



CT3 Set B Answer key

Database Security And Privacy (SRM Institute of Science and Technology)

DEPARTMENT OF COMPUTING TECHNOLOGIES

SRM Nagar, Kattankulathur – 603203, Chengalpattu District, Tamilnadu

Academic Year: 2022 -2023

(ODD)

Test : CLAT-3 Date : 07/11/2022

Course Code & Title : 18CSE455T & DATABASE SECURITY AND PRIVACY

Duration : 2 periods

Year & Sem : IV Year & VII Semester Max. Marks : 50 Marks

Answer Key

Course Articulation Matrix:

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	H														
CO2	H	H													
CO3	H														
CO4	H	H													
CO5	H			H											
CO6	H														

Part - A

(10*1 = 10 Marks)Answer all Questions.

Q. No	Question	Marks	BL	CO	PO	PI Code
1	----- tool is used for purpose of data auditing for SQL Server only? a) Apex SQL b) SQL Ninja c) SQL Audit d) Idera	1	2	5	1	2.1.2
2	----- command used to turn off the audit? a) REVOKE AUDIT b) NO AUDIT c) COMMIT Audit d) DBA_AUDIT_STATEMENT	1	2	5	1	2.1.3

3	<p>----- catalog view is used for SQL Server Extended Events?</p> <p>a). sys.server_sessions</p> <p>b) sys.server_event_sess</p> <p>c) sys.server_event_session_actions</p> <p>d) All of the mentioned</p>	1	1	5	1	2.2.2
4	<p>Auditing activities conducted by the staff members of the organization.</p> <p>a) Internal Auditing</p> <p>b) External auditing</p> <p>c) Security audit</p> <p>d) Financial audit</p>	1	1	5	4	2.2.3
5	<p>----- tool provides the user interface for auditing events in SQLServer 2000?</p> <p>a) SQL profiler</p> <p>b) SQL Ninja</p> <p>c) SQL Audit</p> <p>d) SQL Idera</p>	1	2	5	4	2.2.3
6	<p>_____, the attacker has a collection of independent data samples from the same distribution from which the original data was drawn</p> <p>a) Known Sample Attack</p> <p>b) Packet sniffer</p> <p>c) Distributed denial of service</p> <p>d) Man in the middle Attack</p>	1	1	6	4	1.3.1
7	<p>_____ method has been proposed for</p>	1	2	6	4	2.1.3

	<p>computing a k-minimal generalization with the use of bottom-up aggregation along domain generalization hierarchies.</p> <p>a) Incognito</p> <p>b) l-diversity</p> <p>c) l-closeness</p> <p>d) k-anonymity</p>					
8	<p>In this case, the participants Alice and Bob are curious and attempt to learn from the information received by them during the protocol, but do not deviate from the protocol themselves.</p> <p>a) Malicious</p> <p>b) Semi-Honest Adversaries</p> <p>c) Distributed denial of service</p> <p>d) Man in the middle Attack</p>	1	1	6	1	3.4.2
9	<p>In _____ the entry is not modified, but is left incomplete. Thus, unknown entry values are used to prevent discovery of association rules.</p> <p>a) Additive perturbation</p> <p>b) Multiplicative perturbation</p> <p>c) Blocking</p> <p>d) Distortion</p>	1	2	6	1	2.2.2

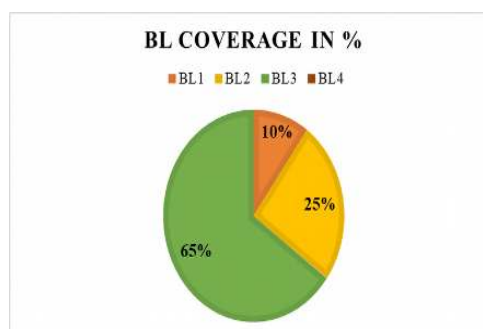
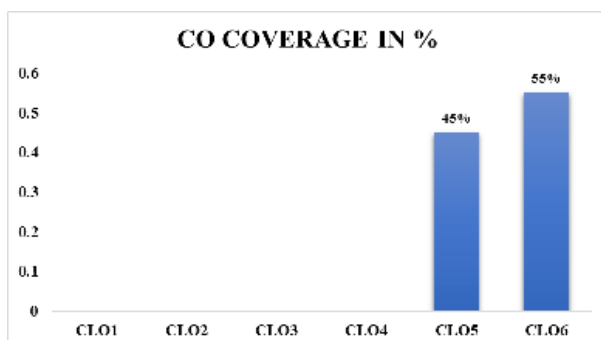
10	<p>The _____ System was one of the earliest practical applications of privacy preserving transformations.</p> <p>a) Datafly</p> <p>a) Homeland Security Applications</p> <p>b) Video Surveillance</p> <p>c) Watch list Problem</p>	1	1	6	4	2.2.3
Part B (4*5=20Marks) Answer all Questions						
11	<p>Describe the purpose of the SQL Profiler Tools</p> <p>SQL Profiler is used to:</p> <ul style="list-style-type: none"> • analyze the application • Determine the optimality of requests sent to the server • Identify Transact-SQL commands that generate an error • Collect information about user activity over a long period of time • Monitor the server operation in real time 	5	2	5	1	1.6.1
12	<p>List the steps for determining the location of the audit trail records.</p> <p>search the audit trail:</p> <ol style="list-style-type: none"> 1.Open the Audit Query widget. 2.To use an existing query, click the query selector and choose one from the drop down list. 3.To create a new query, click Add Query Parameter and select a column name from the drop down list. ... 4.Click Search at the bottom of the widget. ... 5.Click Find to look for specific values or fields within the search results. 	5	2	5	4	2.2.3
13	<p>Differentiate horizontal and vertical partitioning in data privacy mining</p> <p>Horizontal partitioning partitions or segments rows into multiple tables with the same columns. On the other hand, vertical partitioning segments columns into multiple tables containing the same rows.</p>	5	3	6	4	2.2.3

	<p>- E.g. of horizontal partitioning :- customers with pin codes less than 50000 are stored in CustomersEast, while customers with pin codes greater than or equal to 50000 are stored in CustomersWest. Here the two partitioning tables can be East and west.</p> <p>- E.g. of horizontal partitioning: - Splitting of dynamic data and static data.</p>					
14	<p>Outline the idea of privacy quantification</p> <p>Outline the idea of privacy quantification</p> <p>Privacy Quantification</p> <p>🌐 The quantity used to measure privacy should indicate how closely the original value of an attribute can be estimated.</p> <p>🌐 A measure that defines privacy as follows:</p> <p>If the original value can be estimated with $c\%$ confidence to lie in the interval $[\alpha_1, \alpha_2]$, then the interval width $(\alpha_2 - \alpha_1)$ defines the amount of privacy at $c\%$ confidence level.</p> <p>🌐 For example,</p> <p>If the perturbing additive is uniformly distributed in an interval of width 2α, then α is the amount of privacy at confidence level 50% and 2α is the amount of privacy at confidence level 100%.</p> <p>🌐 However, this simple method of determining privacy can be subtly incomplete in some situations.</p>	5	3	6	1	2.2.2
<p>Part C (2*10=20 Marks)</p> <p>(Answer any two)</p>						
15	<p>Explain in detail about the applications of privacy preserving data mining</p> <ul style="list-style-type: none"> ✓ The problem of privacy-preserving data mining has numerous applications in homeland security, medical database mining, and customer transaction analysis. ✓ Some of these applications such as those involving bio-terrorism and medical database mining may intersect in scope. ✓ Number of different applications of privacy-preserving data mining methods. <ul style="list-style-type: none"> ▪ Medical Databases: The Scrub and Data fly Systems 	10	2	6	1	1.6.1

	<ul style="list-style-type: none"> ▪ Bioterrorism Applications ▪ Homeland Security Applications ▪ Genomic Privacy 					
16	<p>Describe the distributed algorithm for k-anonymity.</p> <ul style="list-style-type: none"> ✓ In many applications, the data records are made available by simply removing key identifiers such as the name and social-security numbers from personal records. ✓ other kinds of attributes (known as pseudo-identifiers) can be used in order to accurately identify the records. <ul style="list-style-type: none"> ▪ For example, attributes such as age, zip-code and sex are available in public records such as census rolls. ▪ When these attributes are also available in a given data set, they can be used to infer the identity of the corresponding individual. <p>A combination of these attributes can be very powerful, since they can be used to narrow down the possibilities to a small number of individuals</p> <ul style="list-style-type: none"> ✓ <i>k</i>-anonymity approach can be formalized as follows: <ul style="list-style-type: none"> ▪ <i>Each release of the data must be such that every combination of values of quasi-identifiers (are pieces of information that are not of themselves unique identifiers) can be indistinguishably matched to at least k respondents.</i> ▪ The first algorithm for <i>k</i>-anonymity approach uses <i>domain generalization hierarchies</i> of the quasi-identifiers in order to build <i>k</i>-anonymous tables. ✓ The concept of <i>k</i>-minimal generalization has been proposed in order to limit the level of generalization for maintaining as much data precision as possible for a given level of anonymity. 	10	3	6	1	1.7.1
17	<p>Explain in detail about security auditing with SQL server.</p> <ul style="list-style-type: none"> ✓ Two types of auditing in SQL Server 2000 <ul style="list-style-type: none"> ▪ Auditing ▪ C2Auditing ✓ Auditing can have significant impact on performance ✓ The audit trail analysis can also be costly in terms of system ✓ It is recommended that SQL profiler be run on a server separate from the production 	10	2	5	4	1.7.1

	server ✓ Security audit should be enabled first ✓ This is done by setting the security auditing level under the SQL server properties in Enterprise Manager ✓ Security events can be audited on success, failure or both ✓ Follow these steps ✓ ✓ Open the Enterprise Manager ✓ Expand the appropriate SQL Server group ✓ Right click on the desired server ✓ Click properties On the security tab, select the desired security level					
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Course Outcome (CO) and Bloom's level (BL) Coverage in Questions



Question Paper Setter

Approved by the Audit Professor/Course Coordinator