B.Tech DEGREE EXAMINATION, NOVEMBER 2023

Seventh Semester

18CSE455T - DATABASE SECURITY AND PRIVACY

(For the candidates admitted during the academic year 2020 - 2021 & 2021 - 2022)

Note:

i. **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40ᵗʰ minute.

ii. **Part - B** and **Part - C** should be answered in answer booklet.

Time: 3 Hours   **Max. Marks: 100**

PART - A (20 × 1 = 20 Marks)
Answer all Questions

		Marks	BL	CO

1. _____ is a set of processes and procedure that transform data into information and knowledge.   **1 1 1**
   (A) Knowledge system   (B) Information system
   (C) Database system   (D) Computer system

2. Authentication information is transmitted over the network in an encrypted form using_____.   **1 1 1**
   (A) SRP   (B) RADIUS
   (C) SSL   (D) PKI

3. Which of the following method is efficient for reading but not suited for frequently changing information?   **1 1 1**
   (A) Public Key Infrastructures (PKI)   (B) Secure Remote Password (SRP)
   (C) Lightweight Directory (LDAP) Access Protocol   (D) NT LAN Manager (NTLM)

4. _____ is a collection of security polices and procedures, data constraints, security methods , security tools blended together to implement all necessary measures to secure the integrity, accessibility and confidentiality of every component of the database environment.   **1 1 1**
   (A) Operating System   (B) Firewall
   (C) Gateway   (D) Database security

5. Who are the oracle default users?   **1 1 2**
   (A) SYS and SYSTEM   (B) SYSTEM and SCOTT
   (C) SYS, SYSTEM and SCOTT   (D) SYS and SCOTT

6. _____ is the indication that a password has a limited time left before it expires.   **1 1 2**
   (A) Password complexity   (B) Password storage
   (C) Password usage   (D) Password aging

7. which user interact with the system using database query language is called as   **1 1 2**
   (A) Application Programmer   (B) Sophisticated User
   (C) Specialized User   (D) Naive User

8. _____ clause of CREATE USER statement takes the temporary name of temporary table space.   **1 1 2**
   (A) TEMPORARY TABLESPACE   (B) TEMPORARY NAMESPACE
   (C) TEMPORARY TABLE   (D) TEMPORARY SPACE

9. The function that adds and registers a VPD policy for a table is   **1 1 3**
   (A) PROCEDURE ADD_POLICY   (B) PROCEDURE ADD_POLICY_CONTEXT
   (C) PROCEDURE DROP_POLICY   (D) PROCEDURE ENABLE_POLICY

10. Business layer level_____ contains a program that implements business rules in web application architecture?　　1　1　3
   (A) Application layer　　　　　　　(B) Web application
   (C) Business logic layer　　　　　　(D) Service oriented layer

11. Identify the function, which lists all context for the current session.　　1　1　3
   (A) ALL_CONTEXT　　　　　　　　(B) SESSION_CONTEXT
   (C) VPD_POLICY　　　　　　　　　(D) IN_SESSION_CONTEXT

12. The _____ package is used to apply the security policy.　　1　1　3
   (A) DBMS_RLS　　　　　　　　　　(B) RLS_DBMS
   (C) PL/SQL　　　　　　　　　　　(D) Security_Package

13. GRANT AND REVOKE commands included in　　1　1　4
   (A) DDL statements　　　　　　　　(B) DCL statements
   (C) SQL statements audit trail　　　　(D) Database events

14. The Oracle _____ Log is another method of auditing database activities.　　1　1　4
   (A) CREATE　　　　　　　　　　　(B) TRUNCATE
   (C) DROP　　　　　　　　　　　　(D) ALERT

15. DDL triggers can only fire after the _____ statement has occurred　　1　1　4
   (A) DML　　　　　　　　　　　　(B) CLR
   (C) DDL　　　　　　　　　　　　(D) DML and DDL

16. Trigger is special type of _____ procedure.　　1　1　4
   (A) Stored　　　　　　　　　　　(B) Function
   (C) View　　　　　　　　　　　　(D) Table

17. In which method noise is added to data?　　1　1　5
   (A) The randomization method　　　(B) The k-anonymity model and
   　　　　　　　　　　　　　　　　　l-diversity
   (C) Distributed privacy preservation　(D) Downgrading Application
   　　　　　　　　　　　　　　　　　Effectiveness

18. In which case the attacker knows some linearly independent collection of records, and their corresponding perturbed version?　　1　1　5
   (A) Known Input Attack　　　　　　(B) Known Input-Output Attack
   (C) Known Output Attack　　　　　(D) Known Sample Attack

19. In _____ the entry for a given transaction is modified to a different value. Since, we are typically dealing with binary transactional data sets, the entry value is flipped.　　1　1　5
   (A) Blocking　　　　　　　　　　(B) Aborting
   (C) Distortion　　　　　　　　　　(D) Hiding

20. The individual records are spread out across multiple entities, each of which have the same set of attributes are in _____　　1　1　5
   (A) vertically partitioned　　　　　(B) horizontally partitioned
   (C) diagonally partitioned　　　　　(D) randomly partitioned

PART - B (5 × 4 = 20 Marks)

Marks BL CO

Answer **any 5** Questions

		Marks	BL	CO
21.	Briefly write about Information Security Architecture.	4	2	1
22.	Explain the creation and dropping a role in ORACLE.	4	4	2
23.	Elaborate about the Access Matrix model and Access Modes model.	4	2	3
24.	Why the server activity should be audited?	4	4	4
25.	Write short notes on Horizontal Partitioning in data mining.	4	4	5
26.	How to remove and modify users in sql server?	4	2	4

27. Define Database security and give various database security access points.   4   4   3

PART - C (5 × 12 = 60 Marks)
Answer all Questions

		Marks	BL	CO

28. (a) Explain in detail about information system categories and write the uses of system application at various management levels.   12   4   1

(OR)

(b) Categorize the database security vulnerabilities and threats. Explain them with an example.

29. (a) Determine the steps required for creating users in oracle 10g.   12   4   2

(OR)

(b) Design and implement the various password policies and their limitations.

30. (a) Elaborate about security data model based on application functions with appropriate diagrams.   12   4   3

(OR)

(b) Describe how the oracle helps in implementing a VPD using views.

31. (a) Write in detail about security auditing with SQL server.   12   3   4

(OR)

(b) Discuss, how oracle database auditing activities are performed using DLL triggers.

32. (a) Illustrate the Randomization method.   12   4   5

(OR)

(b) List the applications of privacy-preserving data mining. Explain them in detail.

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