

Department : **Department of Computer Science and Engineering (Data sciences)**

Year & Semester : **IV & I**

Sub Code & Sub Name : **Process mining**

Unit-I

S.No	Part-A Questions
1.	What is Process Mining?
2.	Define Robotic Process Automation (RPA) and its connection to Process Mining.
3.	What are the major challenges in Process Mining?
4.	How does Process Mining differ from Business Process Management (BPM)?
5.	List the primary purposes of identifying the right use cases in Process Mining.
6.	What is the Digital Twin of an Organization (DTO)?
7.	Define the concept of “pitfalls” in the context of Process Mining.
8.	What are the typical failures encountered in Process Mining projects?
9.	How does Process Mining contribute to process improvement?
10.	What is the role of data in Process Mining?
11.	What is a business process, and how does it relate to Process Mining?
12.	Explain the term "Process Model" in Process Mining.
13.	How does Process Mining integrate with BPM systems?
14.	Mention the various fields where Process Mining can be applied.
15.	What are the key differences between RPA and Process Mining?

S.No	Part-B Questions
1.	1. Explain the significance of identifying the right use cases for Process Mining. Discuss the steps to identify them.
2.	2. Analyze the relationship between Process Mining, RPA, and BPM. How do these concepts complement each other?
3.	3. Discuss the challenges and potential pitfalls in implementing Process Mining solutions in an organization.
4.	4. Describe the Digital Twin of an Organization (DTO) and explain how it can be used in process optimization.
5.	5. Explain how Process Mining can be used to improve business processes with examples.
6.	6. Compare and contrast Process Mining and traditional BPM. How does Process

	Mining enhance BPM initiatives?
7.	7. Discuss how the failure of Process Mining projects can be attributed to misalignment with business goals.
8.	8. Evaluate the impact of Process Mining on organizational decision-making processes.
9.	9. Explain how Process Mining can assist in the continuous improvement of business processes.
10.	10. Define RPA and provide an in-depth explanation of how Process Mining and RPA can work together in automating processes.
11.	11. Discuss the various applications of Process Mining in different industries with relevant examples.
12.	12. How can an organization prepare for a successful Process Mining implementation? Discuss the necessary steps.
13.	13. Explain the importance of aligning Process Mining efforts with overall business strategies.
14.	14. Discuss the differences and synergies between traditional BPM systems and Process Mining techniques.
15.	15. Provide a detailed explanation of the role of Process Mining in achieving a digital transformation.

Unit-II

S.No	Part-A Questions
1.	What is the “missing link” in traditional process modeling?
2.	Explain the concept of “Play-In” and “Play-Out” in Process Mining.
3.	What are the key limitations of modeling in Process Mining?
4.	What is the significance of analyzing an example log in Process Mining?
5.	How does the Play-Out technique differ from Play-In in process analysis?
6.	What is the purpose of Replay in Process Mining?
7.	Define process modeling in the context of Process Mining.
8.	What is the role of model-based process analysis in Process Mining?
9.	What is the purpose of a process model?
10.	Define "process discovery" in Process Mining.
11.	How does Process Mining help in creating accurate process models?
12.	What are the key benefits of model-based process analysis?
13.	How is data structured for analysis in Process Mining?
14.	Mention the different types of process models used in Process Mining.
15.	What is the importance of identifying deviations between process models and actual execution?

S.No	Part-B Questions
1.	Discuss the concept of “the missing link” in Process Mining and how it impacts process modeling.
2.	Explain the significance of Play-In, Play-Out, and Replay techniques in Process Mining with examples.
3.	How does the Play-In technique help in understanding process flows? Provide a use case.
4.	Discuss the limitations of traditional modeling methods in the context of Process Mining.
5.	Evaluate the role of process models in Process Mining. How can they be used for process improvement?
6.	Explain how Process Mining can be used to analyze and validate actual process logs.
7.	Compare model-based process analysis with other traditional process analysis techniques.
8.	Discuss how Process Mining provides insights into the gap between theoretical

	models and actual process executions.
9.	How can Process Mining support decision-making by providing visibility into process inefficiencies?
10.	What are the challenges in analyzing logs and identifying patterns in real-world process mining scenarios?
11.	How does Process Mining help in process optimization by identifying deviations between actual and model processes?
12.	Analyze the role of Process Mining in the development of process models in complex organizations.
13.	Discuss the challenges faced during the modeling phase of Process Mining and possible solutions.
14.	Explain the importance of Replay in Process Mining. How does it help in process validation?
15.	Discuss how Process Mining can enhance traditional business process analysis by incorporating data-driven insights.

Unit-III

S.No	Part-A Questions
1.	What is Process Discovery in Process Mining?
2.	Explain a simple algorithm for Process Discovery.
3.	How can Process Discovery be used to rediscover process models?
4.	What are the challenges in Process Discovery?
5.	Define Heuristic Mining in the context of Process Discovery.
6.	What is Genetic Process Mining?
7.	Explain Region-Based Mining.
8.	Define Inductive Mining.
9.	How does Process Discovery improve the understanding of existing processes?
10.	What role does Process Discovery play in detecting process bottlenecks?
11.	Mention the key challenges faced during Process Discovery in large organizations.
12.	What is the significance of process model rediscovery in Process Mining?
13.	How does Process Discovery help in the creation of accurate process models from event logs?
14.	What is the role of logs in Process Discovery?
15.	How can Process Discovery be used for continuous process improvement?

S.No	Part-B Questions
1.	Explain the steps involved in a simple algorithm for Process Discovery. Provide examples.
2.	Discuss the concept of rediscovering process models in the context of Process Mining and its benefits.
3.	Explain the different advanced Process Discovery techniques: Heuristic Mining, Genetic Mining, and Inductive Mining.
4.	How does Heuristic Mining contribute to Process Discovery? Explain with a practical example.
5.	Compare Genetic Process Mining with traditional Process Discovery techniques.
6.	Discuss Region-Based Mining and its application in complex process environments.
7.	Explain the role of Inductive Mining in process model discovery. How does it differ from other methods?
8.	Discuss the challenges faced by organizations in performing Process Discovery and propose possible solutions.

9.	How can Process Discovery techniques help in identifying process inefficiencies and optimization opportunities?
10.	Evaluate the role of logs in Process Discovery. How can accurate event logs contribute to better process models?
11.	Discuss how Process Discovery can aid in automating the process of model creation.
12.	How does Process Discovery help in identifying deviations from standard operating procedures?
13.	Explain the importance of Process Discovery in large-scale process analysis.
14.	Discuss the differences between basic and advanced Process Discovery techniques.
15.	How can the results of Process Discovery be used to streamline business operations?

Unit-IV

S.No	Part-A Questions
1.	What are the types of Process Mining software available?
2.	Define ProM and its role in Process Mining.
3.	What are the key features of commercial Process Mining software?
4.	What is the significance of “Big Event Data” in Process Mining?
5.	What is activity-based decomposition in Process Mining?
6.	Define case-based decomposition in the context of Process Mining.
7.	What are process cubes and how do they relate to Process Mining?
8.	How does streaming Process Mining work?
9.	Explain the role of Process Mining software in large organizations.
10.	What is the difference between open-source and commercial Process Mining tools?
11.	How does ProM facilitate Process Mining research and education?
12.	What are the advantages of using commercial Process Mining tools over open-source ones?
13.	How can Process Mining help in handling large-scale data sets?
14.	What is meant by “process mining in the large”?
15.	Explain the role of decomposition in managing large-scale event data.

S.No	Part-B Questions
1.	Discuss the different types of Process Mining tools available today, both open-source and commercial.
2.	Explain the role of ProM in Process Mining and its importance as an open-source platform.
3.	Discuss the significance of “Big Event Data” in Process Mining. How do organizations manage this data?
4.	Evaluate the role of case-based and activity-based decomposition in the analysis of large-scale process data.
5.	How can Process Mining software assist in analyzing complex and large-scale processes?
6.	Compare the benefits and limitations of open-source Process Mining software like ProM with commercial tools.
7.	Discuss how streaming Process Mining can be used for real-time process monitoring and optimization.
8.	Explain the concept of process cubes and how they are used in Process Mining for

	multidimensional analysis.
9.	What are the challenges faced when applying Process Mining on large data sets, and how can they be overcome?
10.	Explain how Process Mining software can handle event data decomposition in large systems.
11.	How does Process Mining in large organizations differ from smaller-scale implementations?
12.	What are the key benefits of using Process Mining in large-scale data environments?
13.	Discuss the challenges of analyzing real-time process data with Process Mining.
14.	How does Process Mining software help in the visualization of complex process data?
15.	Explain the role of data-driven decision-making in large organizations using Process Mining tools.

Unit-V

S.No	Part-A Questions
1.	What are “Lasagna Processes” in Process Mining?
2.	Define “Spaghetti Processes”.
3.	What is the key difference between Lasagna and Spaghetti processes?
4.	Give one use case of analyzing Lasagna processes.
5.	Mention a challenge involved in analyzing Spaghetti processes.
6.	What is the importance of visual complexity in analyzing Spaghetti processes?
7.	What does the term “Digital-Enabled Organization” refer to?
8.	List any two characteristics of Lasagna processes.
9.	How can Process Mining be used to simplify Spaghetti processes?
10.	What does the academic view focus on in the future of Process Mining?
11.	What is the business view of the future of Process Mining?
12.	Name one application area of Lasagna process analysis.
13.	Why is the characterization of processes important in analysis?
14.	What is the role of automation in the future of Process Mining?
15.	How does Process Mining support a data-driven organization?

S.No	Part-B Questions
1.	Explain the concept of Lasagna processes. Discuss their characteristics and how they are analyzed.
2.	Describe Spaghetti processes. How are they characterized and managed through Process Mining?
3.	Compare and contrast Lasagna and Spaghetti processes. Discuss the different analysis approaches used.
4.	Discuss the challenges of analyzing Spaghetti processes and propose strategies to overcome them.
5.	How can Process Mining help in transforming Spaghetti processes into structured workflows?
6.	Explain the use cases and applications of Lasagna processes in a business environment.
7.	Discuss the academic outlook on the future development of Process Mining as a discipline.
8.	Explain how Process Mining contributes to the development of a digital-enabled organization from a business perspective.

9.	Evaluate the current trends and future directions in Process Mining research and applications.
10.	How can the analysis of complex process structures (like Spaghetti processes) lead to operational improvements?
11.	Discuss the potential impact of AI and machine learning in the future of Process Mining.
12.	How does Process Mining facilitate continuous improvement in a digital transformation journey?
13.	Analyze how businesses can leverage Process Mining to build more adaptive and intelligent workflows.
14.	Discuss the role of process standardization in analyzing and improving Lasagna and Spaghetti processes.
15.	Predict the future advancements in Process Mining tools and methodologies and their impact on business efficiency.