(6 pages)

Reg. No. : ....

Code No. : 30503 E   **Sub. Code : CMCS 51**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Fifth Semester

Computer Science — Core

RELATIONAL DATABASE MANAGEMENT SYSTEM

(For those who joined in July 2021 and 2022 only)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A ————— is a collection of interrelated data and a set of programs to access those data.

   (a) MS ACCESS
   (b) ORACLE
   (c) DBMS
   (d) Database

2. The language that enables users to access data as orgainsed by the data model is —————

   (a) DML
   (b) DDL
   (c) Database
   (d) Normalization

3. Which is used to depict a database schema along with primary key and foreign key dependencies?

   (a) Flow chart
   (b) Decision table
   (c) Data flow diagram
   (d) Schema diagram

4. A ————— is a set of one or more attributes whose values uniquely identify tuples in a relation.

   (a) super key
   (b) foreign key
   (c) candidate key
   (d) reference key

5. Which symbol is used in select clause to denote all attributes?

   (a) =
   (b) %
   (c) *
   (d) $

6. Subset dependencies are also called as —————

   (a) referential integrity
   (b) intersection
   (c) set operations
   (d) union

7. Which normal form eliminates all redundancy based on functional dependencies?

   (a) 1 NF
   (b) 2 NF
   (c) 3 NF
   (d) BCNF

8. Fifth normal form is also called —————

   (a) atomic NF
   (b) Project-join NF
   (c) domain key NF
   (d) BCNF

9. What is Oracle?

   (a) Programming language
   (b) Database
   (c) Scripting language
   (d) OS

10. Which of the following is the subset of SQL commands used to manipulate oracle database structures, including tables?

   (a) Data Manipulation Language (DML)
   (b) Data Definition Language (DDL)
   (c) DDL and DML
   (d) Data Control Language (DCL)

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Give the categories of data models.

   Or

   (b) Give the functions of the database administrator.

12. (a) Give the structure of relational database.

   Or

   (b) Write a note on schema diagrams.

13. (a) Write a note about the set operations in SQL.

   Or

   (b) Write a note on referential integrity.

14. (a) Write a note on mapping cardinalities.

   Or

   (b) Write a note on first normal form.

15. (a) How is a table created and modified?

Or

(b) How is a sequence created?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Briefly explain normalization.

Or

(b) Explain database architecture.

17. (a) Briefly explain the relational operations.

Or

(b) Give the basic structure of SQL query.

18. (a) Briefly explain aggregate functions.

Or

(b) Describe date and time types in SQL.

19. (a) Describe the extended ER features.

Or

(b) Describe Boyce – Codd normal form.

20. (a) How are views created?

Or

(b) Write PL/SQL function to find the factorial of a number.

————

Reg. No. : ....

Code No. : 30504 E   Sub. Code : CMCS 52

B.Sc.(CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Fifth Semester

Computer Science – Core

DATA COMMUNICATION AND COMPUTER
NETWORKS

(For those who joined in July 2021 and 2022 only)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which layer of the OSI model is responsible for error detection and correction?

   (a) Network layer
   (b) Transport layer
   (c) Data link layer
   (d) Physical layer

2. Which protocol suite is widely used for internet communication?

   (a) HTTP/HTTPS
   (b) TCP/IP
   (c) SMTP/POP3
   (d) FTP/SFTP

3. Which type of data transmission uses continuous signals to represent information?

   (a) Analog transmission
   (b) Digital transmission
   (c) Multiplexing
   (d) Guided media

4. Which technique combines multiple signals into a single composite signal for transmission over a shared medium?

   (a) Modulation
   (b) Multiplexing
   (c) Demodulation
   (d) Encryption

5. DSL stands for

   (a) Digital Signal Line
   (b) Dual Subscriber Link
   (c) Digital Subscriber Line
   (d) Data Switching Loop

6. Circuit switching takes place at the ——————

 (a) physical layer   (b) network layer

 (c) presentation layer   (d) application layer

7. Which of the following tasks is not done by data link layer?

 (a) framing   (b) error control

 (c) flow control   (d) channel coding

8. CRC stands for ——————

 (a) Cyclic redundancy check

 (b) Code repeat check

 (c) Code redundancy check

 (d) Cyclic repeat check

9. Which version of IP addressing is commonly used and has a 32-bit address format?

 (a) IPv4 address   (b) Ipv6 Address

 (c) MCA address   (d) DNS address

10. Which transport layer protocol is connectionless and does not guarantee reliable data deliver?

 (a) UDP   (b) TCP

 (c) IP   (d) DNS

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Categorize the different types of networks.

 Or

 (b) Differentiate between network and internet.

12. (a) How would you define and calculate bandwidth?

 Or

 (b) How do guided media differ from unguided media? Explain.

13. (a) Differentiate between virtual circuit and datagram.

 Or

 (b) How DSL is differing from Dial-up modem? Discuss.

14. (a) Explain the significance of flow control.

 Or

 (b) How fast Ethernet is differing from gigabit Ethernet? Discuss.

15. (a) Compare the functionalities of UDP and TCP.

Or

(b) What is cellular telephony, and how does it work? Discuss.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Explain the four levels of address used in TCP/IP.

Or

(b) Summarize the concept of TCP/IP protocol suite.

17. (a) Analyze the advantages of optical fiber over twisted pair and coaxial cable.

Or

(b) Illustrate the components of analog communication system.

18. (a) Explain the data transfer process in a dial-up modem.

Or

(b) Describe the technology is associated with telephone networks.

19. (a) Examine the concept of Go-Back-N automatic repeat request in noisy channel.

Or

(b) How does the check sum method helps in identifying error? Discuss.

20. (a) Explain the concept of satellite network and their role in communication.

Or

(b) How does the transport layer ensure process to process delivery of data? Discuss.

——————

(6 pages)   Reg. No. : ....

Code No. : 30505 E   **Sub. Code : CMCS 53**

B.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2024.

Fifth Semester

Computer Science — Core

PHP AND MySQL

(For those who joined in July 2021-2022 only)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Who is known as the father of PHP?

    (a) Drek Kolkevi   (b) List Barley

    (c) Rasmus Lendrof   (d) Ellen Musk

2. To add comment in PHP we use —————

    (a) & ... &   (b) / ... /

    (c) / * ... * /   (d) ! ... !

3. How many main parameters are used in for loop?

    (a) 2   (b) 3

    (c) 4   (d) 1

4. What will be the output of the following code?

    ```
    <?PhP
        $fruits  =  array ("apple", "orange", array
                    ("plum", "mango", "banana"));
        echo (count ($fruits, 1));
    ?>
    ```

    (a) 4   (b) 5

    (c) 3   (d) 6

5. If an altempt to open a file fails, then fopen( ) returns —————

    (a) TRUE   (b) FALSE

    (c) 1   (d) Cannot say

6. The purpose of r+ mode is —————

    (a) opens file for reading and writing

    (b) opens file for reading only

    (c) opens file for writing only

    (d) places file pointer at end of file

7. The —————— attribute in MySQL assigns unique integer identifiers to the newly inserted rows.

   (a) INCREMENT
   (b) AUTO-INCREMENT
   (c) UNIQUE
   (d) UNIQUE-INTEGER

8. What is the range of SMALLINT in MySQL?

   (a) 0 to 255
   (b) -32768 to 32767
   (c) 0 and 1
   (d) −256 to 255

9. Which among the following is the correct syntax for creating table?

   (a) CREATE TABLE tablename;
   (b) CREATE tablename
   (c) CREATE TBL tablename
   (d) CREATE TBL table;

10. What default value gets stored in columns of the table?

    (a) Null
    (b) 0
    (c) 1
    (d) −1

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the checking of the type of variables using a built-in-function.

    Or

    (b) Write about of statement in PHP.

12. (a) Describe vector arrays in PHP.

    Or

    (b) What is a session? How is it used in PHP?

13. (a) Discuss file open operation with Illustrations.

    Or

    (b) How will you get file information using a PHP built – in function?

14. (a) What are the data types supported by MySQL?

    Or

    (b) Write a note on sorting and filtering of data in MySQL.

15. (a) Write a PHP program showing connection establishment with MySQL and explain.

Or

(b) How is output formatted in MySQL?

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Illustrate merging forms with conditional statements.

Or

(b) Design resume using form and display details in another page.

17. (a) Write a detailed note on associative arrays.

Or

(b) Describe user-defined functions with two examples.

18. (a) Create and manipulate an inventory file through PHP program.

Or

(b) How will you create a table containing house details of a street in MySQL and access it using PHP?

19. (a) Illustrate DML commands in MySQL.

Or

(b) Describe subqueries in MySQL.

20. (a) How are errors handled in MySQL?

Or

(b) How are user inputs validated through database layer and application layer? Illustrate.

———————

Code No. : 30522 E   **Sub. Code : CECS 53**

B.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2024.

Fifth Semester

Computer Science

Major Elective — CLOUD COMPUTING

(For those who joined in July 2021 and 2022 onwards)

Time : Three hours   Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Which is the most important computing technology from user's perception?

   (a) Distributed

   (b) Grid

   (c) Client-server

   (d) Cloud

2. Which of the following provides a runtime environment?

   (a) IaaS

   (b) SaaS

   (c) PaaS

   (d) XaaS

3. ———————— is a virtualization entity that comes under Linux.
   (a) XEN
   (b) KVM
   (c) VMware
   (d) VAAS

4. Load balancing is handled by OpenStack's ————
   (a) IaaS
   (b) PaaS
   (c) SaaS
   (d) LBaaS

5. Choose the most important use of cloud computing?
   (a) Data privacy
   (b) Data storage
   (c) Cost effective
   (d) Security

6. Which of the following is the most important area of concern in cloud computing?
   (a) Scalability
   (b) Storage
   (c) Security
   (d) Service

7. Which is the most essential concept related to cloud computing?
   (a) Abstraction
   (b) Reliability
   (c) Productivity
   (d) Efficiency

8. Which is time-management and scheduling service developed by Google?
   (a) Nebula
   (b) Swift
   (c) Horizon
   (d) Nova

9. Which is not a component of OpenStack?
   (a) Nebula
   (b) Swift
   (c) Horizon
   (d) Nova

10. In Amazon web services, images are handled by ————
    (a) Amazon machine Iteration
    (b) Amazon Mapping Images
    (c) Amazon Machine Images
    (d) Amazon Mapping Iteration

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Write a note on fundamentals of the cloud computing ecosystem.

    Or

    (b) Explain cloud service management.

12. (a) Give the features of mobile cloud computing.

    Or

    (b) Give the types of virtualization.

13. (a) Write a note on SOA components.

    Or

    (b) Write a note on CIA security model.

14. (a) Explain disaster recovery as a service.

    Or

    (b) Give the types of migration for cloud enabled applications.

Scanned with OKEN Scanner

15. (a) Give the benefits of open stack.

Or

(b) Write a note on cloud computing adoption in India.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Explain basic characteristics of cloud computing.

Or

(b) Explain cloud deployment model.

17. (a) Explain the cloud computing life cycle.

Or

(b) How does virtualization work?

18. (a) Explain SOA infrastructure.

Or

(b) Explain cloud risk management framework.

19. (a) Give the cloud disaster recovery architecture.

Or

(b) Explain AWS.

20. (a) Explain map reduce programming model.

Or

(b) Explain the factors affecting cloud computing adoption.

———

Page 4   **Code No. : 30522 E**