

M 14/06/24 60



ARKA JAIN University
Jharkhand



END SEM EXAMINATION
School of Engineering & IT

| | | | | |
|------------------------------------|--|----------------|-----------------|-----------|
| Branch | Computer Science and Engineering | | Program | Diploma |
| Subject Name | Artificial Intelligence & Machine Learning | | Semester | IV |
| | | | Year | June 2024 |
| 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</u> in the <u>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. N 1 | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|-----|
| i | List some of the uninformed search techniques. | 2 | CO2 | KL3 |
| ii | What is the difference between informed search, and uninformed search? | 2 | CO2 | KL1 |
| iii | Write the difference between raw data and processed data. Cite an example. | 2 | CO1 | KL1 |
| iv | Discuss the typical objectives of data transformation in the context of data analysis. | 2 | CO4 | KL2 |
| v | What are the different tools that are used in Machine Learning today? | 2 | CO2 | KL1 |
| vi | Why was the concept of machine learning introduced? | 2 | CO2 | KL3 |
| vii | What is the role of activation functions in neural networks? | 2 | CO2 | KL4 |
| viii | Write the applications of Deep Neural Network. | 2 | CO3 | KL1 |
| ix | How neural networks are shaping the future of artificial intelligence? | 2 | CO2 | KL3 |
| x | Explain any 2 basic difference between hard margin and soft margin in SVMs. | 2 | CO1 | KL5 |

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

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|-----|
| 2 | Write a note on Breadth First search (BFS) and explain it with the help of an example. | 05 | CO4 | KL1 |
| 3 | Write the predicate forms of the followings. (5M) (i) All indoor games are easy (ii) If you will not work hard, you will fail (iii) All Romans were either loyal to Caesar or hated him. (iv) All cats are mammals (v) Ravi only likes hockey game. | 05 | CO2 | KL3 |
| 4 | Give a detailed note on Apriori Algorithm. | 05 | CO2 | KL4 |
| 5 | What is the main key difference between supervised and unsupervised machine learning? | 05 | CO4 | KL1 |
| 6 | What is a support vector machine (SVM) and what problem does it aim to solve? | 05 | CO2 | KL1 |
| 7 | Explain any Back Propagation Algorithm in detail. | 05 | CO2 | KL2 |

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

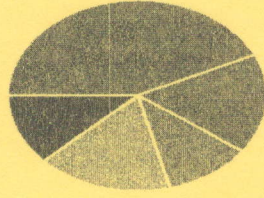
| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|---|-------|-----|-----|
| 8 | Define the following problems. What types of control strategy is used in the following problem. (a) The missionaries and cannibals' problems (b) Water jug Problem. | 10 | CO2 | KL1 |
| 9 | How do you define a problem as state space search? Clarify it with the help of an example. | 10 | CO1 | KL2 |
| 10 | Discuss challenges and considerations specific to data transformation in different domains or industries. | 10 | CO4 | KL1 |
| 11 | What are Biological Neurons? How they help in creating artificial neuron model. | 10 | CO3 | KL5 |
| 12 | Explain the concept of Lagrange multipliers in the context of the SVM optimization problem | 10 | CO3 | KL4 |

CO- Course Outcomes, **KL- Knowledge Level,** **PO - Program Outcome**

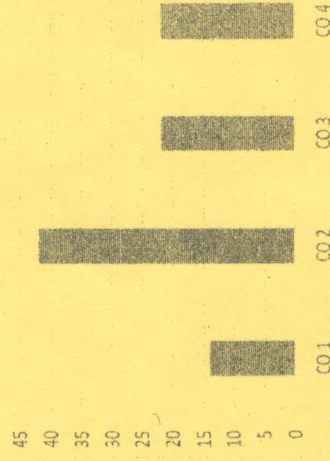
| Course Outcomes | CO1 | CO2 | CO3 | CO4 |
|--|-----|-----|-----|-----|
| Understanding the basics of Data Analysis skills through artificial intelligence | | | | |
| Understanding and Creating AI/ML solutions for various fundamental problems. | | | | |
| To inculcate nontrivial understanding of the real-world problems. | | | | |
| Able to understand and apply various Data decomposition and analysis schemes. | | | | |

GRAFICAL REPRESENTATION

Bloom's level-wise Marks Distribution



Course Outcome-Wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6



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School of Engineering & IT

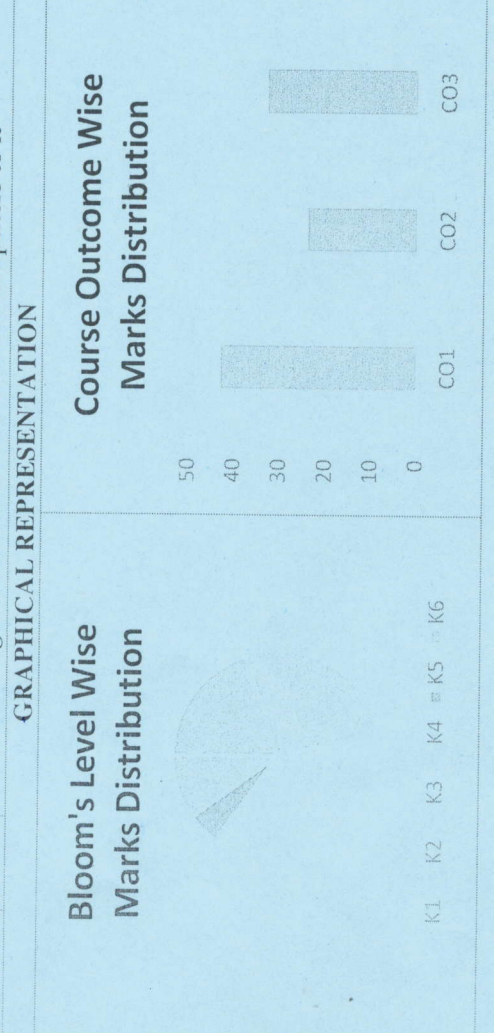
| | | | |
|--------------|----------------------------------|----------|-----------|
| Branch | Computer Science and Engineering | Program | Diploma |
| Subject Name | Computer Networks | Semester | IV |
| | | Year | June 2024 |

Time: 3 Hour
Max. Marks : 70

- 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 Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.

| | | | |
|----------------------|--------------------|----------------|-----------------|
| Knowledge Level (KL) | K1 : Remembering | K3 : Applying | K5 : Evaluating |
| | K2 : Understanding | K4 : Analysing | K6 : Creating |

| | | |
|-----------------------|--|----------------------|
| CO - Course Outcomes, | KL - Knowledge Level, | PO - Program Outcome |
| CO1 | Understanding of computer networks, issues, limitations, options available | |
| CO2 | Understanding of the care that needs to be taken while developing applications designed to work over computer networks | |
| CO3 | Able to configure basic LAN and connect computers to it | |





| Section A (Each question Carry 02 Marks from Q1-i to x) 20 Marks) | | | |
|---|---|-------|--------|
| Q. N | QUESTIONS | Marks | COs |
| 1 | | | KL |
| i | What is switching? Name different types of switching. | 2 | CO1 K1 |
| ii | What is half-duplex mode of transmission? | 2 | CO1 K1 |
| iii | Describe routing protocol? | 2 | CO3 K3 |
| iv | Name 2 network layer protocol. | 2 | CO3 K1 |
| v | Write functions of bridge. | 2 | CO1 K1 |
| vi | What is post office protocol? | 2 | CO2 K1 |
| vii | Discuss connectionless service. | 2 | CO3 K2 |
| viii | What are static and dynamic routing tables? | 2 | CO3 K4 |
| ix | What do you understand by CSMA/CD? | 2 | CO1 K2 |
| x | What is single bit error and burst error? | 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 | Define TCP. Discuss the operations of TCP. | 5 | CO1 | K2 |
| 3 | Compare circuit-switching and packet switching. | 5 | CO1 | K4 |
| 4 | What do you understand by network topology? Classify it and Explain ring and bus topology. | 5 | CO1 | K2 |
| 5 | Describe bridges and gateways. | 5 | CO2 | K3 |
| 6 | Find the class of below addresses: (a) 178.5.78.90 (b) 226.11.14.15 (c) 21.134.35.67 (d) 211.230.23.45 (e) 191.23.45.56 | 5 | CO3 | K5 |
| 7 | Compare UDP and TCP. | 5 | CO2 | K4 |

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

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|----|
| 8 | Discuss the functionalities of below layers: a) Network layer b) Transport layer | 10 | CO1 | K4 |
| 9 | What are guided transmission media? Explain coaxial cables and optical fiber cables with proper diagrams | 10 | CO1 | K1 |
| 10 | Illustrate and explain distance vector routing. | 10 | CO2 | K2 |
| 11 | Discuss in detail various error detection methods. | 10 | CO3 | K3 |
| 12 | A bit stream 100100 is transmitted using the standard CRC method. The divisor is 1101. What is the actual bit string transmitted | 10 | CO3 | K6 |

| | | | |
|---|---|---|----------------------------------|
|   | | END SEM EXAMINATION School of Engineering & IT | |
| Branch | Computer Science and Engineering | Program | Diploma |
| Subject Name | Introduction to DBMS | Semester | IV |
| | | Year | June 2024 |
| Time: 3 Hour Max. Marks : 70 | • 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</u> in the <u>Cancellation of the Paper(s)</u> . | | |
| Knowledge Level (KL) | K1 : Remembering K2 : Understanding | K3 : Applying K4 : Analysing | K5 : Evaluating K6 : Creating |

| Section A (Each question Carry 02 Marks from Q1- i to x) 20 Marks) | | | |
|---|--|-------|------------|
| Q. N1 | QUESTIONS | Marks | COs |
| i | Define data redundancy. | 2 | CO1 KL2 |
| ii | What are the different types of languages of DBMS system? | 2 | CO1 KL2 |
| iii | Distinguish between single and Multivalued attributes. | 2 | CO2 KL4 |
| iv | List the advantages of DBMS. | 2 | CO2 KL3 |
| v | Define the term Meta Data. | 2 | CO2 KL1 |
| vi | Draw any 1 Entity Relationship diagram components and their meaning. | 2 | CO3 KL2 |
| vii | What is the use of Group by keyword in SQL? | 2 | CO5 KL1 |
| viii | Name any 4 constraints in relational database management system. | 2 | CO4 KL2 |
| ix | Differentiate between Universal Quantifiers and Existential Quantifiers. | 2 | CO3 KL4 |
| x | Draw an example of many to one relationship. | 2 | CO4 KL6 |

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

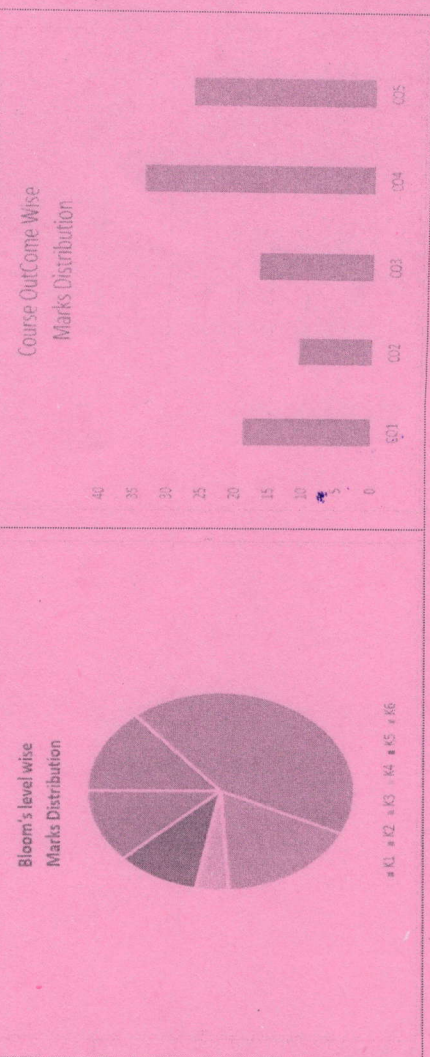
| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|----|
| 2 | Explain the functions and capabilities of Data Base Management System. | 05 | CO1 | K2 |
| 3 | What is an Entity? Explain different types of Attributes. | 05 | CO3 | K2 |
| 4 | Illustrate the 3-level schema architecture. | 05 | CO2 | k3 |
| 5 | What is a Join? Discuss about various joins used in SQL. | 05 | CO4 | K3 |
| 6 | Illustrate the term Normalization. | 05 | CO4 | K3 |
| 7 | What is Functional Dependency? | 05 | CO5 | K2 |

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

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|---|-------|-----|----|
| 8 | Compose the following keys with the help of an example. <ul style="list-style-type: none"> • Super Key • Primary Key • Foreign Key | 10 | CO4 | K6 |
| 9 | What is the difference between relational algebra and relational calculus? | 10 | CO4 | K1 |
| 10 | Design and explain the Architecture of DBMS. | 10 | CO1 | K5 |
| 11 | Explain about Selection, Projection, Rename, division and Cartesian product operations in relational algebra? | 10 | CO3 | K2 |
| 12 | Given a relation R(A, B, C, D) and Functional Dependency set FD = { AB → CD, B → C }, Evaluate whether the given R is in 2NF? If not convert it into 2 NF. | 10 | CO5 | K2 |

| Course Outcomes | CO1 | CO2 | CO3 | CO4 | CO5 |
|--|-----|-----|-----|-----|-----|
| Have a broad understanding of database concepts and database management system software | | | | | |
| Have a high-level understanding of major DBMS components and their function | | | | | |
| Be able to model an application's data requirements using conceptual modelling tools like ER diagrams and design database schemas based on the conceptual model. | | | | | |
| Be able to write SQL commands to create tables and indexes, insert/update/delete data, and query data in a relational DBMS. | | | | | |
| Be able to program a data-intensive application using DBMS APIs | | | | | |

GRAPHICAL REPRESENTATION



M 24/06/24 G



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Jharkhand



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School of Engineering & IT

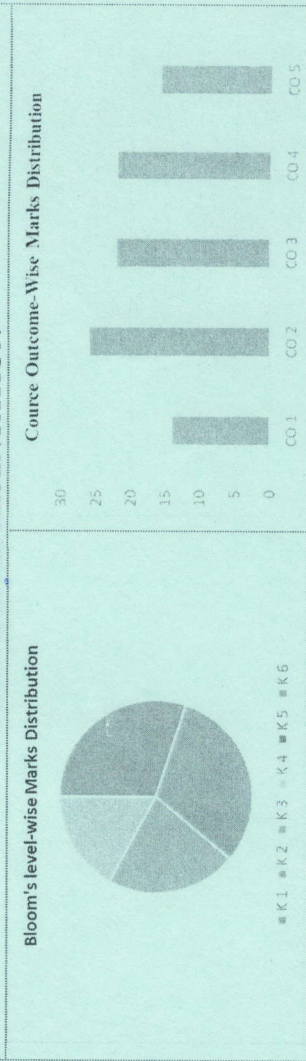
| | | | |
|---------------------------------|---|----------------|-----------------|
| Branch | Computer Science and Engineering | Program | Diploma |
| Subject Name | Web Technologies | Semester | IV |
| | | Year | June 2024 |
| Time: 3 Hour Max. Marks : 70 | <ul style="list-style-type: none"> Start 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 1 | QUESTIONS | Marks | COs KL |
| i | Write briefly about PHP function. | 2 | CO5 KL1 |
| ii | Define the term "Servlet API". | 2 | CO2 KL1 |
| iii | Write a brief note is JSP? | 2 | CO1 KL1 |
| iv | Differentiate between cookies and sessions. | 2 | CO4 KL2 |
| v | Define the term "Websrver". | 2 | CO1 KL1 |
| vi | Write down the advantages of JavaScript. | 2 | CO1 KL3 |
| vii | How Firewall system protects your computer. | 2 | CO2 KL4 |
| viii | What do you mean by DTD in XML? | 2 | CO3 KL1 |
| ix | Why HTTP Protocol should be followed? | 2 | CO2 KL2 |
| x | What do you mean by the term web technology? Write the advantages of it. | 2 | CO1 KL2 |

CO- Course Outcomes, **KL-** Knowledge Level, **PO** – Program Outcome

| | |
|-----|---|
| CO1 | Understanding the basics of internet and its connections, web browsers. |
| CO2 | Understanding client-server architecture and use in internet. |
| CO3 | Able to configure basic LAN and connect computers to it. |
| CO4 | Able to combine HTML, CSS, javascript for form validation. |
| CO5 | Understanding the implementation of PHP with database. |

GRAFICAL REPRESENTATION



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

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|---|-------|-----|-----|
| 2 | Discuss Proxy Servers in detail. Draw schematic diagram. | 05 | CO4 | KL1 |
| 3 | Define List Tag in HTML with an example. | 05 | CO2 | KL1 |
| 4 | What is CSS? Explain it with example. | 05 | CO2 | KL4 |
| 5 | How do you declare a variable and use that variable in Java Script? | 05 | CO4 | KL3 |
| 6 | Explain in brief about the life cycle of a servlet. | 05 | CO2 | KL2 |
| 7 | Write the FORMAT of HTML PROGRAM. | 05 | CO2 | KL3 |

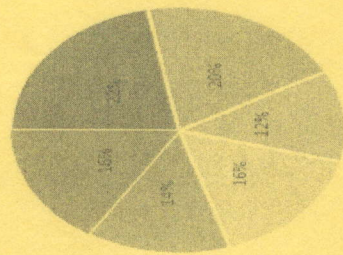
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|-----|
| 8 | Write PHP code to create a login page for a web application. | 10 | CO5 | KL1 |
| 9 | Explain Web Services ARCHITECTURE with a focus on its roles and operations. | 10 | CO1 | KL2 |
| 10 | Differentiate between 2-tier and 3-tier architecture. | 10 | CO4 | KL4 |
| 11 | Explain the followings with suitable example in Java Scripts. a. Function definition, b. Function calling c. Function Parameter d. Return type | 10 | CO3 | KL3 |
| 12 | What is an 'Event'? How are events handled in Java Script? | 10 | CO3 | KL2 |

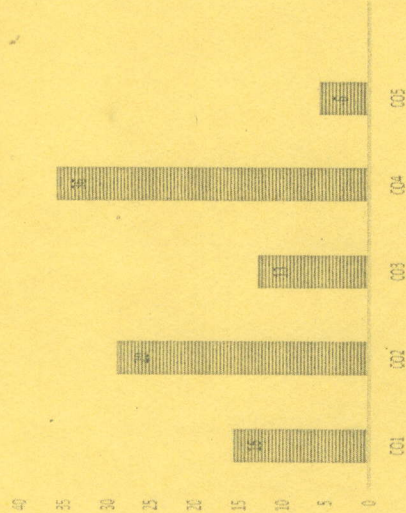
| | |
|-----|--|
| CO1 | Able to demonstrate basic knowledge about Operating System |
| CO2 | Develop an understanding of various DOS, Linux commands |
| CO3 | Able to create a program, process, threads, and execute them |
| CO4 | Design and implement file management system |
| CO5 | To understand various types of files and operations on them |

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



COURSE OUTCOME WISE MARKS DISTRIBUTION



ARKA JAIN University
Jharkhand



Branch
Computer Science and Engineering

Program
Diploma

Subject Name
Operating Systems

Semester
IV

Year
June 2024

- Start writing from 2nd page onwards; don't Write on the 1st Page Backside
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Time: 3
Hour Max.
Marks : 70

Knowledge Level (KL)

K1 : Remembering
K2 : Understanding
K3 : Applying
K4 : Analysing
K5 : Evaluating
K6 : Creating

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

| Q. N1 | QUESTIONS | Marks | COs | KL |
|-------|--|-------|-----|----|
| i | Mention two objectives of operating system. | 2 | CO1 | K1 |
| ii | What is meant by the term paging * | 2 | CO4 | K2 |
| iii | What is Convoy effect? | 2 | CO4 | K1 |
| iv | What is a kernel? Name any two types of kernel. | 2 | CO1 | K2 |
| v | Differentiate between SJF and RR Scheduling. | 2 | CO2 | K1 |
| vi | Write any two internal DOS commands. | 2 | CO1 | K2 |
| vii | What is Belady's anomaly? | 2 | CO3 | K1 |
| viii | Differentiate between internal and external fragmentation. | 2 | CO4 | K2 |
| ix | Compare program and process. | 2 | CO1 | K1 |
| x | What is the use of need matrix in banker's algorithm? | 2 | CO1 | K1 |



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

| | | | | |
|----|---|----|-----|----|
| 12 | Write short notes on any two: virtual memory, semaphore, Reader-Writer problem, Shared memory model | 10 | CO3 | K1 |
|----|---|----|-----|----|

| Q. No. | QUESTIONS | Marks | COs | KL | | | | | | | | | | | | | | | | | | | | | |
|--------|--|-------|-----|----|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|----|---|---|--|--|--|
| 2 | Explain the concept of Context Switching. | 05 | CO1 | K4 | | | | | | | | | | | | | | | | | | | | | |
| 3 | What is Process Scheduling? Explain the working of a scheduler. | 05 | CO1 | K2 | | | | | | | | | | | | | | | | | | | | | |
| 4 | Compare the working of pre-emptive and non-pre-emptive-scheduling. | 05 | CO2 | K2 | | | | | | | | | | | | | | | | | | | | | |
| 5 | Using pre-emptive version of SJF scheduling, calculate the average waiting time for the given set of processes. | 05 | CO2 | K5 | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>P_id</th> <th>AT</th> <th>BT</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>1</td> <td>4</td> </tr> <tr> <td>P2</td> <td>2</td> <td>5</td> </tr> <tr> <td>P3</td> <td>3</td> <td>2</td> </tr> <tr> <td>P4</td> <td>4</td> <td>1</td> </tr> <tr> <td>P5</td> <td>5</td> <td>6</td> </tr> <tr> <td>P6</td> <td>6</td> <td>3</td> </tr> </tbody> </table> | P_id | AT | BT | P1 | 1 | 4 | P2 | 2 | 5 | P3 | 3 | 2 | P4 | 4 | 1 | P5 | 5 | 6 | P6 | 6 | 3 | | | |
| P_id | AT | BT | | | | | | | | | | | | | | | | | | | | | | | |
| P1 | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | |
| P2 | 2 | 5 | | | | | | | | | | | | | | | | | | | | | | | |
| P3 | 3 | 2 | | | | | | | | | | | | | | | | | | | | | | | |
| P4 | 4 | 1 | | | | | | | | | | | | | | | | | | | | | | | |
| P5 | 5 | 6 | | | | | | | | | | | | | | | | | | | | | | | |
| P6 | 6 | 3 | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Explain in detail the shared memory model of IPC. | 05 | CO3 | K2 | | | | | | | | | | | | | | | | | | | | | |
| 7 | Differentiate between deadlock and starvation. | 05 | CO3 | K2 | | | | | | | | | | | | | | | | | | | | | |

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

| Q. No. | QUESTIONS | Marks | COs | KL | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--|-------|----------|----|----------|----|---|---|---------|----|---|---|--|----|---|---|--|----|---|---|--|----|---|---|--------|--|--|--|
| 8 | Define seek time and latency time. List two ways of allocating storage and give advantages of each. | 10 | CO2 | K3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | What is demand paging? Outline about virtual memory and its advantages. | 10 | CO2 | K3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | What is paging? Using FIFO page replacement scheme, calculate the page fault, miss ratio, and hit ratio for the given reference string: 4,7,6,1,7,6,1,2,7,2. Page frames=3 | 10 | CO5 | K5 | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | For the given set of processes, calculate the average Turn Around Time and Average Waiting Time using priority scheduling. | 10 | CO2 | K5 | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>P_id</th> <th>AT</th> <th>BT</th> <th>Priority</th> </tr> </thead> <tbody> <tr> <td>P1</td> <td>3</td> <td>2</td> <td>Highest</td> </tr> <tr> <td>P2</td> <td>1</td> <td>4</td> <td></td> </tr> <tr> <td>P3</td> <td>4</td> <td>2</td> <td></td> </tr> <tr> <td>P4</td> <td>0</td> <td>6</td> <td></td> </tr> <tr> <td>P5</td> <td>2</td> <td>3</td> <td>Lowest</td> </tr> </tbody> </table> | P_id | AT | BT | Priority | P1 | 3 | 2 | Highest | P2 | 1 | 4 | | P3 | 4 | 2 | | P4 | 0 | 6 | | P5 | 2 | 3 | Lowest | | | |
| P_id | AT | BT | Priority | | | | | | | | | | | | | | | | | | | | | | | | | |
| P1 | 3 | 2 | Highest | | | | | | | | | | | | | | | | | | | | | | | | | |
| P2 | 1 | 4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P3 | 4 | 2 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P4 | 0 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| P5 | 2 | 3 | Lowest | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | |
|---|--|--|--|
|  | ARKA JAIN University Jharkhand |  | END SEM EXAMINATION School of Engineering & IT |
| Branch | Computer Science and Engineering | | Program |
| Subject Name | Software Engineering | | Diploma |
| 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 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 in the Cancellation of the Paper(s)</u>. | | Semester IV |
| Knowledge Level (KL) | K1 : Remembering K2 : Understanding | K3 : Applying K4 : Analysing | Year June 2024 |
| | | K5 : Evaluating K6 : Creating | |

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

| Q. N1 | QUESTIONS | Marks | COs | KL |
|-------|--|-------|-----|----|
| i | Define Software Engineering. | 2 | CO1 | K1 |
| ii | What is Beta testing? | 2 | CO3 | K2 |
| iii | Define agile process model. | 2 | CO3 | K1 |
| iv | What is unit testing? | 2 | CO3 | K2 |
| v | What are the various phases of software development lifecycle? | 2 | CO2 | K2 |
| vi | Define Stress testing? | 2 | CO3 | K1 |
| vii | Define Software Quality Control? | 2 | CO4 | K1 |
| viii | What is user acceptance testing? | 2 | CO3 | K2 |
| ix | What do you understand by test cases? | 2 | CO3 | K1 |
| x | Differentiate between black box and white box testing. | 2 | CO3 | K2 |

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

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|--|-------|-----|----|
| 2 | Describe integration testing. | 05 | CO3 | K3 |
| 3 | Distinguish between waterfall model and spiral model. | 05 | CO2 | K3 |
| 4 | Explain Basic UI design principles. | 05 | CO1 | K2 |
| 5 | Describe effective coding and debugging techniques. | 05 | CO1 | K3 |
| 6 | Explain version control in software life cycle. | 05 | CO5 | K4 |
| 7 | Sketch use-case diagram for University management system with minimum four use cases and two actors. | 05 | CO4 | K6 |

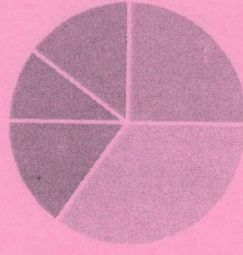
Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

| Q. No. | QUESTIONS | Marks | COs | KL |
|--------|---|-------|-----|----|
| 8 | Explain various phases of software development Lifecycle? | 10 | CO1 | K4 |
| 9 | Explain any five types of software testing techniques. | 10 | CO3 | K4 |
| 10 | Explain line of code metrics for size estimation. | 10 | CO5 | K3 |
| 11 | Draw neat labelled diagram of translation of requirement model into design model and explain it with details. | 10 | CO2 | K6 |
| 12 | Describe Traditional v/s Agile processes in detail. | 10 | CO1 | K4 |

| CO- Course Outcomes, | KL- Knowledge Level, | PO – Program Outcome |
|----------------------|---|----------------------|
| CO1 | Inculcate essential technology and software engineering knowledge and skills. | |
| CO2 | Describe the Requirements Gathering and Analysis, Design Concepts for software development. | |
| CO3 | Describe various aspects and types of testing a software and its phases. | |
| CO4 | For a given model, executing a test cases for quality assurance. | |
| CO5 | To understand various techniques of project management. | |

GRAFICAL REPRESENTATION

Bloom's level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

Course Outcome wise Marks Distribution

