
Q.7	Discuss about the types of error in selecting research problem.	10	K2	CO1
Q.8	Exemplify the effective literature study approaches.	10	K2	CO2
Q.9	Brief about the scope and objectives in writing a research proposal.	10	K2	CO2

Subject Incharge

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M.Tech. (Department of Computer Science and Engineering) (I Year/ I Semester)
Continuous Assessment Test-01, Nov-2024
Cloud and Big Data Analytics (P23CST102)

Date and Day: 11-11-24 / Monday

Time: 9.00 to 10.40 am

Max. Marks- 40

CO1: Understand the core concepts of the cloud computing paradigm.

CO2: Apply fundamental concepts in cloud infrastructures

Instructions:

IMP: Verify that you have received question paper with correct course, code, branch etc.

i) All questions are compulsory.

ii) Figure to the right indicates full marks.

iii) Assume suitable data wherever necessary.

Q.No	PART A (5 x 2 =10 Marks)	Marks	B.L	CO's
Answer all the Questions				
Q.1	Name the three main service models in cloud computing.	2	K1	CO1
Q.2	What is IaaS?	2	K2	CO1
Q.3	Define hypervisor in server virtualization.	2	K2	CO1
Q.4	What is a blade server?	2	K2	CO2
Q.5	Name two common challenges in data center management.	2	K2	CO2
PART B (3 x 10 =30 Marks)				
Answer any three Questions				
Q.6	Explain the three main types of cloud computing and provide examples of each.	10	K2	CO1
Q.7	Explain how server virtualization works and its benefits in cloud computing.	10	K3	CO1
Q.8	Describe the role of BPEL in automating business processes in cloud environments.	10	K3	CO2
Q.9	Explain Service-Oriented Architecture (SOA) and its role in cloud computing.	10	K2	CO2