



ARKA JAIN
University
Jharkhand



[18-11-2025]
END SEM EXAMINATION
School of Engineering & IT

Program	Computer Science & Engineering	Branch	Diploma
Subject Name	Data Warehousing & Data Mining	Session	Odd, 2025-26
Semester	V	Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will come under Unfair Means and will Result in the Cancellation of the Paper(s). 		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

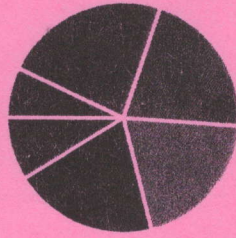
Section A (Each question Carry 02 Marks from Q1-i to x - 20 Marks)

Q. N	QUESTIONS	Marks	COs	KL
1				
i	Define data mining.	2	CO1	KL1
ii	Explain the term "Data Preprocessing" in the context of data mining.	2	CO1	KL2
iii	Define data warehouse.	2	CO1	KL1
iv	Explain the difference between OLAP and OLTP.	2	CO1	KL2
v	List any two applications of frequent pattern mining.	2	CO1	KL1
vi	Describe what pattern evaluation methods are used for.	2	CO1	KL2
vii	Define the term 'lazy learner' in classification.	2	CO1	KL1
viii	Explain how a decision tree is used for classification.	2	CO1	KL2
ix	Define cluster analysis.	2	CO1	KL1
x	Explain the difference between partitioning and hierarchical clustering.	2	CO1	KL2

Student will have general idea about Data Warehousing and Data Mining techniques, will be able to explore further and effectively use related tools.

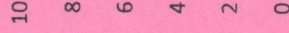
GRAPHICAL REPRESENTATION

Bloom's level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

Course Outcome wise Marks Distribution



CO-1

Section B (Answer any FOUR out of SIX) – 20 Marks

(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Differentiate between data transformation and data reduction.	05	CO1	KL4
3	Identify where OLAP can be applied in a business scenario such as retail or banking.	05	CO1	KL3
4	How would you apply frequent itemset mining in market basket analysis?	05	CO1	KL3
5	Compare the Apriori algorithm and FP-Growth algorithm briefly.	05	CO1	KL4
6	Apply the k-NN algorithm to classify a new data point given its nearest neighbors.	05	CO1	KL3
7	Differentiate between rule-based classification and decision tree classification.	05	CO1	KL4

Section C (Answer any THREE out of FIVE) – 30 Marks

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Evaluate the impact of poor data quality on data mining outcomes and discuss the importance of preprocessing.	10	CO1	KL5
9	Describe the steps involved in designing a data warehouse for a retail business, including schema selection.	10	CO1	KL3
10	Define frequent patterns and explain their role in association mining.	10	CO1	KL1
11	Illustrate the working of the Naive Bayesian classifier with an example.	10	CO1	KL3
12	Define cluster analysis and describe the main types of clustering structures.	10	CO1	KL1



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[20-11-2025]
END SEM EXAMINATION
School of Engineering & IT

Program	Computer Science & Engineering		Branch	Diploma
Subject Name	Information Security		Session	Odd, 2025-26
Semester	V		Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page * Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phone</u> or any kind of <u>Written Material</u>, <u>Arguments with the Invigilator</u> or <u>Discussion with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Paper(s)</u>. 			
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating	
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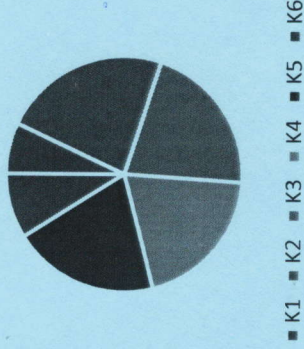
Section A (Each question Carry 02 Marks from Q1-i to x - 20 Marks)

Q.N	QUESTIONS	Marks	COs	KL
1				
i	Explain Information Security.	2	CO1	KL2
ii	Define the basic components of Information Security.	2	CO1	KL1
iii	Illustrate ISO 27001.	2	CO2	KL3
iv	Explain Vulnerabilities, Threats.	2	CO1	KL2
v	Explain Man-in-the-Middle.	2	CO2	KL2
vi	Define Malicious Code.	2	CO1	KL1
vii	Explain Intellectual Property.	2	CO2	KL2
viii	Define Virus, Worm.	2	CO2	KL1
ix	Illustrate Malware, Spyware	2	CO2	KL3
x	Illustrate Mail Bombing.	2	CO2	KL3

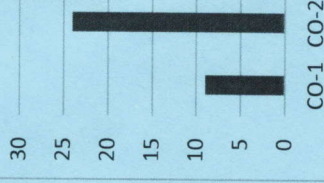
Course Outcomes	CO1	Understanding of security needs and issues of IT infrastructure.
	CO2	Have basic skills on security audit of networks, operating systems and application Software.

GRAPHICAL REPRESENTATION

Bloom's level wise Marks Distribution



Course Outcome wise Marks Distribution

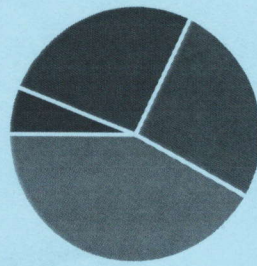


Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
2	Compare DOS and DDOS.	05	CO1	KL4
3	Compare Expert Hacker and Script Kiddies.	05	CO2	KL4
4	Explain the challenges in Deliberate Software Attacks.	05	CO2	KL2
5	Compare Spyware and Adware.	05	CO2	KL4
6	Explain the security measures against deliberate software attacks.	05	CO1	KL2
7	Define the deviations in quality of service by service providers.	05	CO2	KL1
Section C (Answer any THREE out of FIVE) – 30 Marks (Each question Carry 10 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain Hoaxes, Unprotected shares, back Doors, Password Crack and Brute Force.	10	CO1	KL2
9	Illustrate Digital Signature. How does it ensure data security?	10	CO2	KL3
10	Explain how does antivirus work to secure a system?	10	CO2	KL2
11	Compare Authorization and Authentication.	10	CO1	KL4
12	Explain the functions of key network security products such as Firewalls, IDS/IPS, VPN Concentrators, and Content Screening Gateways.	10	CO2	KL2

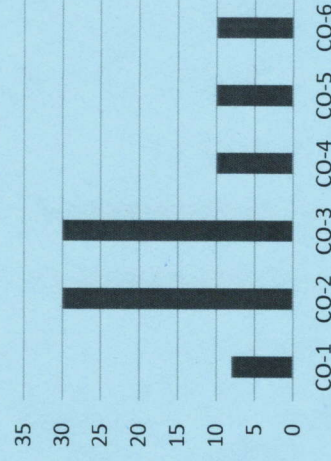
CO1	Describe the basic concepts, terminology and technology of e-commerce/e-government.
CO2	Understand the major federal and state laws and regulations impacting the evolution of e-government
CO3	Develop skills to critically evaluate government web sites and services against current best practice principles and standards.
CO4	Analyze new introductory ideas and practices followed in a selected number of e-Governance initiatives in India
CO5	Support the policy and social issues facing agencies in implementing e-government initiatives.
CO6	Construct basic business case and government IT management concepts in preparing e- government proposals, plans or strategies.

GRAFICAL REPRESENTATION

Bloom's level wise Marks Distribution



Course Outcome wise Marks Distribution



ARKA JAIN University
Jharkhand



[25-11-2025]

END SEM EXAMINATION
School of Engineering & IT

Program	EEE/ CSE	Branch	Diploma
Subject Name	Introduction to E-Governance	Session	Odd, 2025-26
Semester	V	Year	Nov 2025
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phone</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussion with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Paper(s)</u>. 		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N1	QUESTIONS	Marks	COs	KL
i	What is e-governance?	2	CO1	K1
ii	What are the key components of an e-governance system?	2	CO 1	K1
iii	What is the role of information and communication technology (ICT) in e-governance?	2	CO2	K1
iv	Describe the concept of government-to-business (G2B) services in e-governance.	2	CO2	K2
v	Describe the concept of government-to-citizen (G2C) services in e-governance.	2	CO2	K2
vi	Explain the challenges faced in implementing e-governance.	2	CO3	K3
vii	How does e-governance improve transparency in government operations?	2	CO3,C O5	K2
viii	What is the role of public-private partnerships (PPPs) in e-governance?	2	CO2	K3
ix	What is the role of artificial intelligence (AI) in e-governance?	2	CO4,C O5	K4
x	What are the benefits of implementing blockchain technology in e-governance?	2	CO3,C O6	K3

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
2	What are the key components of an e-governance system? Discuss their roles and interactions within the system.	05	CO1	K2
3	What are the benefits of implementing blockchain technology in e-governance? How does blockchain enhance transparency and security?	05	CO3	K2
4	What are the privacy concerns related to e-governance? How can these concerns be addressed to protect citizen information?	05	CO3	K2
5	Explain the significance of user feedback in improving e-governance services. How can feedback be effectively collected and utilized?	05	CO4	K4
6	Discuss the challenges & barriers of implementing e-Governance in India.	05	CO3,C O6	K2
7	How can cloud-based services improve e-governance efficiency?	05	CO3,C O5	K4

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Examine the role of information and communication technology (ICT) in e-governance. What are the critical technologies driving e-governance, and how do they contribute to its success?	10	CO2	K4
9	Discuss the various models of e-governance (G2C, G2B, G2G, G2E). How do these models differ, and what are the specific challenges and benefits associated with each?	10	CO2	K3
10	Evaluate the MyGov platform. Propose enhancements or new features that could improve its effectiveness in citizen engagement and government transparency?	10	CO3	K4
11	Analyse how e-governance contributes to the establishment of good governance. Propose a framework that outlines key strategies for leveraging e-governance to enhance governmental effectiveness and public trust?	10	CO2,C O5	K4

12	Assess the National e-Governance Plan (NeGP). Propose a revised or new plan that addresses any shortcomings and better aligns with contemporary technological and governance? Needs.	10	CO2, CO6	K3
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[27-11-2025]

END SEM EXAMINATION
School of Engineering & IT

Program	Computer Science & Engineering	Branch	Diploma
Subject Name	Mobile Computing	Session	Odd, 2025-26
Semester	V	Year	Nov, 2025
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; don't Write on the 1st Page Backside Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of Mobile Phone or any kind of <u>Written Material</u>, Arguments with the Invigilator or Discussion with Co-Student will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Paper(s)</u>. 		
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Section A (Each question Carry 02 Marks from Q1-i to x - 20 Marks)				
Q.N	QUESTIONS	Marks	COs	KL
1				
i	Differentiate between mobile computing and wireless networking.	2	CO1	KL2
ii	Explain what is encapsulation in mobile IP?	2	CO1	KL2
iii	List any two features of Symbian.	2	CO1	KL2
iv	Explain microkernel operating system?	2	CO1	KL4
v	Explain how an application can be developed using the Android SDK?	2	CO1	KL1
vi	Describe at least three applications of mobile ad hoc networks?	2	CO1	KL1
vii	Mention the important differences between a mobile ad hoc network and a Cell phone network?	2	CO1	KL4
viii	Describe the important functional difference between 1G, 2G and 3G cellular networks?	2	CO1	KL2
ix	Is 3G cellular wireless technology superior to 2G technology? Justify your answer?	2	CO1	KL4
x	State Advantages and Disadvantages of GPRS Technology.	2	CO1	KL2

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
2	Summarize the issues in the Wireless MAC Protocols.	05	CO1	KL2
3	Discuss the basic scheme of the CDMA protocol?	05	CO1	KL1
4	Illustrate the schematic model of Mobile IP with the neat sketch?	05	CO1	KL4
5	Describe GSM architecture and its services in detail?	05	CO1	KL1
6	Formulate a plan to create mobile IP along with basic requirements?	05	CO1	KL4
7	Do mobile phones affect the human body negative? Explain your answer.	05	CO1	KL6
Section C (Answer any THREE out of FIVE) – 30 Marks (Each question Carry 10 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	Describe in detail about TDMA, FDMA, and CDMA and tabulate the differences among them	10	CO1	KL1
9	Define the functions of the presentation tier, application tier and data tier of Mobile Computing Environment	10	CO1	KL2
10	Explain the transport technologies used across Generations of Cellular Networks	10	CO1	KL1
11	A major task of the designer of a wireless sensor network is prolonging the life of the network. Explain how this is achieved while designing a MANET	10	CO1	KL1
12	Explain how multicast routing is carried out in ad-hoc networks	10	CO1	KL2

Course Outcomes	CO1	Will be able to develop and deploy basic mobile applications.
GRAPHICAL REPRESENTATION		
Bloom's level wise Marks Distribution		<p>■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6</p>
Course Outcome wise Marks Distribution		
<p>CO-1 CO-2 CO-3 CO-4 CO-5 CO-6</p>		



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[22-11-2025]

END SEM EXAMINATION
School of Engineering & IT

Program	Computer Science Engineering		Branch	Diploma
Subject Name	Internet of Things		Session	Odd, 2025-26
Semester	V		Year	Nov, 2025
Time: 3 Hour Max. Marks: 70	<ul style="list-style-type: none"> Start writing from 2nd page onwards; <u>don't Write on the 1st Page</u> * <u>Backside</u> Answer all Questions of Section A (Compulsory) Answer Any Four out of Six of Section B Answer Any Three out of Five of Section C Possession of <u>Mobile Phone</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussion with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Paper(s)</u>. 			
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Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N	QUESTIONS	Marks	COs	KL
1				
i	Define the Internet of Things.	2	CO1	K1
ii	List out IoT enabling Technologies.	2	CO1	K1
iii	List the types of Arduino.	2	CO2	K1
iv	What is the function of an IoT gateway?	2	CO1	K2
v	Define wireless sensor networks.	2	CO1	K1
vi	List out protocols of link layer.	2	CO1	K1
vii	What is the purpose of digital pins in Arduino?	2	CO1	K2
viii	Define Actuators.	2	CO1	K1
ix	How many layers are there in TCP/IP protocol suit?	2	CO1	K2
x	What is data analytics in IoT?	2	CO2	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Differentiate between Sensors and Actuators with suitable examples.	5	CO1	K3
3	Write applications of IoT in detail.	5	CO2	K2
4	What are the various challenges to implement IoT?	5	CO2	K4
5	Explain the basic architecture of IoT with a neat diagram.	5	CO1	K3
6	Analyze how IoT can be applied in agriculture to improve productivity.	5	CO2	K4
7	Describe the role of sensor networks in IoT systems.	5	CO2	K3

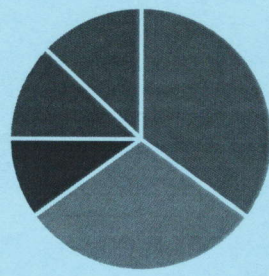
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Evaluate the security and privacy challenges in IoT implementations.	10	CO2	K5
9	Compare various IoT communication protocols (MQTT, CoAP, HTTP).	10	CO1	K3
10	How to implement IoT with Raspberry Pi?	10	CO2	K4
11	Discuss an IoT-based healthcare case study, such as patient health monitoring using wearables.	10	CO2	K4
12	With a neat diagram, explain an IoT-based agriculture monitoring system.	10	CO2	K3

Course Outcomes	CO1	CO2
	Students will have good understanding of various aspects of IoT.	Understand and know some tools and have basic implementation skills.

GRAPHICAL REPRESENTATION

Bloom's level wise Marks Distribution



Course Outcome wise Marks Distribution

