



# CITY ENGINEERING COLLEGE

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BelagaviDoddakallasandra, Off Kanakapura Main Road,  
Next to Gokulam Apartment, Bangalore - 560 062.



## Department of Artificial Intelligence & Machine Learning

Ref.No:CEC/AIML/C2/ACY-2023-24/IAT-III/01

### Circular

This is to notify that 3<sup>rd</sup> Internals of 8<sup>th</sup> semester will be conducted on 18/04/2024

10.30am-12.00pm -18AI81-Neural Networks and Deep Learning

2.30pm-4.00pm-18AI824- Modern Information Retrieval

*Vagdevi*  
HOD  
Dept of Artificial Intelligence & Machine Learning  
CITY ENGINEERING COLLEGE  
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## Department of Artificial Intelligence & Machine Learning

### FACULTY DUTY ALLOTMENT

INTERNAL ASSESSMENT -3 SEM-8th			
Sl.No	NAME OF THE FACULTY	18-04-2024 Thursday	18-04-2024 Thursday
		10.30am-12:00PM	2:30PM-4:00PM
1	Ms.Vindhya	-	C201

  
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## Department of Artificial Intelligence & Machine Learning

### 8<sup>th</sup> semester 3<sup>rd</sup> Internal Time Table

<b>18/04/2024</b>	<b>10.30am-12.00pm</b>	<b>2.30pm-4.00pm</b>
<b>Subject Code</b>	<b>18AI81</b>	<b>18AI824</b>

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## Department Of Artificial Intelligence & Machine Learning

### 8th Semester 3rd IA Attendance

18/04/2024

SL. NO	USN	NAME OF THE STUDENT	Signature
1	1CE20AI001	ABDUL FAHEEM	<i>Abdul Faheem</i>
2	1CE20AI002	HAJIRA AHMED	<i>Hajira</i>
3	1CE20AI003	KEDAR JOSHI	<i>Kedar</i>
4	1CE20AI004	KOKILA K R	<i>Kokila</i>
5	1CE20AI006	SHARON ZIPPORAH SEBASTIAN	<i>Sharon</i>
6	1CE20AI007	SHARONA SAM	<i>Sharon Sam</i>
7	1CE20AI008	SUHAS GAJANANA	<i>Suhas</i>
8	1CE20AI009	SYEDA ALIYAH BAKSHI	<i>Syeda Aliyah</i>

*Skandan*

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**Department of Artificial Intelligence and Machine Learning**  
**INTERNAL TEST 2**

Course: Modern Information Retrieval  
Max. Marks : 50

Course Code: 18AI824  
Date: 18/04/2024

Sem : VIII Sem  
Time: 2:30 PM to 4 PM

Answer any five full questions choosing any one from each part.

Q #	Question	Marks	CO	BT
PART A				
1	What is a query language in the context of information retrieval? Briefly discuss the key components of a query language for information retrieval systems.	10 M	CO3	L1
OR				
2	Illustrate Word Sense Disambiguation (WSD)? With an example, explain the various techniques to handle WSD	10 M	CO3	L2
PART B				
3	Explain i) 4 types of keyword-based querying ii) Single-word queries, context queries, and Boolean queries with examples	10 M	CO3	L2
OR				
4	Explain the three uses of user relevance feedback and differentiate between Global and local analysis.	10 M	CO3	L2
OR				
5	Classify 3 main structural queries and explain in detail about fixed structure and hierarchical structure	10 M	CO3	L2
OR				
6	Explain Query expansion system reweighting for the vector model & term reweighting for the probability model.	10 M	CO3	L2
PART D				
7	What are text operations? Explain with a neat diagram document the preprocessing stages.	10 M	CO4	L1
OR				
8	Explain brief about Query expansion based on similarity thesaurus and explain pattern-matching words, prefixes, suffixes, substrings, and regular expressions.	10 M	CO4	L2
PART E				
9	i) What is an Index and list how the efficiency of an Information retrieval System depends on indexing. ii) With a neat diagram example explain in detail the Inverted Index(Basic)	10 M	CO4	L2
OR				
10	Outline with a neat diagram example explain in detail the Full Inverted Index	10 M	CO4	L2

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*Vagdevi*  
Subject Teacher

*Vagdevi*  
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CITY ENGINEERING COLLEGE  
DEPARTMENT OF ARTIFICIAL INTELLIGENCE  
AND MACHINE LEARNING ENGINEERING

SCHEME FOR EVALUATION

CIE TEST -I

SEMESTER & SECTION: VIII Modern Information Retrieval

Subject Code: 18AI824

Q. No	Details of the Answer	Marks Distribution	Total marks
1	<p>What is a query language in the context of information retrieval? Briefly discuss the key components of a query language for information retrieval systems.</p> <ul style="list-style-type: none"><li>• Text retrieval systems can answer various types of queries depending on the retrieval model adopted.</li><li>• Full-text systems may not answer the same queries as those based on keyword ranking or hypertext models.</li><li>• Some query languages are not intended for final users and can be used by higher-level software packages to query databases or CD-ROM archives.</li><li>• Most query languages use content and syntax to find relevant documents, but may fail to find relevant answers. Techniques to enhance query usefulness include expanding words to synonyms, using a thesaurus, and removing stopwords.</li><li>• The retrieval unit, which can be a file, document, web page, paragraph, or other structural unit, is another aspect of the system's approach.</li></ul>	Each 5 marks	10

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2.	<p><b>Illustrate Word Sense Disambiguation (WSD)? With an example, explain the various techniques to handle WSD</b></p> <p>Word Sense Disambiguation (WSD) is the process of determining the correct meaning or sense of a word based on the context in which it appears. In the context of Information Retrieval (IR), WSD is important because it helps improve the accuracy of search results by ensuring that the retrieved documents are relevant to the user's query.</p> <ul style="list-style-type: none"> <li>● Machine Translation</li> <li>● Information Retrieval (IR)</li> <li>● Text Mining and Information Extraction (IE)</li> <li>● Lexicography - WSD</li> </ul>	<p>Definition 2 marks</p> <p>Explanation 8 marks</p>	<p>10 marks</p>
3.	<p><b>Explain i) 4 types of keyword-based querying ii) Single-word queries, context queries, and Boolean queries with examples</b></p> <p><b>Single-word queries</b></p> <p>Text retrieval systems typically search for words, which are long sequences of letters. Most models allow us to view text in this perspective and search words, with some models also allowing for internal division into letters.</p> <p>The set of words retrieved can be used for word-treating purposes, such as thesaurus expansion or ranking purposes. Words carry significant meaning in natural language, so many models are structured around words.</p> <p>Word queries result in documents containing at least one word of the query, and ranked based on similarity to the query. Common statistics on word occurrences are used to support ranking.</p> <p><b>Context queries</b></p> <p>Phrase is a sequence of single-word queries. An occurrence of the phrase is a sequence of words. For instance, it is possible to search for the word 'enhance,' and then for the word 'retrieval.'</p>	<p>Each 2 marks and Examples 2 marks</p>	<p>10 marks</p>

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	<p><b>Boolean queries</b> The oldest (and still heavily used) form of combining keyword queries is to use Boolean operators. A Boolean query has a syntax composed of atoms (i.e., basic queries) that retrieve documents, and of Boolean operators that work on their operands (which are sets of documents) and deliver sets of documents.</p> <p><b>Explain the three uses of user relevance feedback and differentiate between Global and local analysis.</b></p> <p>4. <b>Differentiation between Global and local</b></p> <p>The <b>main idea</b> consists of selecting important terms, or expressions, attached to the documents that have been identified as <b>relevant</b> by the user, and of enhancing the importance of <b>these</b> terms in a new query formulation.</p> <p>(a) <b>expand queries</b> with the vector model, (b) reweight query terms with the <b>probabilistic</b> model, and (c) reweight query terms with a <b>variant of the probabilistic</b> model.</p> <p><b>Classify 3 main structural queries and explain in detail about fixed structure and hierarchical structure</b></p> <p>5. 1. <b>Expanding</b> the original query with new terms, 2. <b>And reweighting</b> the terms in the expanded query.</p> <p>veral of <b>approaches</b> available for improving the initial query formulation through query expansion and term reweighting. These approaches are grouped in three categories:</p> <p>1. <b>Approaches</b> based on feedback information from the user; 2. <b>Approaches</b> based on information derived from the set of documents initially retrieved (called the <b>local</b> set of documents);</p> <p><b>Fixed structure</b></p>	<p>2marks</p> <p>8 marks</p> <p>Each 3 marks definition 1 mark</p>	<p>10 marks</p> <p>10 marks</p>
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**Hierarchical structure**

6. Explain Query expansion system reweighting for the vector model & term reweighting for the probability model.

,  $D_r$ : set of relevant documents, as identified by the user, among the retrieved documents;

$D_n$ : set of non-relevant documents among the retrieved documents;  $C_r$ : set of relevant documents among all documents in the collection;

$|D_r|$ ,  $|D_n|$ ,  $|C_r|$ : number of documents in the sets  $D_r$ ,  $D_n$ ,  $C_r$  respectively;

$\alpha$ ,  $\beta$ ,  $\gamma$  : tuning constants.

Consider first the unrealistic situation in which the complete set  $C_r$  of relevant documents to a given query  $q$  is known in advance.

Model explanation 4 marks each

10 marks

$$q_{opt} = \frac{1}{|C_r|} \sum_{\vec{d}_j \in C_r} \vec{d}_j - \frac{1}{N - |C_r|} \sum_{\vec{d}_j \notin C_r} \vec{d}_j \quad [1]$$

Standard Rocchio:  $q_m = \alpha q + \frac{\beta}{|D_r|} \sum_{\vec{d}_j \in D_r} \vec{d}_j - \frac{\gamma}{|D_n|} \sum_{\vec{d}_j \in D_n} \vec{d}_j$

Ide.Regular:  $q_m = \alpha q + \beta \sum_{\vec{d}_j \in D_r} \vec{d}_j - \gamma \sum_{\vec{d}_j \in D_n} \vec{d}_j$

Ide.Dec.Hi:  $q_m = \alpha q + \beta \sum_{\vec{d}_j \in D_r} \vec{d}_j - \gamma \max_{non-relevant}(\vec{d}_j)$

**Term Reweighting for the Probabilistic Model**

$$sim(d_j, q) \propto \sum_{i=1}^l w_{i,q} w_{i,j} \left( \log \frac{P(k_i|R)}{1 - P(k_i|R)} + \log \frac{1 - P(k_i|\bar{R})}{P(k_i|\bar{R})} \right) \quad [2]$$

7. What are text operations? Explain with a neat diagram document the preprocessing stages.

Diagram 2 marks

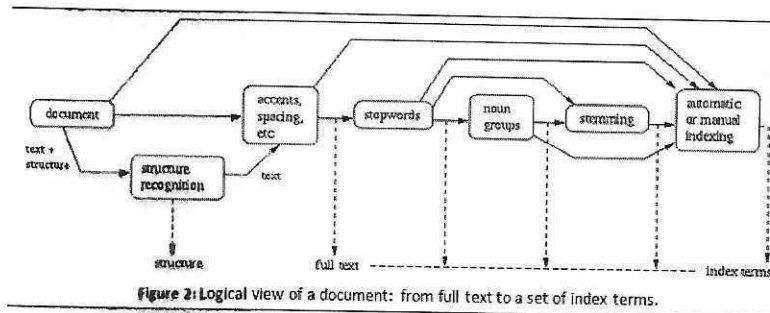
10

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**Document Preprocessing**  
 Document preprocessing is a procedure which can be divided mainly into five text operations (or transformations) (as shown in figure 2):

1. Lexical analysis
2. Elimination of stop words.
3. Stemming of the remaining
4. Selection of index terms
5. Construction of term categorization



Each step –  
2 marks

8. **Explain brief about Query expansion based on similarity thesaurus and explain pattern-matching words, prefixes, suffixes, substrings, and regular expressions.**

**Pattern Matching:**

- **Words**
- **Prefixes**
- **Suffixes** A string which must form the termination of a text word. For instance, given the suffix `tars' all the documents containing words such as 'computers,' testers, painters,' etc. are retrieved.
- **Substrings**
- **Ranges**
- **Regular expressions** some text retrieval systems allow searching for regular expressions.

Each 2  
marks

10

9. **i) What is an Index and list how the efficiency of an Information retrieval System depends on indexing. With a neat diagram example explain in detail the Inverted Index(Basic)**

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**Index** is a data structure built from the text to speed up the searches.

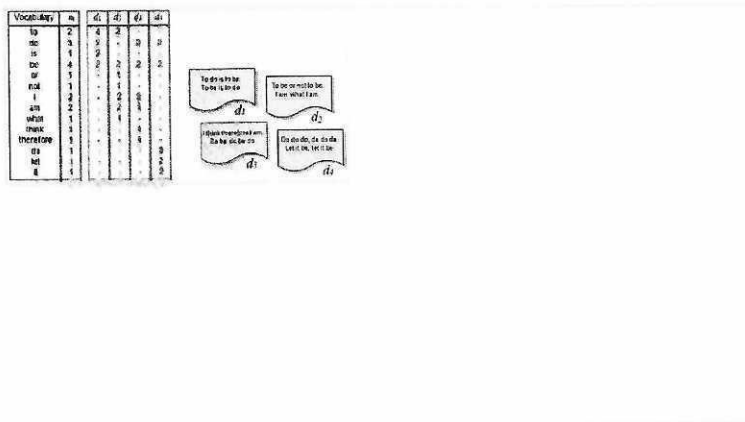
In the context of an information retrieval system that uses an **index**, the efficiency of the system can be measured

- Indexing time
- Indexing space:
- Index storage:
- Query latency:  
Query throughput:

Diagram-  
2marks

Each -2  
marks

**Inverted Index**



10

Outline with a neat diagram example explain in detail the Full Inverted Index

Diagram-  
2marks

Each -2  
marks

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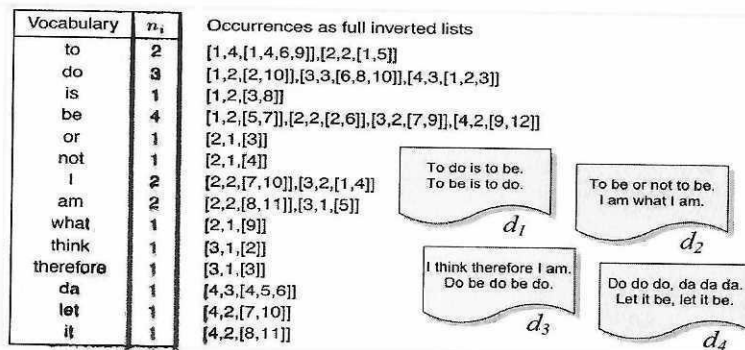


Figure 5: Full Inverted Index

The **space required** for the vocabulary is rather small Heaps' law: the **vocabulary grows** as  $O(n^\beta)$ , where

- ⊛ **n** is the collection size.
- ⊛  **$\beta$**  is a collection-dependent

The **occurrences demand** much more space the extra space will be  $O(n)$  and is around.

- **40%** of the text size

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CITY ENGINEERING COLLEGE BENGALURU

Branch : AI

Semester : 8

Sl NO.	USN	18AI824
1	1CE20AI001	37
2	1CE20AI002	40
3	1CE20AI003	40
4	1CE20AI004	40
5	1CE20AI006	38
6	1CE20AI007	38
7	1CE20AI008	40
8	1CE20AI009	40

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## INTERNAL ASSESSMENT BOOK

Name : Sharona Sam USN ICE2DA1007  
Branch AI&ML Semester 8<sup>th</sup> Section -

Sub Code: 18AI842 Subject: Modern information Retrieval

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/03/24	01-10	50	48	<u>[Signature]</u> 27/3/24
2.	Test - 2	18/4/24	11-21	50	48	<u>[Signature]</u> 18/4/24
3.	Test - 3	8/5/24	22-31	50	44	<u>[Signature]</u> 8/5/24

$\frac{140}{150} = \frac{28}{30} + \frac{10}{10}$

38

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	MARKS AWARDED		
	Test Marks	Assignment Marks	Final I A Marks
Maximum	30	10	40
Obtained	28	10	38

[Signature]  
Signature of Student

[Signature]  
Signature of Staff Incharge

[Signature]  
Signature of H.O.D

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## INTERNAL ASSESSMENT BOOK

Name: Syeda Aliyah Bakshi USN ICE20A2009  
Branch AI and ML Semester 8 Section B

Sub Code: 18A2842 Subject: Modern Information Retrieval

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/3/24	1-15	50	50	
2.	Test - 2	18/4/24	16-28	50	49	
3.	Test - 3	8/5/24	29-40	50	50	

$\frac{30}{30} + \frac{10}{10} = \frac{40}{40}$

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MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	30	10	40

Aliyah  
Signature of Student

Signature of Staff Incharge

Vagdevi  
Signature of H.O.D

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## INTERNAL ASSESSMENT BOOK

Name : Hajira Ahmed USN ICE20AT002  
Branch AI&ML Semester Vii Section .....

Sub Code: 18AI842 Subject: Modern Information Retrieval

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/03/24	1-15	50	50	<i>[Signature]</i> 27/3/24
2.	Test - 2	18/04/24	16-20	50	50	<i>[Signature]</i> 18/4/24
3.	Test - 3	08/05/24	31-40	50	50	<i>[Signature]</i> 8/5/24

$$\frac{30}{30} \times \frac{10}{10} = \frac{40}{40}$$

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MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	30	10	40

*Hajira Ahmed*  
Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D

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## INTERNAL ASSESSMENT BOOK

Name : Kokila. K.R USN ICE20A1004

Branch AI & ML Semester VIII Section .....

Sub Code: IBAI842 Subject: Modern Information Retrieval

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/3/24	2-15	50	50	<i>[Signature]</i> 28/3/24
2.	Test - 2	28/4/24	16-26	50	50	<i>[Signature]</i> 28/4/24
3.	Test - 3	8/05/24	27-36	50	50	<i>[Signature]</i> 8/5/24

$$\frac{30}{30} + \frac{10}{10} = \frac{40}{40}$$

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USN ICE20A1004 has satisfactorily completed the course of Internal assessment prescribed  
by the Vivesvaraya Technological University for Semester VIII Branch AI & ML  
for the academic year 20 ..... 20 .....

MARKS AWARDED			
	Test Marks	Assignment Marks	Final I A Marks
Maximum	30	10	40
Obtained	30	10	40

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Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D



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## INTERNAL ASSESSMENT BOOK

Name: Syeda Aliyah Bakshi USN ICE20A7009  
Branch A2 and m+ Semester 8 Section B

Sub Code: 18A2842 Subject: Modern Information Retention

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/3/24	1-15	50	50	<u>[Signature]</u> 27/3/24
2.	Test - 2	18/4/24	16-28	50	49	<u>[Signature]</u> 18/4/24
3.	Test - 3	8/5/24	29-40	50	50	<u>[Signature]</u> 8/5/24

$$\frac{30}{30} + \frac{10}{10} = \frac{40}{40}$$

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MARKS AWARDED			
	Test Marks	Assignment Marks	Final I A Marks
Maximum	30	10	40
Obtained	30	10	40

[Signature]  
Signature of Student

[Signature]  
Signature of Staff Incharge

[Signature]  
Signature of H.O.D





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## INTERNAL ASSESSMENT BOOK

Name: Sahas Rajanana USN ICE20A1008

Branch AIML Semester 8 Section

Sub Code: 18AI8042 Subject: Modern Information Retrieval

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	27/3/24	1-14	50	50	
2.	Test - 2	18/4/24	15-24	50	50	
3.	Test - 3	8/5/24	25-34	50	50	

$\frac{30}{30} + \frac{10}{10} = \frac{40}{40}$

## CERTIFICATE

This is to certify that Mr./Ms. Sahas Rajanana bearing USN ICE20A1008 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraya Technological University for Semester 8 Branch AI & ML for the academic year 20232024.

MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	30	10	40

Signature of Student

Signature of Staff Incharge

Signature of H.O.D



# CITY ENGINEERING COLLEGE

Doddakallasandra, Kanakapura Road, Bengaluru 560062

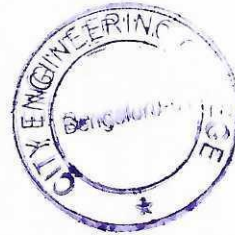
Department of Computer Science and Engineering

## Circular

This is to notify that 3<sup>rd</sup> Internals of 8<sup>th</sup> semester will be conducted on 18/04/2024

10.30am-12.00pm -18CS81 (Internet of Things)

2.30pm-4.00pm-18CS822 (Storage Area Network)



*Skoulas*

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HOD



# CITY ENGINEERING COLLEGE

Doddakallasandra, Kanakapura Road, Bengaluru 560062

Department of Computer Science and Engineering

8<sup>th</sup> semester 3<sup>rd</sup> Internal Time Table

18/04/2024	10.30am-12.00pm	2.30pm-4.00pm
Subject Code	18CS81	18CS82

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**CITY**  
ENGINEERING COLLEGE

Department Of Computer Science and Engineering

8th SEM 3RD IA FACULTY DUTY ALLOTMENT

Sl.No	NAME OF THE FACULTY	18-04-2024 Thursday	18-04-2024 Thursday
		10.30am-12:00PM	2:30PM-4:00PM
1	Mrs. Shruthi B S	C201	-----
2	Mrs. Swetha A	C202	-----
3	Mrs. Vibhavi R N	C203	-----
4	Ms. Shravya S	-----	C201
5	Mr. John Peter	-----	C202
6	Mrs. Nayana R K	-----	C203



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# CITY ENGINEERING COLLEGE

Doddakallasandra, Bangalore - 560 062

Room Allotment for 2nd Internal Test \_ UG - 8 th Semester \_ 18<sup>th</sup> April 2024

## ROOM NO:- CS-401

Seat No.	8 SEM CS A	Seat No.	8 SEM CS A	Seat No.	8 SEM CS A	Seat No.	8 SEM CS A	Seat No.	8 SEM CS A	Seat No.	8 SEM CS A
	USN		USN		USN		USN		USN		USN
1	1CE20CS001	2	1CE20CS007	13	1CE20CS013	14	1CE20CS021	25	1CE20CS029	26	1CE20CS033
3	1CE20CS002	4	1CE20CS008	15	1CE20CS014	16	1CE20CS024	27	1CE20CS030	28	1CE20CS034
5	1CE20CS003	6	1CE20CS009	17	1CE20CS016	18	1CE20CS025	29	1CE20CS031	30	1CE20CS035
7	1CE20CS004	8	1CE20CS010	19	1CE20CS017	20	1CE20CS026				
9	1CE20CS005	10	1CE20CS011	21	1CE20CS018	22	1CE20CS027				
11	1CE20CS006	12	1CE20CS012	23	1CE20CS019	24	1CE20CS028				

## ROOM NO:- CS-402

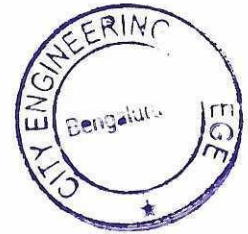
Seat No.	8 SEM CS A	Seat No.	8 SEM CS A	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B
	USN		USN		USN		USN		USN		USN
1	1CE20CS036	2	1CE20CS062	13	1CE20CS015	14	1CE20CS045	25	1CE20CS052	26	1CE20CS055
3	1CE20CS037	4	1CE20CS069	15	1CE20CS032	16	1CE20CS046	27	1CE20CS053	28	1CE20CS056
5	1CE20CS038	6	1CE20CS071	17	1CE20CS041	18	1CE20CS048	29	1CE20CS054	30	1CE20CS057
7	1CE20CS039	8	1CE20CS079	19	1CE20CS042	20	1CE20CS049				
9	1CE20CS040	10	1CE20CS081	21	1CE20CS043	22	1CE20CS050				
11	1CE20CS047	12	1CE20CS085	23	1CE20CS044	24	1CE20CS051				



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# ROOM NO:- CS-403

Seat No.	8 SEM CS B	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B	Seat No.	8 SEM CS B
	USN		USN		USN		USN		USN
1	1CE20CS058	2	1CE20CS066	13	1CE20CS075	14	1CE20CS083	25	1CE20CS090
3	1CE20CS059	4	1CE20CS068	15	1CE20CS076	16	1CE20CS084	26	1CE20CS091
5	1CE20CS060	6	1CE20CS070	17	1CE20CS077	18	1CE20CS086	27	1CE20CS036
7	1CE20CS061	8	1CE20CS072	19	1CE20CS078	20	1CE20CS087		
9	1CE20CS063	10	1CE20CS073	21	1CE20CS080	22	1CE20CS088		
11	1CE20CS065	12	1CE20CS074	23	1CE20CS082	24	1CE20CS089		



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Principal

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Kanakapura Main Road, Bengaluru-560061

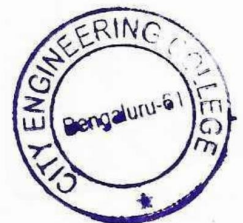


CITY ENGINEERING COLLEGE			
COMPUTER SCIENCE & ENGINEERING			
VIII SEMESTER- SECTION: A		INTERNAL TEST	
ROOM No:C-401			
Sl. No.	USN	DATE/SUBJECT CODES	
		18-04-2024	
		Morning	Afternoon
		18 ** 81	18 ** 82*
1	ICE20CS001	<del>Abhinav</del>	<del>Abhinav</del>
2	ICE20CS002	Abhinav	Ab
3	ICE20CS003	Abhinav	Abhinav
4	ICE20CS004	Abhinav	Abhinav
5	ICE20CS005	Abhinav	Abhinav
6	ICE20CS006	Abhinav	Abhinav
7	ICE20CS007	Abhinav	Abhinav
8	ICE20CS008	Absent	Ab
9	ICE20CS009	Abhinav	Abhinav
10	ICE20CS010	Absent	Smulya.R
11	ICE20CS011	Anand.M	Anand.M
12	ICE20CS012	Ananya.B.C	Ananya.B.C
13	ICE20CS013	Ananya	Ananya
14	ICE20CS014	Ananya	Ananya
15	ICE20CS016	Abhinav	Abhinav
16	ICE20CS017	Astha	Astha
17	ICE20CS018	B. Abhinav	B. Abhinav
18	ICE20CS019	Abhinav	Abhinav
19	ICE20CS021	Abhinav	Abhinav
20	ICE20CS024	Abhinav	Ab
21	ICE20CS025	Deepthi	Ab
22	ICE20CS026	Deepthi	Ab
23	ICE20CS027	Deepthi	Deepthi
24	ICE20CS028	Deepthi	Deepthi
25	ICE20CS029	Abhinav	Ab
26	ICE20CS030	Deepthi.S	Deepthi.S
27	ICE20CS031	Deepthi	Ab
28	ICE20CS033	Ganesh.v.jimre	Ganesh.v.jimre
29	ICE20CS034	Grace	Grace
30	ICE20CS035	Ganesh.v	Ganesh.v
No. of Students Present		29	22
No. of Students Absent		2	8
Staff Signature		<i>[Signature]</i>	<i>[Signature]</i>



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SI No.		USN	DATE/SUBJECT CODES	
			18-04-2024	
			Morning	Afternoon
			18 ** 81	18 ** 82*
1	ICE20CS036		Maleema	Maleema
2	ICE20CS037		g	g
3	ICE20CS038		Ab	Ab
4	ICE20CS039		Jyoti	Jyoti
5	ICE20CS040		Abhanya	Abhanya
6	ICE20CS047		Adhitha	Adhitha
7	ICE20CS062		Ab	Ab
8	ICE20CS069		Snehal	Ab
9	ICE20CS071		Ab	Ab
10	ICE20CS079		Ta	Ab
11	ICE20CS015		Present	Ab
12	ICE20CS032		Ab	Ab
13	ICE20CS041		Karishma	Karishma
14	ICE20CS042		Karishma	Ab
15	ICE20CS043		K	K
16	ICE20CS044		Krupashree-G	Krupashree-G
17	ICE20CS045		Kumarawanep	Ab
18	ICE20CS046		Ab	Ab
19	ICE20CS048		Manasa.P	Ab
20	ICE20CS049		Ab	Ab
21	ICE20CS050		Ab	Ab
22	ICE20CS051		Ab	Ab
23	ICE20CS052		Ab	Ab
24	ICE20CS053		Nakalaki	Nakalaki
25	ICE20CS054		Ab	Ab
26	ICE20CS055		Nimmi	Ab
27	ICE20CS056		Ab	Ab
28	ICE20CS057		Pooja's	Pooja's
No. of Students Present			Ab	Ab
No. of Students Absent			8	15
Staff Signature			Pangetha.D	Jyoti



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SI No.		USN	DATE/SUBJECT CODES	
			18-04-2024	
			Morning	Afternoon
			18 ** 81	18 ** 82*
1	ICE20CS058		Poanam k.R.	Poanam k.R.
2	ICE20CS059		Ab	Ab
3	ICE20CS060		Pushkar	Ab
4	ICE20CS061		Ab	Ab
5	ICE20CS063		Ab	Ab
6	ICE20CS065		Ab	Ab
7	ICE20CS066		Ab	Ab
8	ICE20CS068		Shoba H.N	Ab
9	ICE20CS070		Poanam	Ab
10	ICE20CS072		Sub	Sub
11	ICE20CS073		Sub	Sub
12	ICE20CS074		Sub	Sub
13	ICE20CS075		Swati	Swati
14	ICE20CS076		Ab	Ab
15	ICE20CS077		Ab	Ab
16	ICE20CS078		Salia	Salia
17	ICE20CS080		Sub	Sub
18	ICE20CS082		Hari	Hari
19	ICE20CS083		V. Chandrashekar	Ab
20	ICE20CS084		Jashnavi	Jashnavi
21	ICE20CS086		Ab	Ab
22	ICE20CS087		Ab	Ab
23	ICE20CS088		Ab	Ab
24	ICE20CS089		Yashashree	Ab
25	ICE20CS090		Sub	Yashai
26	ICE20CS091		Ab	Ab
27	ICE19CS036		Impara	Impara
No. of Students Present			17	12
No. of Students Absent			10	15
Staff Signature			Managa.h	h



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**THIRD INTERNAL TEST**

COURSECODE:18CS822

*Handwritten signature and date: 16/5/24*

Programme:CS/IS  
 Course Name:Storage Area Networks  
 Sem:VIII A&B  
 Duration:1½Hrs

Date:08/05/2024  
 Time:2:30PM-4:00PM

Note:Answer any FIVE questions choosing at least ONE from each part

MAX MARKS:50

**Part -A**

Describe Backup and restore operations.	10	CO'S	BT'S
<i>OR</i>		CO1	BT1
Discuss different backup topologies.	10	CO1	BT1

**Part- B**

Mention Major Local replication technologies. Explain network based local replication	10	CO1	BT1, BT2
<i>OR</i>			
A) Discuss flushing the file system buffer. B) Explain the uses of local replicas.	5 5	CO1	BT1,BT3

**Part-C**

Explain host based remote replication with neat diagram.	10	CO2	BT1, BT2
<i>OR</i>			
A) Difference between synchronous and asynchronous remote replication modes. B) Explain FCSCAN security architecture with a neat diagram.	5 5	CO2	BT2, BT3

**Part-D**

Explain storage security domains.	10	CO2	BT2, BT3
<i>OR</i>			
What is remote replication? Explain storage array based remote replication.	10	CO2	BT1, BT2

**Part-E**

Write a note on i) Assets ii) Threats iii) Vulnerability	10	CO2	BT2, BT3
<i>OR</i>			
Explain storage array based local replication in detail.	10	CO2	BT3, BT4

**Knowledge Taxonomy Levels(BTL):**  
 L1- Remembering the concepts BT2-Understanding BT3 -Applying BT4 -Analyzing BT5-Evaluating  
**Course Outcomes(CO's):**  
 CO1: Understand the techniques and summarize the concepts  
 CO2: Investigate the concepts and apply the same

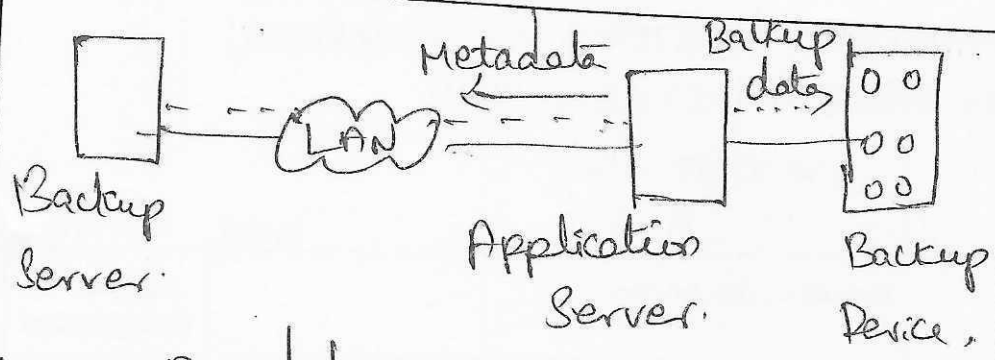


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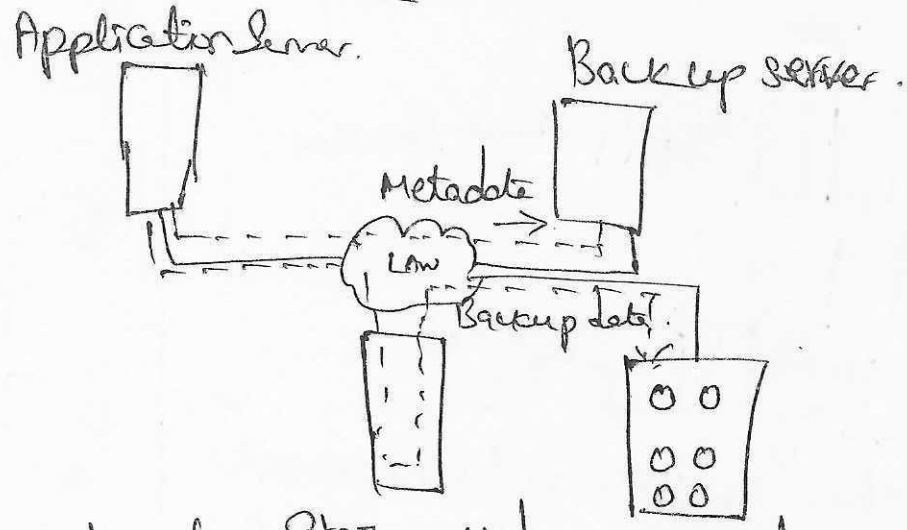




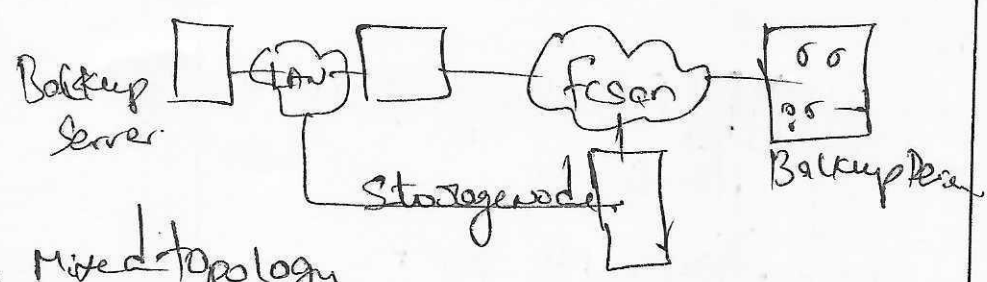
Q. No	Details of the Answer	Marks Distribution	Total marks
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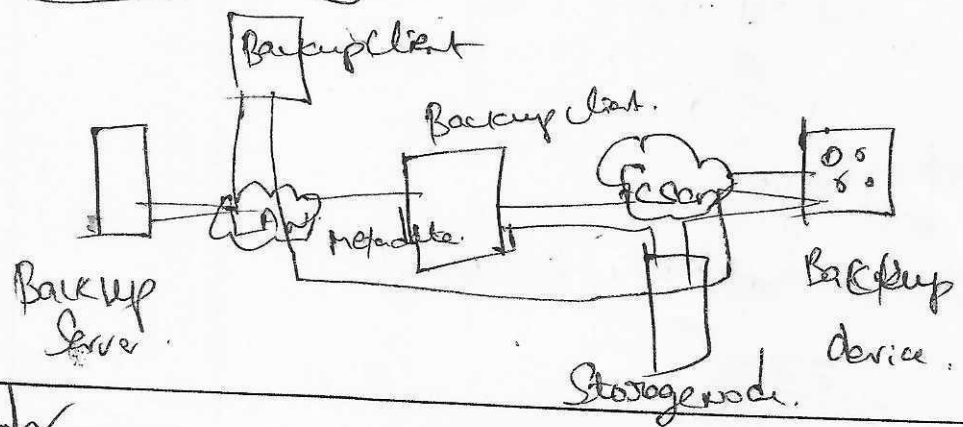
ii, LAN Based backup.



iii, SAN based backup.



iv, Mixed topology



Q No  
3

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HOD

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Q. No	Details of the Answer	Marks Distribution	Total marks
3.	<p>Major Local Replication Technologies,</p> <ol style="list-style-type: none"> <li>1. Snapshot Replication.</li> <li>2. Mirroring</li> <li>3. Asynchronous Replication.</li> <li>4. Cloning.</li> </ol> <p>Network based local Replication involves Replicating data b/w storage S/m over a n/w within a LAN or SAN.</p> <ol style="list-style-type: none"> <li>1. Storage Array Based.</li> <li>2. Host Based.</li> <li>3. File Based.</li> <li>4. Block Level.</li> </ol>	<p>3</p> <p>2</p> <p>5</p>	<p>10.</p>
4.	<p>(OR)</p> <p>A, <u>Flushing the S/m buffer</u> refers to. }          Data held in memory buffer by the }          file S/m is committed to disk. } Explanation (5)</p> <p>B. <u>Uses of Local Replicas</u></p> <ol style="list-style-type: none"> <li>1. Alternative source for backup.</li> <li>2. Fast recovery.</li> <li>3. Testing platform.</li> <li>4. Data migration.</li> <li>5. Disaster Support.</li> </ol>	<p>5</p>	<p>10.</p>

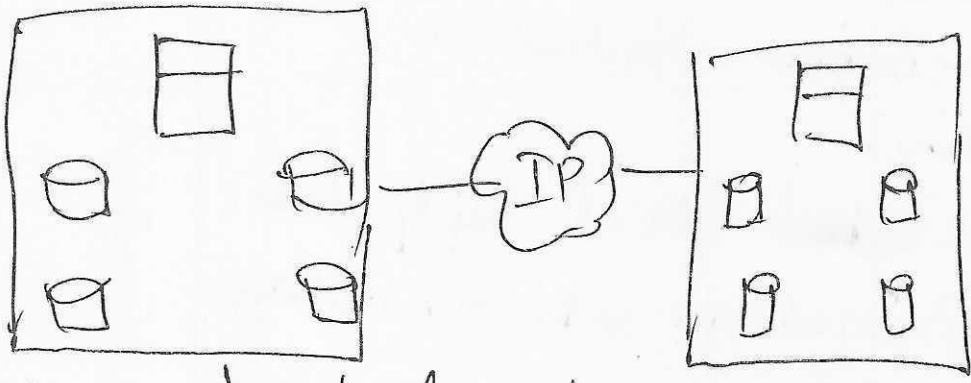
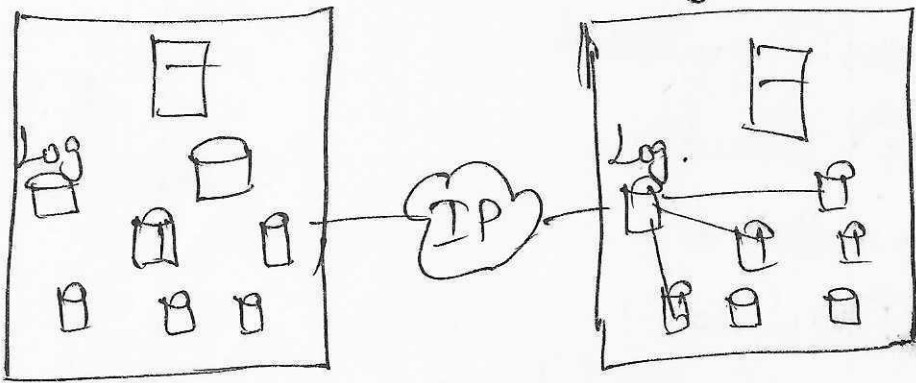
Vipet  
Staff Signature:



Shawen  
PRINCIPAL  
CITY ENGINEERING CO.  
Kanakapura Main Road, Bengaluru-01.

Signature  
HOD



Q. No	Details of the Answer	Marks Distribution	Total marks		
5	<p>Host Based Remote Replication.</p> <p>→ LVM -Based Remote Replication</p>  <p>→ Host based log shipping.</p> 	5  5	10		
6.	<p>(Or)</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <p>A. Synchronous</p> <p>write must be committed to the source and the target prior to acknowledging. write complete to the production host.</p> </td> <td style="width: 50%; vertical-align: top;"> <p>Asynchronous</p> <p>A write is committed to the source and immediately acknowledged to the host.</p> </td> </tr> </table> <p>B. <u>FSCAP</u>.</p> <p>Multiple Integrated layers for Security with Architecture diagram</p>	<p>A. Synchronous</p> <p>write must be committed to the source and the target prior to acknowledging. write complete to the production host.</p>	<p>Asynchronous</p> <p>A write is committed to the source and immediately acknowledged to the host.</p>	5	10
<p>A. Synchronous</p> <p>write must be committed to the source and the target prior to acknowledging. write complete to the production host.</p>	<p>Asynchronous</p> <p>A write is committed to the source and immediately acknowledged to the host.</p>				

Staff Signature:

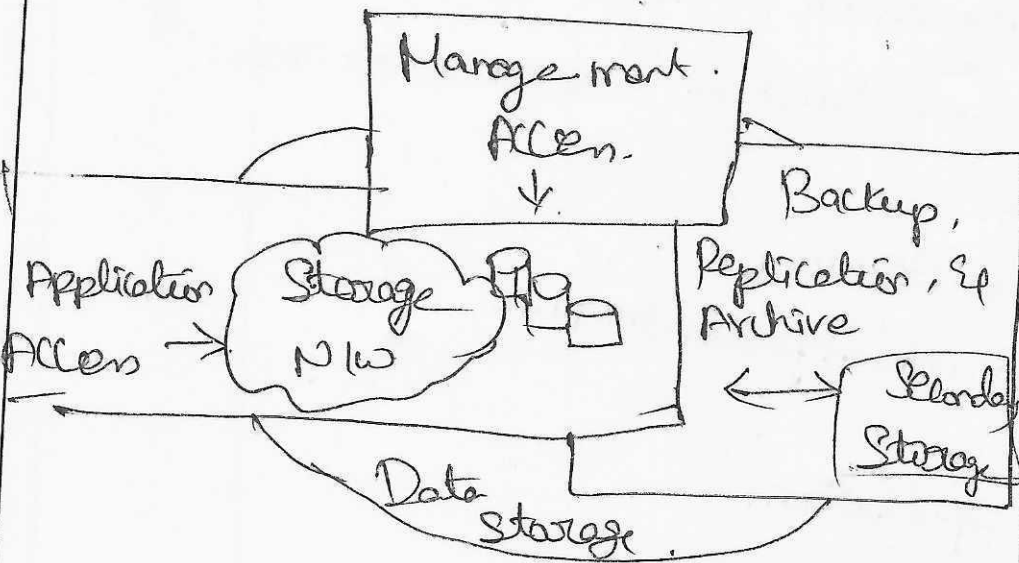
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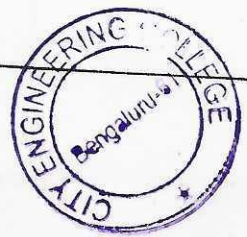
Q. No  
17

8

Total marks

Q. No	Details of the Answer	Marks Distribution	Total marks
7	<p>Storage Security Domains.</p> 	10	10
8	<p>(or).</p> <p><u>Remote Replication</u></p> <p>Replicas of information assets at the remote sites organization mitigate the risks.</p> <p><u>Storage Array Based Remote Replication</u></p> <ul style="list-style-type: none"> <li>i. Synchronous Replication Mode</li> <li>ii. Asynchronous Replication mode.</li> <li>iii. Disk Buffered Replication mode.</li> </ul>	3	10

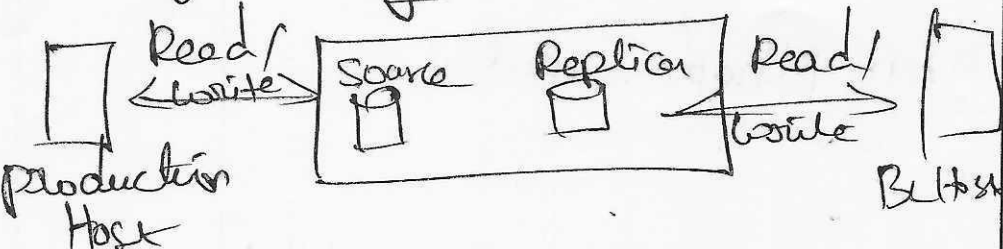
Staff Signature:



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Mankapura Main Road, Bangalore

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Q. No	Details of the Answer	Marks Distribution	Total marks
9.	<p>i, Assets. Information, H/w, S/w and other infrastructure components are Assets.</p> <p>ii, Threats. passive Attack, Data modification Attack. Dos. Reperidiation.</p> <p>iii, Vulnerability. Potential Attacks. Defense indepth. Layered approach to security.</p>	3  4  3	10.
10.	<p>(or)</p> <p>Storage Array based local Replication</p>  <p>i, Full Volume mirroring.</p> <p>ii, Pointer Based full Volume Replication.</p>	5  5	10.

Staff Signature:

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Kanakapura Main Rd, Doddakalasangra, Bangalore 560 062.  
Email: cityengineering123@gmail.com Website: www.cityengineeringcollege.ac.in  
Ph: 080 - 22560313 Mob: 98804 22365



NAAC ACCREDITED

## INTERNAL ASSESSMENT BOOK

Name: Benitta Hathsiyal X USN: ICE20CS019

Branch: CSE Semester: VII<sup>th</sup> Section: A

Sub Code: 18CS822 Subject: SAN

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26/03/24	01 - 14	50	48	<i>[Signature]</i> 26/3/24
2.	Test - 2	18/04/24	15 - 28	50	50	<i>[Signature]</i>
3.	Test - 3	08/05/24	29 - 43	50	50	<i>[Signature]</i>

## CERTIFICATE

This is to certify that Mr./<sup>✓</sup>Ms. Benitta Hathsiyal - X bearing  
USN ICE20CS019 has satisfactorily completed the course of Internal assessment prescribed  
by the Vignveswaraaya Technological University for Semester VII<sup>th</sup> Branch CSE  
for the academic year 20 23 20 24

### MARKS AWARDED

	Test Marks	Assignment Marks	Final : A Marks
Maximum	30	10	40
Obtained	30	10	40

*[Signature]*  
Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D



*[Signature]*  
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Kanakapura Main Road, Bangalore



Branch : CS

Semester : 8

SI NO.	USN	18CS822
1	1CE19CS036	32
2	1CE20CS001	33
3	1CE20CS002	39
4	1CE20CS003	36
5	1CE20CS004	33
6	1CE20CS005	39
7	1CE20CS006	37
8	1CE20CS007	40
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32	1CE20CS034	35
33	1CE20CS035	34
34	1CE20CS036	38
35	1CE20CS037	40
36	1CE20CS038	37



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SI NO.	USN	18CS822
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70	1CE20CS074	30
71	1CE20CS075	38
72	1CE20CS076	26
73	1CE20CS077	25
74	1CE20CS078	38
75	1CE20CS079	39



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Sl NO.	USN	18CS822
76	1CE20CS080	37
77	1CE20CS081	37
78	1CE20CS082	39
79	1CE20CS083	34
80	1CE20CS084	38
81	1CE20CS085	40
82	1CE20CS086	36
83	1CE20CS087	33
84	1CE20CS088	22
85	1CE20CS089	35
86	1CE20CS090	40
87	1CE20CS091	32

*Ver. of  
May*

Draft, As Entered in VTU CIE Portal on 2024-05-25 11:32:38



*Shanley*  
PRINCIPAL  
CITY ENGINEERING COLLEGE  
Kanakapura Main Road, Bangalore-570061



# CITY ENGINEERING COLLEGE

Doddakallasandra, Kanakapura Road, Bengaluru 560062

## Department of Electronics and Communication Engineering

### Circular

This is to notify that 3<sup>rd</sup> Internals of 8<sup>th</sup> semester will be conducted on 18<sup>TH</sup> and 19<sup>TH</sup>  
APRIL 2024

10.30am-12.00pm -18EC81 (Internet of Things)

10.30pm-12.00pm-18EC821 (Network security)

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# CITY ENGINEERING COLLEGE

Doddakallasandra, Kanakapura Road, Bengaluru 560062

## Department of Electronics and Communication Engineering

### 8<sup>th</sup> semester 3<sup>rd</sup> Internal Time Table

DATE	10.30am-12.00pm	SUBJECT
18/04/2024	18EC81	Internet of Things
19/04/2024	18EC822	Network security

*S. K. Anand*

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Kanakapura Main Road, BANGALORE - 560 061

*G. S. Malhotra*  
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**CITY**  
ENGINEERING COLLEGE

Department Of ELECTRONICS and COMMUNICATION Engineering

**8th SEM 3RD IA ROOM ALLOTMENT**

Sl.No	8 EC 'A'	18-04-2024	19-04-2024
		Thursday	FRIDAY
		10.30am-12:00PM	10:30PM-12:00PM
	USN	A103	A103
1	1CE20 EC 001	A103	A103
2	1CE20 EC 002	A103	A103
3	1CE20 EC 003	A103	A103
4	1CE21EC 400	A103	A103
5	1CE21EC401	A103	A103

*S. K. Anand*

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*P. S. Malleswari*  
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**CITY**  
ENGINEERING COLLEGE

Department Of ELECTRONICS and COMMUNICATION Engineering

8th SEM 3RD IA FACULTY DUTY ALLOTMENT

Sl.No	NAME OF THE FACULTY	18-04-2024 Thursday	19-04-2024 FRIDAY
		10.30am-12:00PM	10:30PM-12:00PM
1	Dr shaini Prasad	A103	
2	Shylaja		A103

S. Kaulan

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A. S. Malikarjuna  
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Ph: 080 - 22560313 Mob: 98804 11365



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## INTERNAL ASSESSMENT BOOK

Name: KEERTHI A USN 1CE20EC002

Branch ELECTRONICS AND COMMUNICATION Semester VIII Section A

Sub Code: ISECB21 Subject: NETWORK SECURITY

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26/03/24	1-8	40/30	36/27	
2.	Test - 2	25/04/24	9-14	40/30	34/26	
3.	Test - 3	07/05/24	15-22	40/30	38/29	
					108/82	

## CERTIFICATE

This is to certify that Mr./Ms. KEERTHI A bearing USN 1CE20EC002 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraya Technological University for Semester VIII Branch EC for the academic year 2023 2024

MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	27	10	37

Signature of Student

Signature of Staff Incharge

Signature of H.O.D

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# Visvesvaraya Technological University

IA / CIE Report June / July 2024 Examination.

CITY ENGINEERING COLLEGE, BANGALORE

Branch : EC

Scheme : 2018

Semester : 8

SI NO.	USN	18EC81	18EC821	18ECP83	18ECS84	18ECI85	STUDENT SIGNATURE
1	1CE20EC001	33	37	34	86	35	
2	1CE20EC002	35	37	38	95	36	
3	1CE20EC003	23	26	28	81	26	
4	1CE21EC400	23	23	26	78	25	
5	1CE21EC401	36	36	38	96	35	
--x--	Faculty Signature	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>	-----XXXXXXX-----

\* - values are either optional subjects or the faculty has not yet entered the marks

TH - Theory part of CIE Marks (IPCC)

PR - Practical part of CIE Marks (IPCC)

T - Total CIE Marks (IPCC)

*[Signature]*  
HOD

Seal and Signature

Professor & Head  
Dept. of Electronics &  
Communication Engineering  
City Engineering College,  
Doddakalasanahalli, Kanakapura Main Rd  
Bangalore-560 061.

*[Signature]*  
PRINCIPAL

Seal and Signature

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Kanakapura Main Road, BANGALORE - 560 061

*[Signature]*

**CITY ENGINEERING COLLEGE**  
FIRST INTERNAL TEST

Programme: ELECTRONICS AND COMMUNICATION  
Course : Network Security  
Sem& Sec: 8 A  
Duration: 1 ½ hrs.

Date:26/03/2024  
Time: 2:30 PM-4:00 PM  
Max Marks: 40

*Note: Answer all Questions selecting any ONE FULL question from each part.*

Q No	Questions	Marks	CO's	BT'S
<b>PART-A</b>				
1	Why a security is needed? Brief. Enumerate the salient features of modern nature of attacks.	10	CO1	L1, L2
<b>OR</b>				
2	Explain the principles of security with necessary diagrams.	10	CO1	L1, L2
<b>PART-B</b>				
3	What are Active attacks? Explain Masquerade, Replay attack, Alteration of messages and Denial of service.	10	CO1	L1, L2
<b>OR</b>				
4	Mention the programs that attack computer systems. Explain Virus and its four phases of lifetime.	10	CO1	L1, L2
<b>PART-C</b>				
5	Highlight the key characteristics of the four generations of anti-virus software.	10	CO1	L1, L2
<b>OR</b>				
6	Tabulate the Web Security Threats, consequences and countermeasures with respect to Integrity, confidentiality, Denial of service and Authentication.	10	CO2	L1, L2
<b>PART-D</b>				
7	Explain with neat figures, the three-level web traffic security approaches.	10	CO2	L1, L2
<b>OR</b>				
8	Describe SSL architecture with SSL protocol stack.	10	CO2	L1, L2

Blooms Taxonomy Levels (BTL): BT1-Remembering BT2- Understanding  
 Course Outcomes (CO's): CO1: Explain network security services and mechanisms and explain Security concepts  
 CO2: Understand the concept of transport level security and SSL.

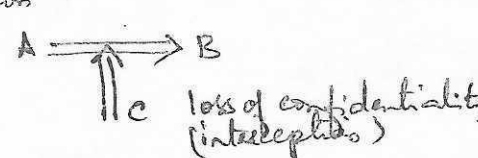
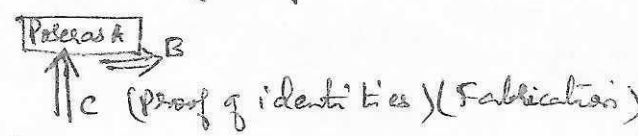
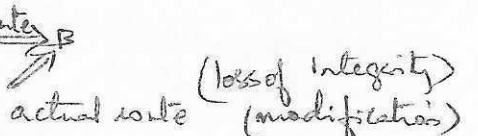
*Score*



**CITY ENGINEERING COLLEGE**  
**DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING**  
**SCHEME FOR VALUATION- 2023-24**

INTERNAL TEST: 01

Semester & Section: S A Sub Code: 18EC821 Sub Name: Network Security Date: 26-3-24

Question No.	Details of the Answer	Marks Distribution	Total Marks
1.	<p>Need of Security</p> <ul style="list-style-type: none"> <li>- Importance of data</li> <li>- To handle or cover financial &amp; personal data</li> <li>- To authenticate a user.</li> <li>- To encode database info.</li> <li>- To avoid intruder capturing the data</li> </ul> <p>Salient features of modern nature of attacks:</p> <ul style="list-style-type: none"> <li>- Automating attacks</li> <li>- Privacy concerns</li> <li>- Distance no matter</li> </ul>	5  5	10
2.	<p>Principles of security - confidentiality, Authentication, Integrity &amp; Non-repudiation</p> <p>Confidentiality - </p> <p>Authentication: </p> <p>Integrity: </p> <p>Non-repudiation - Refusal of info. sent. (denial of doing)</p>	3  3  3  1	10
3	<p>Active attacks are modifying the original message or creation of false message. Not an easy way to prevent.</p> <p>Masquerade - Trying to pose as another entity.</p> <p>Replay attack - Modification &amp; recording</p> <p>Alteration of messages - change to original data</p> <p>Denial of Service - Attempt to prevent legitimate use from accessing services.</p>	1  3  3  3	10

Staff *S.K.*

*S.K. Sankar*

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Question No.	Details of the Answer	Marks Distribution	Total Marks																																	
7	<p>web traffic security approaches :</p> <table border="1" data-bbox="256 456 608 645"> <tr><td>HTTP</td><td>FTP</td><td>SMTP</td></tr> <tr><td colspan="3">TCP</td></tr> <tr><td>IP</td><td>IPsec</td><td></td></tr> </table> <p>N/w level</p> <table border="1" data-bbox="639 434 1023 680"> <tr><td>HTTP</td><td>FTP</td><td>SMTP</td></tr> <tr><td colspan="3">SSL or TLS</td></tr> <tr><td colspan="3">TCP</td></tr> <tr><td colspan="3">IP</td></tr> </table> <p>Transport level</p> <table border="1" data-bbox="1023 405 1353 636"> <tr><td colspan="3">SMIME</td></tr> <tr><td>Reverse</td><td>SMTP</td><td>HTTP</td></tr> <tr><td>UDP</td><td colspan="2">TCP</td></tr> <tr><td></td><td colspan="2">IP</td></tr> </table> <p>Application level</p>	HTTP	FTP	SMTP	TCP			IP	IPsec		HTTP	FTP	SMTP	SSL or TLS			TCP			IP			SMIME			Reverse	SMTP	HTTP	UDP	TCP			IP		<p>level 4                      Explan 6</p>	10
HTTP	FTP	SMTP																																		
TCP																																				
IP	IPsec																																			
HTTP	FTP	SMTP																																		
SSL or TLS																																				
TCP																																				
IP																																				
SMIME																																				
Reverse	SMTP	HTTP																																		
UDP	TCP																																			
	IP																																			
8	<p>Secure socket layer architecture.                      SSL protocol stack explanation</p>	<p>3                      3                      4</p>	10																																	

Staff *[Signature]*

*SKAULAN*

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## DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

### Circular

This is to notify that 3<sup>rd</sup> Internals of 8<sup>th</sup> semester will be conducted on 18/04/2024

10.30am-12.00pm -18CS81 (Internet of Things)

2.30pm-4.00pm-18CS822 (Storage Area Network)

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## DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

### 8<sup>th</sup> semester 3<sup>rd</sup> Internal Time Table

18/04/2024	10.30am-12.00pm	2.30pm-4.00pm
Subject Code	18CS81	18CS822

*S. K. S. K.*

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*M. S. S.*  
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Department Of Information Science and Engineering			
8th SEM 3RD IA FACULTY DUTY ALLOTMENT			
Sl.No	NAME OF THE FACULTY	18-04-2024 Thursday	18-04-2024 Thursday
		10.30am-12:00PM	2:30PM-4:00PM
1	Mrs. Shruthi B S	C201	-----
2	Mrs. Swetha A	C202	-----
3	Mrs. Vibhavi R N	C203	-----
4	Ms. Shravya S	-----	C201
5	Mr. John Peter	-----	C202
6	Mrs. Nayana R K	-----	C203

S. K. Anand

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**Room Allotment for 3<sup>rd</sup> Internal Test \_UG –8th Semester\_ 18<sup>th</sup> April 2024**

**ROOMNO:-CS-203**

Seat No.	8SEMISB								
	USN								
1	1CE20IS001								
2	1CE20IS002								
3	1CE20IS003								

*[Signature]*  
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*[Signature]*

*[Signature]*  
Principal

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#### Department of Information Science and Engineering

VIII SEMESTER - SECTION: B

III INTERNAL TEST

ROOM No: C-203

SI No.	USN	Morning	Afternoon
		18CS81	18CS822
1	1CE201S001	Aisha Kuneer	Aisha Kuneer
2	1CE201S002	Am	Am
3	1CE201S003	Lizha R	Lizha R
No. of Students Present		03	03
No. of Students Absent		-	-
Staff Signature		Shankar B	[Signature]

SKanaka

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[Signature]  
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USN I C E

COURSECODE:18CS822

## CITYENGINEERINGCOLLEGE

KanakapuraRoad,Doddakallasandra,Bengaluru-560062

## THIRD INTERNAL TEST

Programme:CS/IS

Course Name:Storage Area Networks

Sem:VIII A&amp;B

Duration:1½Hrs

Date:08/05/2024

Time:2:30PM-4:00PM

MAX MARKS:50

Note: Answer any FIVE questions choosing at least ONE from each part

## Part-A

		CO'S	BT'S
1.	Describe Backup and restore operations.	10	CO1 BT1
OR			
2.	Discuss different backup topologies.	10	CO1 BT1

## Part-B

3.	Mention Major Local replication technologies. Explain network based local replication	10	CO1 BT1, BT2
OR			
4.	A) Discuss flushing the file system buffer. B) Explain the uses of local replicas.	5 5	CO1 BT1, BT3

## Part-C

5.	Explain host based remote replication with neat diagram.	10	CO2 BT1, BT2
OR			
6.	A) Difference between synchronous and asynchronous remote replication modes. B) Explain FCSCAN security architecture with a neat diagram.	5 5	CO2 BT2, BT3

## Part-D

7.	Explain storage security domains.	10	CO2 BT2, BT3
OR			
8.	What is remote replication? Explain storage array based remote replication.	10	CO2 BT1, BT2

## Part-E

9.	Write a note on i) Assets ii) Threats iii) Vulnerability	10	CO2 BT2, BT3
OR			
10.	Explain storage array based local replication in detail.	10	CO2 BT3, BT4

## Blooms Taxonomy Levels(BTL):

BT1- Remembering the concepts BT2- Understanding BT3 -Applying BT4 -Analyzing BT5-Evaluating

## Course Outcomes(CO's):

CO1: Understand the techniques and summarize the concepts

CO2: Investigate the concepts and apply the same

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

**SCHEME FOR EVALUATION**

CIE TEST III

SEMESTER & SECTION: VIII & A, B

DATE: 8.05.2024

Q. No	Details of the Answer	Marks Distribution	Total marks
1.	<p>Backup and restore operations.</p> <p>Listing out the operations carried out in Backup. <u>Restoration</u></p> <p>(or)</p> <p>Backup Topologies: Direct attached backup</p>	<p>5</p> <p>5</p>	<p>10</p>

*[Signature]*  
Staff Signature:

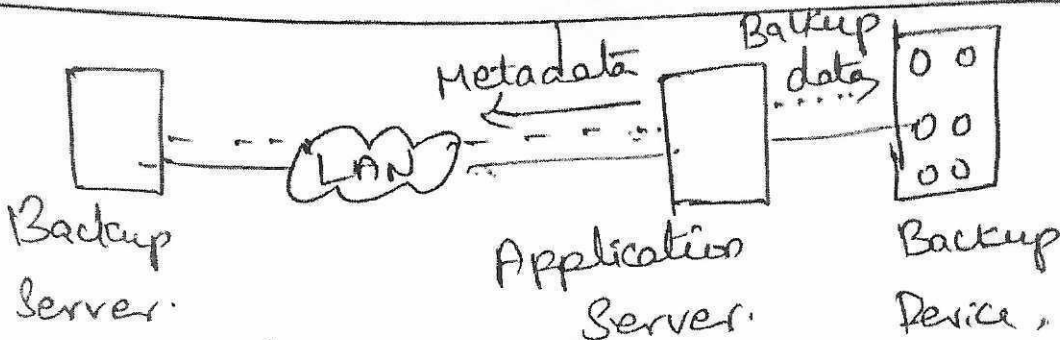


Q. No

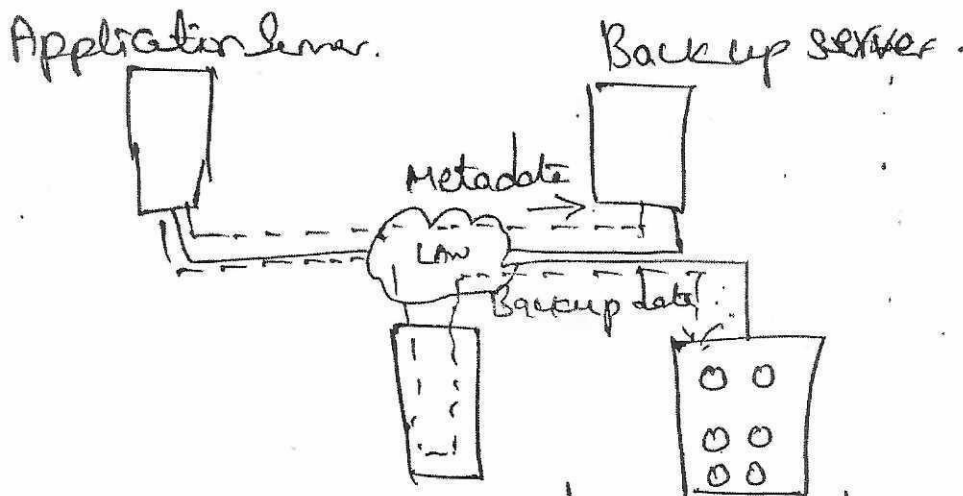
Details of the Answer

Marks Distribution

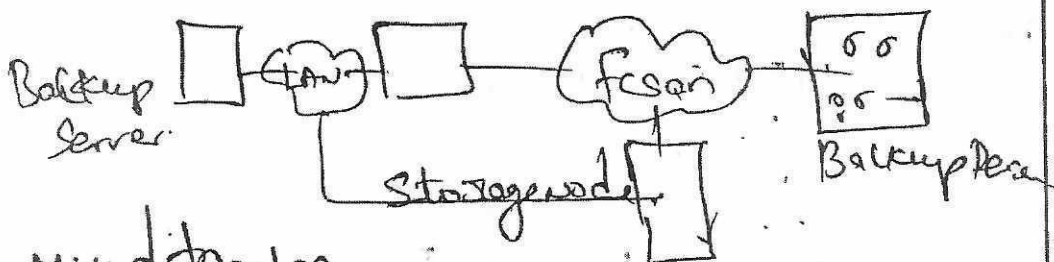
Tm



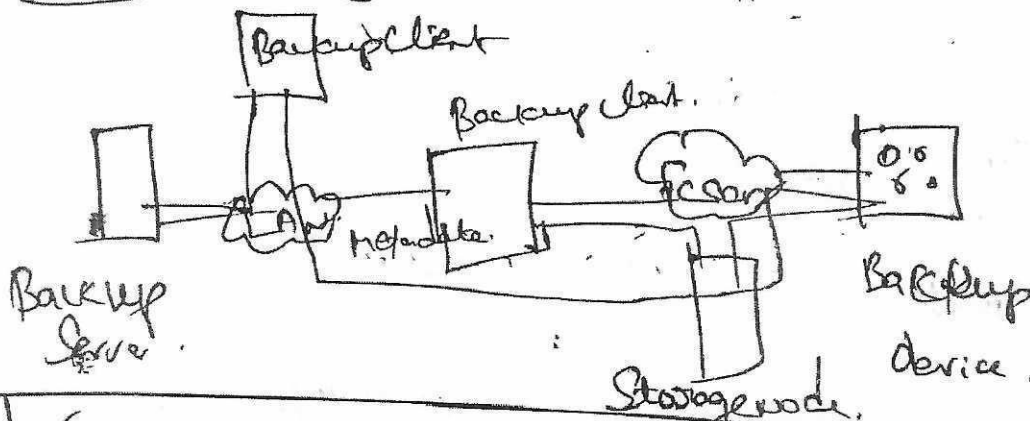
ii, LAN Based backup.



iii, SAN based backup.



iv, Mixed topology



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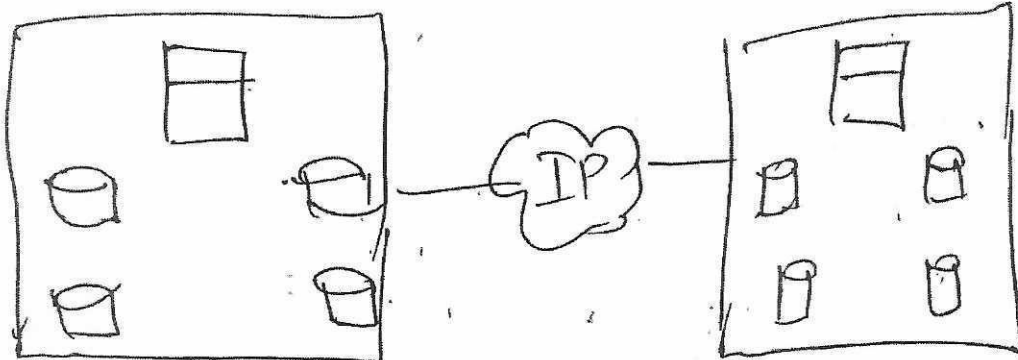



Details of the Answer

Major Local Replication Technologies	Marks Distribution	Total marks
<ol style="list-style-type: none"> <li>1. Snapshot replication.</li> <li>2. Mirroring</li> <li>3. Asynchronous Replication.</li> <li>4. Cloning.</li> </ol>	3	
<p>Network based local Replication involves Replicating data b/w Storage S/m over a n/w within a LAN or SAN.</p>	2	10.
<ol style="list-style-type: none"> <li>1. Storage Array Based.</li> <li>2. Host Based.</li> <li>3. File Based.</li> <li>4. Block Level.</li> </ol>	5	
<p>A) <u>Flushing the S/m buffer</u> (or) refers to. }          Data held in memory buffer by the }          file S/m is written to disk. } Explanation (5)</p>		
<p>B) <u>Uses of Local Replicas</u></p> <ol style="list-style-type: none"> <li>1. Alternative source for backup.</li> <li>2. Fast recovery.</li> <li>3. Testing platform.</li> <li>4. Data migration.</li> <li>5. Decision Support.</li> </ol>	5	10.

Signature:

*S. K. Anand*  
 PRINCIPAL  
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Q. No	Details of the Answer	Marks Distribution	Total
5.	<p>Host Based Remote Replication.</p> <p>→ LVM - Based Remote Replication</p>  <p>→ Host based log shipping.</p> 	5  5	10
6.	<p>A. Synchronous</p> <p>(Or)</p> <p>Asynchronous</p> <hr/> <p>write must be committed to the source and the target prior to acknowledging write complete to the production host.</p> <p>A write is committed to the source and immediately acknowledged to the host.</p> <p>B. <u>FASCAP</u>.</p> <p>Multiple Integrated layers for security with Architecture diagram</p>	5	15

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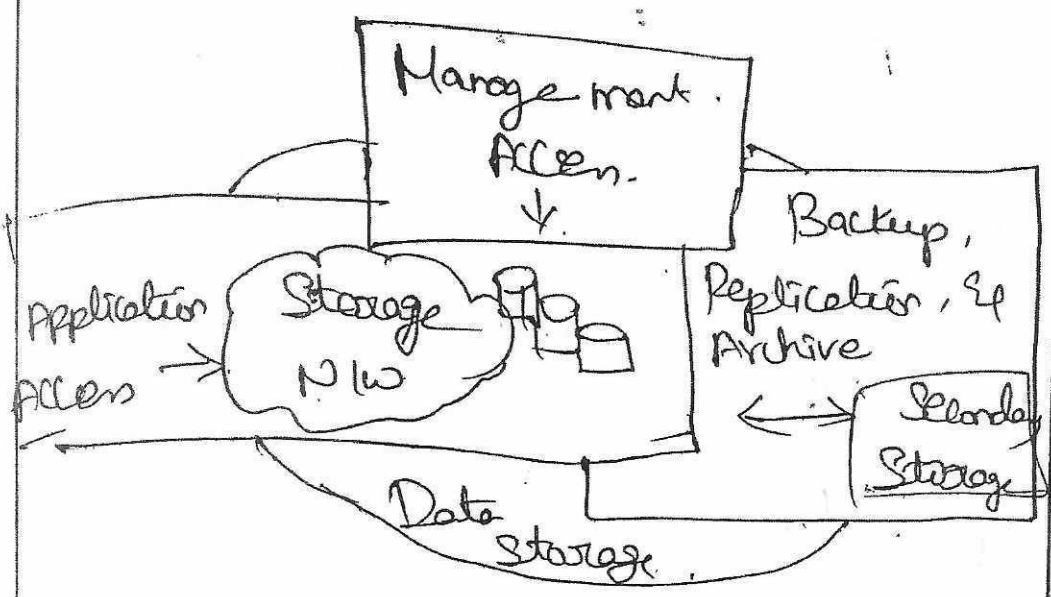


Details of the Answer

Marks Distribution

Total marks

7. Storage Security Domains.



10

10

8. Remote Replication (or)

Replicas of information assets at the separate sites organization mitigate the risks.

3

Storage Array Based Remote Replication:

- i. Synchronous Replication Mode
- ii. Asynchronous Replication mode
- iii. Disk Buffered Replication mode.

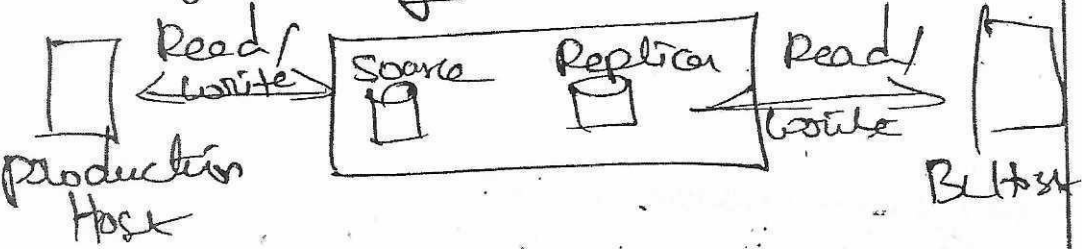
7

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Staff Signature:

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Q. No	Details of the Answer	Marks Distribution	Total marks
9.	<p>i. Assets. Information, H/w, S/w and other infrastructure components are Assets.</p> <p>ii. Threats: Passive Attack, Data modification Attack. DoS. Reputation.</p> <p>iii. Vulnerability. Potential Attacks. Defense in depth. Layered approach to security.</p>	3  4  3	
10.	<p>(or)</p> <p>Storage Array based Local Replication</p>  <pre> graph LR     PH[Production Host] -- "Read/Write" --&gt; SA[Storage Array]     subgraph SA [Storage Array]         S[Source]         R[Replication]     end     SA -- "Read/Write" --&gt; BH[Backup Host]   </pre> <p>ii. Full Volume Mirroring</p> <p>iii. Pointer Based Full Volume Replication</p>	5  5	10

Staff Signature:

*Shanmugan*  
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*[Signature]*  
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Email: cityengineering123@gmail.com Website: www.cityengineeringcollege.ac.in  
Ph: 080 - 22560313 Mob: 98804 11365

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## INTERNAL ASSESSMENT BOOK

Name : Ayusha Kumari USN ICE2018001  
Branch ISE Semester 8th Section 'B'

Sub Code: 18CS822 Subject: SAN

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26/03/24		50	46	<i>[Signature]</i>
2.	Test - 2	18/04/24		50	36	<i>[Signature]</i>
3.	Test - 3	8/05/24		50	48	<i>[Signature]</i>

## CERTIFICATE

This is to certify that Mr./Ms. Ayusha Kumari bearing USN ICE2018001 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraya Technological University for Semester 8th Branch ISE for the academic year 20 24 - 20 24.

MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	26	10	36

*[Signature]*  
Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D

*[Signature]*  
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Kanakapura Main Road, BANGALORE - 560 061





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Email: cityengineering123@gmail.com Website: www.cityengineeringcollege.ac.in  
Ph: 080 22560311 Mob: 98804 11365



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## INTERNAL ASSESSMENT BOOK

Name: Amisha Rashminath USN: 1CE20DS002  
Branch: Information Science & Engineering Semester: 8<sup>th</sup> Section: B

Sub Code: 18CS82 Subject: Storage Area Networks

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26/02/2024		50	35	<i>[Signature]</i> 11/24/24
2.	Test - 2	18/04/2024		50	45	<i>[Signature]</i> 18/4/24
3.	Test - 3	8/5/2024		50	45	<i>[Signature]</i> 8/5/24

## CERTIFICATE

This is to certify that Mr./Ms. Amisha Rashminath bearing USN 1CE20DS002 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraya Technological University for Semester 8<sup>th</sup> Branch I.S for the academic year 20232024

	MARKS AWARDED		
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	25	10	35

*Amisha Rashminath*  
Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D

*Skandan*

PRINCIPAL

CITY ENGINEERING COLLEGE  
Kanakapura Main Road, BANGALORE - 560 061





# CITY ENGINEERING COLLEGE

Affiliated to VTU, Approved by Govt. of Karnataka, Bangalore  
Kanakapura Main Rd, Doddaballapur, Bangalore - 560 061  
Email: cityengineering12@yahoo.com Website: www.cityengineeringcollege.com  
Ph: 080-22359213 Mob: 98204 13365

NAAC ACCREDITED

## INTERNAL ASSESSMENT BOOK

Name: Likhith R.T USN: 11E20IS003  
Branch: I SE Semester: VII Section: E

Sub Code: 18CS822 Subject: SAN

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26-3-24		50	35	[Signature]
2.	Test - 2	18-4-24		50	30	[Signature]
3.	Test - 3	8-5-24		50	30	[Signature]

## CERTIFICATE

This is to certify that Mr./Ms. Likhith R.T USN: 11E20IS003 has satisfactorily completed the course of Internal assessment prescribed by the Vitesaraya Technological University for Semester VII Branch: I SE for the academic year 2023, 2024

	MARKS AWARDED		
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	22	10	32

Likhith R.T  
Signature of Student

[Signature]  
Signature of Staff Incharge

[Signature]  
Signature of HOD

[Signature]  
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CITY ENGINEERING COLLEGE, BANGALORE

Branch : IS

Semester : 8

Sl NO.	USN	18CS822
1	1CE20IS001	36
2	1CE20IS002	35
3	1CE20IS003	32

*verified  
my*

Draft, As Entered in VTU CIE Portal on 2024-05-25 11:54:15

*Shankar*

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Doddakallasandra, Bangalore – 560 062



## Department of Mechanical Engineering Circular

**This is to notify that 3<sup>rd</sup> Internals of 8<sup>th</sup> semester will be conducted on 10/05/2024**

**10.30am-12.00pm -18ME81 (Energy Engineering)**

**2.30pm-4.00pm-18ME822 (Tribology)**

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## Department of Mechanical Engineering 3<sup>rd</sup> IA Time Table

DATE	TIME	SUBJECT CODE
10-05-2024	10:30-12:30	18ME81
10-05-2024	2:30-4:30	18ME822

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## Department of Mechanical Engineering 8<sup>th</sup> semester 3<sup>rd</sup> Internal Duty Allotment

10/05/2024	10.30am-12.00pm	2.30pm-4.00pm
Faculty Name	PROF.ANIL KUMAR R	PROF.HARSHA VARDHAN U

S. Kaulan

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S. Kaulan

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## Department of Mechanical Engineering 8<sup>th</sup> semester 3<sup>rd</sup> Internal Duty Allotment

10/05/2024	10.30am-12.00pm	2.30pm-4.00pm
Room No	A307	A307

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## Department of Mechanical Engineering 8<sup>th</sup> semester 3<sup>rd</sup> Internal Attendance

SI No	USN	10.30am-12.00pm	2.30pm-4.00pm
		18ME81	18ME822
1	1CE20ME001	Suhus . B	Suhus . B
2	1CE20ME001	Abhilash.	Abhilash.
No of Absent		— Nil — Auk R	— Nil — Auk R

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Ph: 080 - 22560313 Mob: 98804 11365



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## INTERNAL ASSESSMENT BOOK

Name: Suhas B USN ICE20ME001

Branch Mechanical Semester VIII Section

Sub Code: 18ME81 Subject: Energy Engineering

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	26/03/2024	1-8	50	44	<i>[Signature]</i>
2.	Test - 2	19/04/2024	9-16	50	45	<i>[Signature]</i>
3.	Test - 3	10/05/2024	17-24	50	46	<i>[Signature]</i>

## CERTIFICATE

This is to certify that Mr./Ms: Suhas B bearing USN ICE20ME001 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraja Technological University for Semester 8<sup>th</sup> Branch Mechanical for the academic year 20 ..... 20 .....

MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	30	10	40
Obtained	27	10	37

*[Signature]*  
Signature of Student

*[Signature]*  
Signature of Staff Incharge

*[Signature]*  
Signature of H.O.D

*[Signature]*  
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USN

COURSE CODE: 18ME81

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CITY  
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FIRST INTERNAL TEST

PROGRAMME: MECHANICAL ENGINEERING  
COURSE NAME: Energy Engineering  
SEM: 8<sup>TH</sup> 'A'  
Duration: 1.30 Hrs

DATE: 26/03/2024  
TIME: 10:30AM – 12:00PM

MAX MARKS: 50

*Note: Answer any FIVE questions choosing at least one from each Part.*

Q no.	PART - A	M	CO'S	BT'S
1.	Explain briefly steps involved in coal handling.	10	C01	BT2
OR				
2.	With a neat sketch explain induced draught cooling tower.	10	C01	BT2
PART - B				
3.	With a neat sketch explain the working of Bensen boiler.	10	C01	BT2
OR				
4.	Explain the working of down draft gasifier.	10	C02	BT2
PART-C				
5.	Explain the following 1. Superheater 2, Air preheater	10	C01	BT2
OR				
6.	With a neat sketch explain horizontal and vertical axis wind machines	10	C03	BT2
PART-D				
7.	Explain Induced Draught System.	10	C01	BT2
OR				
8.	With a neat diagram, explain closed cycle Rankine cycle OTEC system.	05	C03	BT2
PART-E				
9.	With a neat sketch explain Pyranometer	10	C01	BT2
OR				
10.	With a neat sketch explain the working of pressurized water reactor.	06	C03	BT2

Blooms Taxonomy Levels (BTL)

BT1- Remembering BT2- Understanding BT3 – Applying BT4 – Analyzing BT5- Evaluating BT6- Creating.

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CITY ENGINEERING COLLEGE  
DEPARTMENT OF *Mechanical Engineering*

SCHEME FOR VALUATION

Internal Test ... *1<sup>st</sup>* .....

Semester & Section :- *8<sup>th</sup> & A*

Date: *26/03/2024*

Question No.	Details of the answer	Marks Distribution	Total Marks
1	Steps involved in coal handling	10	10
2.	Sketch Explanation	04 } 06 }	10.
3.	Sketch Explanation	04 } 06 }	10
4.	Sketch Explanation	04 } 06 }	10
5.	Superheater Air preheater	05 } 05 }	10
6.	Horizontal Axis machines Vertical Axis machine	05 } 05 }	10
7.	Sketch Explanation	04 } 06 }	10
8.	Sketch Explanation	04 } 06 }	10

*Staff*  
Staff

*Skandan*  
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HOD

CITY ENGINEERING COLLEGE

DEPARTMENT OF Mechanical Engineering

SCHEME FOR VALUATION

Internal Test 1<sup>st</sup>

Semester & Section 8<sup>th</sup> & A

Date:

Question No.	Details of the answer	Marks Distribution	Total Marks
9	Sketch Explanation	04 06	10
10.	Sketch Explanation	04 06	10

Staff

*Shankar*

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# Visvesvaraya Technological University

IA / CIE Report June / July 2024 Examination.

CITY ENGINEERING COLLEGE, BANGALORE

Branch : ME

Scheme : 2018

Semester : 8

SI NO.	USN	18ME81	18ME822	18MEP83	18MES84	18MEI85	STUDENT SIGNATURE
1	1CE20ME001	37	36	34	80	34	
2	1CE20ME002	26	25	24	53	25	
--x--	Faculty Signature						-----XXXXXXXX-----

\* - values are either optional subjects or the faculty has not yet entered the marks

TH - Theory part of CIE Marks (IPCC)

PR - Practical part of CIE Marks (IPCC)

T - Total CIE Marks (IPCC)

HOD

Seal and Signature

HEAD OF THE DEPARTMENT  
Mechanical Engineering  
CITY ENGINEERING COLLEGE  
Doddakallasandra, Kanakapura Main Road  
BANGALORE - 560 061

PRINCIPAL

Seal and Signature

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**CITY**  
ENGINEERING COLLEGE

07/05/2024

**CIRCULAR**

**Dear Students of 2<sup>nd</sup> Semester,**

The college's discipline committee, led by Principal, has decided to confiscate your mobile phones if you are found to have engaged in any kind of malpractice during the internal assessment. This is in an effort to enforce discipline during the assessment process.

*SKA...*  
7/5/24  
**PRINCIPAL**

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*SKA...*

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**CITY**  
ENGINEERING COLLEGE

07/05/2024

**1<sup>st</sup> INTERNAL ASSESSMENT SCHEDULE - 2<sup>nd</sup> SEMESTER**

Date	Time	Course Code		Course
15/05/2024 (Wednesday)	10.00am - 11.00am	P-CYCLE	BMATS201	Mathematics-II for CSE Stream
		C-CYCLE	BMATS201/BMATE201/ BMATC201	Mathematics-II for CSE Stream/Mathematics-II for EESI /Mathematics-II for Civil Engg Stream
	1.00pm- 2.00pm	P-CYCLE	BPWSK206	Professional writing skills in English
		C-CYCLE	BPWSK206	Professional writing skills in English
16/05/2024 (Thursday)	10.00am - 11.00am	P-CYCLE	BPHYS202	Applied Physics for CSE Stream
		C-CYCLE	BCHE202/ BCHEC202/ BCHEE202	Applied Chemistry for CSE Stream/ Applied Chemistry for Civil Engineering stream/
	1.00pm- 2.00pm	P-CYCLE	BETCK205H	Introduction to Internet of Things (IoT)
		C-CYCLE	BESCK204C	Introduction to Electronics Communication
17/05/2024 (Friday)	10.00am - 11.00am	P-CYCLE	BESCK204D + Civil Students	Introduction to Mechanical Engineering
		C-CYCLE	--	--
	1.00pm- 2.00pm	P-CYCLE	BPOPS203	Principles of Programming Using C
		C-CYCLE	BPLCK205B	Introduction to Python Programming

\*Note: 1. Changed Timings

2. IA for Courses not listed here will be conducted during 2<sup>nd</sup> IA

*Skauas*

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2nd SEMESTER- 1st INTERNAL ASSESSMENT

FACULTY INVIGILATION DUTY ALLOTMENT

08/05/2024

Sl.No	NAME OF THE FACULTY	Department	15/05/2024 (Wednesday)		16/05/2024 (Thursday)		17/05/2024 (Friday)		Total Number of Duties	Signature
			10.00am – 11.00am	1.00pm- 2.00pm	10.00am – 11.00am	1.00pm- 2.00pm	10.00am – 11.00am	1.00pm- 2.00pm		
1	Mrs. Vanitha G R	MAT		A306		A307			2	
2	Mrs. Rekha R	MAT		A305		A306			2	
3	Mrs. Anitha C V	MAT	A304		A305		A304	A305	4	
4	Miss. Janavi R	MAT	A305		A306		A305	A306	4	
5	Ms. Bhavitha B G	MAT	A305		A303		A304	A303	4	
6	Ms. Meghana D	HS		A304		A305			2	
7	Mrs. Swaroopini B S	HS	A302	A306	A107		A105		4	
8	Mr. Vishvakiran R. C.	ECE	A305	A302	A106		A106		4	
9	Mr. Gopikishan J	ECE	A302	A107	A105		A105		4	
10	Mr. Mahesh Basavaraj	AIML	A107	A106	A104		A104		4	
11	Mr. Harsha Vardhan U	ME	A104	A105	A104		A104		4	
12	Mr. Anil Kumar R	ME	A105	A104		A104	A105		4	

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13	Mrs. Shruthi Naik	ME	<del>A004</del>	<del>A103</del>		<del>A005</del>		A104	4	
14	Mr. Vinay Kumar S N	CV	<del>A103</del>	<del>A102</del>		<del>A102</del>		<del>A005</del>	4	
15	Ms. Spoorthi M	CSE	<del>A103</del>	<del>A002</del>		<del>A002</del>		<del>A005</del>	4	
16	Ms. Monisha G B	CSE	<del>A002</del>	<del>A002</del>		<del>A005</del>			3	
17	Mrs. Nayana R K	ISE	<del>A005</del>	<del>A005</del>		<del>A105</del>			3	
18	Mrs. Nayana H J	ISE	<del>A005</del>	<del>A004</del>		<del>A104</del>			3	
19	Mr. Mathivanan M	ISE	<del>A004</del>	<del>A004</del>		<del>A007</del>			3	
20	Mr. Dinesh	PHY	<del>A007</del>		<del>A007</del>		<del>A306</del>	<del>A103</del>	4	
21	Mr. Sadashiva	CHE		<del>A307</del>	<del>A006</del>		<del>A005</del>	<del>A105</del>	4	

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# CITY ENGINEERING COLLEGE

Doddakallasandra, Bangalore - 560 062

Room Allotment for 1st Internal Test\_UG - 2 Semester 15/16/17 May 2024

## ROOM NO:- A-307

Seat No.	II-A USN	Seat No.	II-A USN	Seat No.	II-A USN	Seat No.	II-A USN	Seat No.
1	1CE23AI001	2	15	1CE23AI008	16	29	1CE23AI015	30
3	1CE23AI002	4	17	1CE23AI009	18	31	1CE23AI016	32
5	1CE23AI003	6	19	1CE23AI010	20	33	1CE23AI017	34
7	1CE23AI004	8	21	1CE23AI011	22	35	1CE23AI018	36
9	1CE23AI005	10	23	1CE23AI012	24	37	1CE23AI019	38
11	1CE23AI006	12	25	1CE23AI013	26	39	1CE23AI020	40
13	1CE23AI007	14	27	1CE23AI014	28	41	1CE23AI021	42

## ROOM NO:- A-306

Seat No.	II-A USN	Seat No.	II-A USN	Seat No.	II-A USN	Seat No.	II-A USN	Seat No.
1	1CE23AI022	2	15	1CE23AI029	16	29	1CE23AI036	30
3	1CE23AI023	4	17	1CE23AI030	18	31	1CE23AI037	32
5	1CE23AI024	6	19	1CE23AI031	20	33	1CE23AI038	34
7	1CE23AI025	8	21	1CE23AI032	22	35	1CE23AI039	36
9	1CE23AI026	10	23	1CE23AI033	24	37	1CE23AI040	38
11	1CE23AI027	12	25	1CE23AI034	26	39	1CE23AI041	40
13	1CE23AI028	14	27	1CE23AI035	28	41	1CE23AI042	42

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**ROOM NO:- A-305**

Seat No.	II-A USN	Seat No.	II-A USN	Seat No.	II-A USN	Seat No.
1	1CE23AI043	2	15 1CE23AI051	16	29 1CE23AI058	30
3	1CE23AI044	4	17 1CE23AI052	18	31 1CE23AI059	32
5	1CE23AI045	6	19 1CE23AI053	20	33 1CE23AI060	34
7	1CE23AI047	8	21 1CE23AI054	22	35 1CE23AI061	36
9	1CE23AI048	10	23 1CE23AI055	24	37 1CE23AI062	38
11	1CE23AI049	12	25 1CE23AI056	26	39 1CE23AI063	40
13	1CE23AI050	14	27 1CE23AI057	28	41	42

**ROOM NO:- A-304**

Seat No.	II-B USN	Seat No.	II-B USN	Seat No.	II-B USN	Seat No.
1	1CE23IS001	2	15 1CE23IS009	16	29 1CE23IS016	30
3	1CE23IS002	4	17 1CE23IS010	18	31 1CE23IS017	32
5	1CE23IS003	6	19 1CE23IS011	20	33 1CE23IS018	34
7	1CE23IS004	8	21 1CE23IS012	22	35 1CE23IS019	36
9	1CE23IS005	10	23 1CE23IS013	24	37 1CE23IS020	38
11	1CE23IS006	12	25 1CE23IS014	26	39 1CE23IS021	40
13	1CE23IS008	14	27 1CE23IS015	28	41 1CE23IS022	42

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# CITY ENGINEERING COLLEGE

Civil / Electronics and communication engineering

II SEMESTER- SECTION: C - Chemistry Cycle - FIRST INTERNAL TEST

ROOM No:A-106

Sl No.	USN	DATE/SUBJECT CODES	
		15/5/2024	
		Morning	Afternoon
		BMATE201/ BMATC201	BPWSK206
1	ICE23CV001	AARUTH-S	Aaruthis
2	ICE23CV002	havanja.R	havanja.R
3	ICE23EC001	Ajoy kumar.R	Ajoy kumar.R
4	ICE23EC002	← AB →	← ABSENT →
5	ICE23EC003	<del>Arjun</del>	<del>Arjun</del>
6	ICE23EC004	Chiranj	Chiranj
7	ICE23EC005	Darsh	Darsh
8	ICE23EC006	Doshi..	Doshi..
9	ICE23EC007	Devika .M.	Devika .M.
10	ICE23EC008	A/S	A/S
11	ICE23EC009	Divya I	Divya I
12	ICE23EC010	G. Naveen Kumar	G. Naveen Kumar.
13	ICE23EC011	← AB →	← AB →
14	ICE23EC012	← Gopin →	Gopin
15	ICE23EC013	<del>G.P</del>	<del>G.P</del>
16	ICE23EC014	Ganesh	Ganesh
17	ICE23EC015	Hahina	Hahina
18	ICE23EC016	Harshitha.K	Harshitha.K
19	ICE23EC017	Ajay Jeevitha	Jeevitha
20	ICE23EC018	<del>Arjun</del> Arjun	Arjun
21	ICE23EC019	<del>Arjun</del> Karan	Karan
No. of Students Present		19	19
No. of Students Absent		02	02
Staff Signature			

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**Department of Chemistry II Semester**

Sub: Applied Chemistry for CS Stream

Max. marks: 25M

Sub code: BCHES202

Duration: 1 hour (10.00-11.00)

Date: 16/05/2024

**FIRST INTERNAL TEST**

Note:- Answer five questions, choosing one from each part.

Q.No.	Questions	Marks	CO's	L
<b>Part-A</b>				
1.	Define corrosion? Explain Electrochemical theory of corrosion taking iron as an example?	5	CO3	L2
OR				
2.	Explain polymer electrolyte membrane electrolysis (PEM)?	5	CO3	L2
<b>PART-B</b>				
3.	What are photovoltaic cells? Explain the construction working of solar cell/ PV cell?	5	CO3	L2
OR				
4.	Write a note on anodization?	5	CO3	L2
<b>PART-C</b>				
5.	Define Ion selective electrode? Explain construction and working of Glass electrode?	5	CO3	L3
OR				
6.	Explain the application of conductometry in the estimation of weak acid?	5	CO3	L3
<b>PART-D</b>				
7.	EMF of the cell $\text{Ag}/\text{AgNO}_3 (0.001\text{M})//\text{AgNO}_3 (X\text{M})/\text{Ag}$ is 0.0659V at 25°C. Find X.	5	CO3	L5
OR				
8.	A thick brass sheet of area 400 inches exposed to moist air. After 2 years of period, it was found to experience a weight loss of 375g due to corrosion. If the density of brass is $8.73\text{g/cm}^3$ , calculate CPR in mpy & mmpy?	5	CO3	L5
<b>PART-E</b>				
9.	Explain the conduction mechanism in polyacetylene through oxidative doping or through reductive doping?	5	CO4	L3
OR				
10.	Define $M_n$ , $M_w$ . In a polymer sample 100 molecules have molecular mass $10^3$ g/mol, 200 molecules have molecular mass $10^4$ g/mol and 250 molecules have molecular mass $10^5$ g/mol. Calculate $M_n$ , $M_w$ .	5	CO4	L5

 CO3--- Solve the problems in chemistry to describe the methods of engineering processes.  
 CO4--- Apply the basic concepts of chemistry to explain the chemical properties and processes.

L1-Remembering L2- Understanding L3-Applying L4- Analyzing L5-Evaluating.

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Kanakapura Main Road, BANGALORE - 560 061



CITY ENGINEERING COLLEGE

DEPARTMENT OF Chemistry

SCHEME FOR VALUATION

Internal Test I

Semester & Section II, A, B. (AIML & IS)

Date: 16/05/24

Question No.	Details of the answer	Marks Distribution	Total Marks
1.	EMF + reactions. Anode: $\text{Fe} \longrightarrow \text{Fe}^{2+} + 2e^{-}$ Cathode: Aerated & neutral, $\text{O}_2 + 2\text{H}_2\text{O} + 4e^{-} \longrightarrow 4\text{OH}^{-}$ Deaerated & neutral, $2\text{H}_2\text{O} + 2e^{-} \longrightarrow 2\text{H}_2 + \text{OH}^{-}$ Deaerated & acidic, $2\text{H}^{+} + 2e^{-} \longrightarrow \text{H}_2$	2+3	5M
2.	Anode: In metal coated on Porous 'C'. Cathode: Pt metal coated on Porous 'C'. Electrolyte: solid Porous Polymer electrolyte made of NAFION. Anode: $\text{H}_2\text{O} \longrightarrow \frac{1}{2}\text{O}_2 + 2\text{H}^{+} + 2e^{-}$ Cathode: $2\text{H}^{+} + 2e^{-} \longrightarrow \text{H}_2$ Components + reactions + fig.	2+2+1	5M
3.	Def + fig. + $E = nD + E_{\text{ref}}$	1+1+1+2	5M
4.	Fig + Expl.	1+4	5M
5.	Def + construction + working. $E_D = \frac{RT}{F} \ln c_2 - \frac{RT}{F} \ln c_1$ $- \frac{RT}{F} \ln c_1 + \frac{RT}{F} \ln c_2$ $E_D = 2.303 \frac{RT}{F} \ln \frac{c_2}{c_1}$	1+2+2	5M

Staff

S. Kanna

P. S. Sankar  
HOD



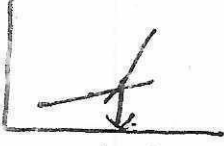
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DEPARTMENT OF Chemistry

SCHEME FOR VALUATION

Internal Test I

Semester & Section: II & A, B (AJML & JS)

Date:

Question No.	Details of the answer	Marks Distribution	Total Marks
6.	$E_4 = L_1 - 0.0591 pH$ $H_2COOH + NaOH \longrightarrow H_2COONa + H_2O$  <p>Vol. of NaOH</p> <p>Req<sup>n</sup> + Exp<sup>t</sup> + Graph</p>	<p>0</p> <p>1+2+1</p>	5M
7.	$E = \frac{2.303RT}{nF} \log \frac{C_2}{C_1}$ $0.0659 = \frac{2.303 \times 8.314 \times 298}{1 \times 96500} \log \left( \frac{x}{0.001} \right)$ $\frac{6359.35}{96500} = \log x - (-3)$ $1.145 - 3 = \log x$ $-1.855 = \log x, x = 0.0130 M$	<p>1+1+1+2</p>	5M
8.	$CPR = \frac{KW}{P \times A \times t}$ $\frac{820 \times 375 \times 1000}{8.73 \times 400 \times 2 \times 365 \times 24}$ $= \frac{200250000}{394609968}$ $= 0.50743 \text{ mpy}$	$CPR = \frac{87.6 \times 375 \times 1000}{8.73 \times 400 \times 6.45 \times 2 \times 365 \times 24}$ $= \frac{32850000}{394609968}$ $= 0.0832 \text{ mpy}$	

Staff

Skandan

P. P. S. S. S.  
HOD







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Email: cityengineering123@gmail.com Website: www.cityengineeringcollege.ac.in  
Ph: 080 - 22560313 Mob: 98804 11365



NAAC ACCREDITED

## INTERNAL ASSESSMENT BOOK

Name: Akash. D. Sidral USN ACE2315008.  
Branch: Information Science Semester 2<sup>nd</sup> Section 'B'  
Sub Code: BCHE5002 Subject: Chemistry.

Sl. No.	Particulars	Date	Page No.	Max. Marks	Marks Awarded	Signature of Staff Incharge
1.	Test - 1	10/11/21	1-7	25	22	[Signature]
2.	Test - 2	11/11/21		25	21	[Signature]
3.	Test - 3					
					43	21.5 x 0.6 = 13 + 10 = 23
					2	

## CERTIFICATE

This is to certify that Mr/Ms Akash. D. Sidral. bearing USN ACE2315008 has satisfactorily completed the course of Internal assessment prescribed by the Vivesvaraya Technological University for Semester 2<sup>nd</sup> Branch ISE for the academic year 2021 to 2022.

MARKS AWARDED			
	Test Marks	Assignment Marks	Final IA Marks
Maximum	15	10	25
Obtained	13	10	23

Akash D. Sidral.  
Signature of Student

[Signature]  
Signature of Staff Incharge

[Signature]  
Signature of H.O.D

S. Karthik  
PRINCIPAL  
CITY ENGINEERING COLLEGE  
Kanakapura Main Road, BANGALORE - 560 061





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Academic Year: 2023-24

## Department of Artificial Intelligence & Machine Learning

1. Name of the Student: ABHINAVAN
2. USN: 1CE21A5001
3. Year / Semester: 3<sup>rd</sup> / 5<sup>th</sup>.
4. Course Code / Course Name: 21AI54 / Principles of Artificial Intelligence.
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated: In second internal test, Part-A, Q/2 b is not evaluated.
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

Part A Question 2 is unelucted and given.  
mark.

Course Instructor

Maheshwari Patil.

[MAHESHWARI PATIL]

Vagdevi  
HOD

HOD

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Academic Year: 2023-24

## Department of Artificial Intelligence & Machine Learning

1. Name of the Student: *Shaik Aliyaf*
2. USN: *ICE21A1015*
3. Year / Semester: *3<sup>rd</sup> / V<sup>th</sup> SEM*
4. Course Code / Course Name: *21RM156 / RM&IPR.*
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated : *I, Internal-1, Q.1 b) SubDivision is not evaluated.*
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

*SubDivision b) is reevaluated and given 3 marks accordingly.*

Course Instructor

*[Signature]*  
[ VINDHYA.R ]

*[Signature]*  
HOD

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Academic Year: 2023-24

## Department of Computer Science & Engineering

1. Name of the Student: *Aishwarya K.H*
2. USN: *ICE22CS009*
3. Year / Semester: *II / III*
4. Course Code / Course Name: *BCS303 / Operating System*
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

*Student reported issue with totalling mistake, the same has been verified and rectified (23 made 24)*

Course Instructor

*Hina Nazneen*

HOD

*[Signature]*





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Academic Year: 2023-24

## Department of Computer Science & Engineering

1. Name of the Student: Aayutha . M
2. USN: ICE22CS018
3. Year / Semester: II / III
4. Course Code / Course Name: BCS303 / Operating System
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated ✓
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

Student reported answer from second internal has not been evaluated, the same has been addressed, and rectified.  
(15 made to 16)

Course Instructor

(Hina Nazneen)

HOD

*[Signature]*



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Academic Year: 2023-24

## Department of Electronics & Communication Engineering

1. Name of the Student: MANU G.S.
2. USN: ICE23EC610
3. Year / Semester: 2<sup>nd</sup> Year - 3<sup>rd</sup> Sem
4. Course Code / Course Name: BEC302 - DSD Verilog.
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated ✓
  - c) Absentees
  - d) Out of syllabus
6. Remarks: 10.5 updated to 15.5.  
Re-evaluated the Answer.

  
Course Instructor

  
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Academic Year: 2023-24

## Department of Electronics & Communication Engineering

1. Name of the Student: *ATHIRA GUPTAR*
2. USN: *1CE21EC004*
3. Year / Semester: *2023 / V*
4. Course Code / Course Name: *21RM156 / Research Methodology & Intellectual Property Rights*
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks: *Answer was evaluated but marks was not entered for the given question. Hence marks was entered and final marks updated*  
*17 updated to 19*
- Course Instructor  
*S. Prasad*
- C. S. Mahalingu*  
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Academic Year: 2023-24

## Department of Information Science & Engineering

1. Name of the Student: SAGAR.R.
2. USN: ICE22IS044
3. Year / Semester: 02/03
4. Course Code / Course Name: BCS306A / oops with Java.
5. Type of Grievances:
  - a) Total Mistake Total mistake.
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus
6. Remarks: Total mistake found, and Rechanged the correct mark.

  
Course Instructor

  
HOD



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Academic Year: 2023-24

## Department of Information Science & Engineering

1. Name of the Student: Bharath H.K
2. USN: ICE22IS008
3. Year / Semester: 2<sup>nd</sup> / 3<sup>rd</sup> sem
4. Course Code / Course Name: BCS304 / Data Structure
5. Type of Grievances: Part-E, Question no 9, NOT Evaluated.
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

Part-E, Question 9 - Re-evaluated and given Marks.

  
Course Instructor

  
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Academic Year: 2023-24

## Department of Applied Science & Humanities

1. Name of the Student: Adi.K.S
2. USN: ICE23IS004
3. Year / Semester: First Year / First sem
4. Course Code / Course Name: BMATS101 / Engineering mathematics I
5. Type of Grievances:
  - a) Total Mistake ✓
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks: After revaluation of total marks the original marks has been corrected from 7 to 13.

Vanitha (Vanitha.A.R.)  
Course Instructor

P. C. Bisen  
HOD





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Academic Year: 2023-24

## Department of Applied Science & Humanities

1. Name of the Student: Charitha.C
2. USN: ICE23CS033
3. Year / Semester: First year / First sem
4. Course Code / Course Name: BSFHK158 / scientific foundation of health.
5. Type of Grievances:
  - a) Total Mistake ✓
  - b) Answer not evaluated ✓
  - c) Absentees
  - d) Out of syllabus

6. Remarks: It was noted that previously recorded marks in the OMR sheet needed to be corrected. original marks has been changed from 25 to 27.

Course Instructor

MNS (Meghana.D)

P. S. Srinivas  
HOD



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Academic Year: 2023-24

## Department of Artificial Intelligence & Machine Learning

1. Name of the Student: *Kallesh. Rao*
2. USN: *ICE21AI010*
3. Year / Semester: *3rd Year / 6th Sem*
4. Course Code / Course Name: *21AI641 / Business Intelligence*
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated : *In Internal 3 Part B of 3 is not Evaluated*
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

*Question-3 is re-evaluated and given marks accordingly.*

Course Instructor

*[SANGEETHA.N]*

*N. Rang. B.*

*Vagdevi S*  
HOD

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Academic Year: 2023-24

## Department of Artificial Intelligence & Machine Learning

1. Name of the Student: *DIVYA . M*
2. USN: *ICE21A1008*
3. Year / Semester: *3<sup>rd</sup> / VI sem*
4. Course Code / Course Name: *21AD62 / Data Science & Its Application.*
5. Type of Grievances:
  - a) Total Mistake : *In Second Internal Test, Part-B, Q-3 was not counted.*
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus
6. Remarks: *Revaluated and counted 93*

*AL*

Course Instructor  
[NASRATH]

*Vagelen's*

HOD  
HOD

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Academic Year: 2023-24

## Department of Computer Science & Engineering

1. Name of the Student: *Abhishek, M. G*
2. USN: *ICE2ICS002*
3. Year / Semester: *3<sup>rd</sup> / 6<sup>th</sup> sem*
4. Course Code / Course Name: *2ICS63 / Computer Graphics and Image Processing*
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks:

*Assignment questions were not evaluated, same has been evaluated and the marks has updated and rectified. (20 marks were added for the total).*

Course Instructor

*Swetha*

Swetha. A

HOD

*[Signature]*



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Academic Year: 2023-24

## Department of Computer Science & Engineering

1. Name of the Student: Darshan M Y.
2. USN: IC62IC5031
3. Year / Semester: 3rd / 6th
4. Course Code / Course Name: 21CS62 / Full Stack Development.
5. Type of Grievances:

- ~~a) Total Mistake~~
- b) Answer not evaluated
- c) Absentees
- d) Out of syllabus

6. Remarks: The student reported with totalling error and the same has been verified and updated. (45 changed to 55).

*Vibhavi R.N.*  
Course Instructor

(VIBHAVI . R . N) .

HOD

*[Signature]*



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Academic Year: 2023-24

## Department of Electronics & Communication Engineering

1. Name of the Student: **KENCHAPPA Y.R.**
2. USN: **1CE21ECO10**
3. Year / Semester: **3<sup>rd</sup> Yr - 6<sup>th</sup> Sem**
4. Course Code / Course Name: **21EC63 - VLSI DESIGN**
5. Type of Grievances:
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus

6. Remarks: **28 updated to 38.**

**Re-Evaluated Answer**  
**[Signature]**  
Course Instructor

**[Signature]**  
HOD

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Academic Year: 2023-24

## Department of Electronics & Communication Engineering

1. Name of the Student: Raghu T. H.
2. USN: 1CE21EC401
3. Year / Semester: 2024 / VIII
4. Course Code / Course Name: 18EC81 Wireless and Cellular Communication.
5. Type of Grievances:

- a) Total Mistake ✓
- b) Answer not evaluated
- c) Absentees
- d) Out of syllabus

6. Remarks: One question marks was missed while doing total hence totating was redone in front of student and updated  
Course Instructor: S. Prasad - 37 updated to 43

*S. Prasad*  
HOD

Professor & Head  
Dept. of Electronics &  
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Academic Year: 2023-24

## Department of Information Science & Engineering

1. Name of the Student: Akash Kumar
  2. USN: ICE21IS002
  3. Year / Semester: 3<sup>rd</sup> / 6<sup>th</sup> sem
  4. Course Code / Course Name: 21IS63 / Software Testing.
  5. Type of Grievances:
    - a) Total Mistake
    - b) Answer not evaluated : In Second Internal, Part-D Q.7 is not evaluated.
    - c) Absentees
    - d) Out of syllabus
  6. Remarks: Part-D. Q.7 is reevaluated and given marks.
-   
Course Instructor
-   
HOD



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Academic Year: 2023-24

## Department of Information Science & Engineering

1. Name of the Student: *Shivamurthy N*
2. USN: *1CE2PS019*
3. Year / Semester: *3rd / VI H.*
4. Course Code / Course Name: *21ME652 / Renewable energy power plants*
5. Type of Grievances: *Answer not evaluated (Q.no-6, b-part)*
  - a) Total Mistake
  - b) Answer not evaluated
  - c) Absentees
  - d) Out of syllabus
6. Remarks: *Part - C. Q.no-6 Evaluated and Given marks.*

*[Signature]*  
Course Instructor

*[Signature]*  
HOD





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Academic Year: 2023-24

## Department of Applied Science & Humanities

1. Name of the Student: **KUSUMA, K**
2. USN: **ICEQ3IS046**
3. Year / Semester: **First Year / 2<sup>nd</sup> semester**
4. Course Code / Course Name: **1**
5. Type of Grievances:
  - a) Total Mistake ✓
  - b) Answer not evaluated ✓
  - c) Absentees
  - d) Out of syllabus

6. Remarks: **After a thorough review of the answer booklet it was found that answer was not evaluated. The original marks have been revised from (15 to 18).**

  
Course Instructor  
**(Dr. Suniltra N)**

  
HOD



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Academic Year: 2023-24

## Department of Applied Science & Humanities

1. Name of the Student: **vinuth. P. Shetty**
2. USN: **ICE22CS176**
3. Year / Semester: **2<sup>nd</sup> year / 4<sup>th</sup> semester**
4. Course Code / Course Name: **BCS301 / Discrete Mathematical structure**
5. Type of Grievances:
  - a) Total Mistake ✓
  - b) Answer not evaluated ✓
  - c) Absentees
  - d) Out of syllabus

6. Remarks: **upon revaluation of the booklet, it was determined that answer was not evaluated. This score has been revised from 15 to 24.**

**Vaith (Vanilka.G.R)**  
Course Instructor

**P. Anil Kumar**  
HOD