



RAN-2011000105050001

T.Y.B.CA (Sem. - V) Examination October - 2025
ASP-NET (Paper - 505-Old)

सूचना : / Instructions

- (1) उपरोक्त दशविव विगतो उत्तरवली पर अवश्य लखवी.
Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Figures to the right indicate full marks.

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Student's Signature

Q.1. Select appropriate option

10

1. The code model that separate the presentation code from the code application logic is:
 - a. CLR
 - b. Framework Class Library
 - c. Code-behind
 - d. All of the above
2. The first event triggered in ASP.Net page is:
 - a. Page_Init ()
 - b. Page_Load ()
 - c. Page_PreInit ()
 - d. Load ()
3. Which method do you use to check whether the Page is post back or not?
 - a. AutoPostBack
 - b. IsPostBack
 - c. PostBack
 - d. SendBack
4. The method of command object which doesn't fetch any value of database or row of database is
 - a. Execute Non Query
 - b. Execute Scalar
 - c. Execute Reader
 - d. None
5. Which of the following control/s supports select, edit and delete operation in an ASP.Net Application?
 - a. DataList
 - b. GridView
 - c. Both (a) and (b)
 - d. None of the Above
6. Validator control can be used for performing which task?
 - a. To check validation at client side
 - b. To check validation at server side
 - c. Both (a) and (b)
 - d. None of the Above
7. Which ADO.Net class provides disconnected environment?
 - a. DataReader
 - b. DataSet
 - c. Command
 - d. Connection
8. Which data controls are read only control/s?
 - a. GridView
 - b. ListBox
 - c. Repeater
 - d. b & c Both

9. Web.config file is used for:
- a. To configure the server
 - b. To configure the browser
 - c. To configure the webpage
 - d. To store the global information and variable definitions for the application.
10. Which control is used to create clickable regions on an image?
- a. ImageButton
 - b. Image
 - c. ImageMap
 - d. ImageList

Q.2. Answer the following

15

- a. Explain inline code and code behind models in details.
- b. Write a note on Login control.
- c. What is Event Driven Programming?

OR

- a. Write a note on CLR.
- b. What is data binding events? Explain with example.
- c. Write a note on GridView control.

Q.3. Answer the following

15

- a. What is DataSet? Write a detailed note on it.
- b. Write a short note on QueryString.
- c. Explain Cookies with example.

OR

- a. Explain RangeValidator with its important properties.
- b. What are sessions? Explain in detail.
- c. Explain data provider in detail.

Q.4. Answer the following

15

- a. Write a note on Web.config file.
- b. Write a note on Error handling.
- c. Explain View state with its advantage and disadvantage.

OR

- a. Write a note on Query String.
- b. Explain SiteMapPath control.
- c. Explain Response Object in detail.

Q.5. Answer the following (Any Three)

15

- a. What is User control? How will you create it and use it?
- b. Explain Cookies.
- c. Write a note on SkinFile.
- d. What is User profile? Explain in detail.
- e. Explain how to achieve master-detail relationship using data binding controls in ASP.NET?



RAN-2211000105010003

B.C.A. (Sem. - V) Examination October - 2025

Advanced Mobile Computing (Old) : (Paper - 501- 02)

Time: 3 Hours]

[Total Marks: 70

सूचना : / Instructions

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Fill up strictly the above details on your answer book
- (2) All questions are compulsory.
- (3) Figure to the right indicate full marks
- (4) Mention your options clearly.

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Student's Signature

Q. 1 Multiple-Choice Questions

(10)

1. What keyword in Kotlin is used to declare an immutable (read-only) variable?
 - A) var
 - B) val
 - C) const
 - D) final
2. Which control flow construct in Kotlin replaces a switch statement?
 - A) if- else
 - B) when
 - C) match
 - D) select
3. Which of these is not a Kotlin collection?
 - A) List
 - B) Set
 - C) Map
 - D) Tuple
4. To start development in Kotlin using Android Studio or IntelliJ, what must you configure?
 - A) SDK path only
 - B) Gradle path only
 - C) Both SDK and Gradle settings
 - D) None
5. In JSON, which symbol denotes the start of an array?
 - A) {
 - B) (
 - C) [
 - D) ;
6. Which Android component is invoked to send data between n activities?
 - A) Service
 - B) Listener
 - C) Callback
 - D) Intent
7. An implicit Intent can be used to:
 - A) Start a specific class only
 - B) Request any component that can handle the action
 - C) Only receive data
 - D) Only save files
8. Which operation does NOT belong to CRUD?
 - A) Create
 - B) Read
 - C) Undo
 - D) Delete
9. To capture an image using device camera, which Android Intent action is used?
 - A) ACTION_CAMERA_CAPTURE
 - B) ACTION_IMAGE_CAPTURE
 - C) CAMERA_OPEN
 - D) CAPTURE_IMAGE_ACTION

10. Which open-source database is commonly used in Android apps for local storage?
A) Oracle
B) SQL Server
C) SQLite
D) MongoDB

Q. 2 Do as directed

- A. Define Kotlin, and explain its key features that make it suitable for modern mobile development. (14)

OR

- A. Discuss advantages of Kotlin over Java with examples. (5)
B. Discuss Kotlin's null-safety features with examples using !! and ?. (5)

OR

- B. Explain the working of loops in Kotlin (for, while, do-while) with examples. (5)
C. What are the main data types in Kotlin, and also explain conditional constructs (if, when) with sample code. (4)

Q. 3 Do as directed

- A. Explain the concept of primary and secondary constructors in Kotlin with examples (14)

OR

- A. Discuss inheritance in Kotlin. (5)
B. Explain polymorphism in Kotlin with examples. (5)

OR

- B. Explain the use of interfaces in Kotlin. Show how multiple interfaces can be implemented in one class. (5)
C. What are abstract classes in Kotlin? Explain with suitable example. (4)

Q. 4 Do as directed

- A. Explain event handling in Android using Kotlin with an example (set On Click Listener). (14)

OR

- A. Explain the difference between explicit and implicit Intents with examples. (6)

- B. Write a JSON object representing a "Student" with id, name, subjects (array) and marks. (6)

OR

- B. Explain the features of JSON and its advantages over XML. How are JSON Objects and Arrays represented? Provide a JSON example containing nested arrays or objects. (5)

- C. Explain Constructor overloading with example. (3)

Q. 5 Do as directed (Any Three)

- A. Explain the process of accessing user's current GPS location. (18)

- B. Explain CRUD operations with SQLite in Android. Provide code snippets for insert and read. (6)

- C. Explain how an app can capture an image using the device camera with ACTION_IMAGE_CAPTURE. (6)

- D. Describe the difference between Constraint Layout and Linear Layout with suitable examples. Why is Constraint Layout preferred for complex UIs? (6)



RAN-2511000905011003

B.C.A. (NCF -NEP) (Sem.- V) Examination October - 2025

Major - 1 Advance Mobile Technology -1 (TH) (Paper - 503-02) (New)

Time: 1 Hour]

[Total Marks: 25

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविल विगतो उत्तरवली पर अवश्य लખवी. Fill up strictly the above details on your answer book</p> <p>(2) All questions are compulsory</p> <p>(3) Figure to the right indicate full marks.</p> <p>(4) Mention your options clearly.</p>	<p>Seat No.:</p> <table border="1" style="width: 100%; height: 20px;"> <tr> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> <td style="width: 15%;"></td> </tr> </table> <div style="border: 1px solid black; height: 80px; margin-top: 10px;"></div> <p style="text-align: center;">Student's Signature</p>						

Q. 1 A. Answer the following in short (any 4)

[04]

1. Kotlin is a:
 - a) Dynamically typed language
 - b) Statically typed language
 - c) Both static and dynamic
 - d) None
2. In Kotlin, the primary constructor is declared:
 - a) Inside curly braces {}
 - b) Inside parentheses () after class name
 - c) Using def keyword
 - d) With new keyword
3. To share media from our app to another, we use:
 - a) ACTION_SEND
 - b) ACTION_SHARE
 - c) ACTION_MEDIA
 - d) ACTION_BROADCAST
4. Algebra in Lilavati was referred to using the term:
 - a) Rekha-ganita
 - b) Kuttaka
 - c) Beej-ganit
 - d) Chakravala
5. What type of triangle is used in the Lilavati theorem (Verse 23)?
 - a) Scalene
 - b) Isosceles
 - c) Right-angled
 - d) Equilateral

Q. 1 B. Answer the following in short (any 4)

[04]

1. What is range in Kotlin
2. How to inherit one class into another? Give example
3. Which class is used to capture image using device camera?
4. How does Lilavati explain geometric measurement without diagrams?
5. What is Bhaskaracharya's teaching philosophy in Lilavati?

Q. 2 A. Write a short note on the following (any one)

[04]

1. Compare and contrast the if and when statements in Kotlin. Provide examples of how both are used in decision-making.
2. Explain the concept of properties and methods in Kotlin Classes. Give example.

B. Explain the concept and features of JSON. How does JSON differ from XML, and in what ways are they similar?

[05]

Q. 3

Write a short note on the following (any Two)

[08]

1. How to Create, Modify and Access Array in Kotlin? Explain with example.
 2. Discuss the concept of named parameters in Kotlin and explain how constructors are used.
 3. Differentiate between explicit and implicit intents, and give examples of their applications.
-



RAN-2511000905011001

T.Y.B.C.A. (Sem. - V) Examination October - 2025

503-01-MJ1: Advance Web Designing (Th) (New)

Time: 1 Hour]

[Total Marks: 25

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविव विगतो उत्तरवही पर अवश्य लખवी. Fill up strictly the above details on your answer book</p>	<p>Seat No.:</p> <table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table> <p>Student's Signature</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Q.1 Choose the correct option (Any 4)

- NoSQL databases are primarily designed to handle :
 - Relational data with fixed schema
 - Large Volume of unstructured and semi-structured data
 - Only transactional data
 - Only numerical data
- JSX in React stands for:
 - Java Syntax Extension
 - Java Standard Expression
 - JavaScript XML
 - JSON XML
- In Angular, a component consists of :
 - Model, View, Controller
 - Service, Controller, Directive
 - Only HTML and CSS
 - Template, Logic and Styles
- Lilavati is named after:
 - A mathematical concept
 - A village
 - Bhaskaracharya's daughter
 - A goddess of learning
- Which language was Lilavati originally written in?
 - Pali
 - Sanskrit
 - Hindi
 - Prakrit

[04]

Q.2 Answer the following in short (Any 4)

- What shapes are commonly discussed in Lilavati's geometry?
- What is Beej-Ganita in Indian mathematics?
- Explain ngOnnit and ngOnChanges.
- Write MongoDB query to:
 - remove all the documents from a collection
 - delete a collection
- What are props in React?

[04]

Q.3 Answer in detail

- (A) Explain Angular built-in pipes in detail

[09]

OR

- (A) What are hooks in React? Write rules to be followed while using hooks. Also explain useState () and useEffect () hooks with example.

[05]

- (B) Explain Projection operators in MongoDB.

[05]

[04]

Q. 4 Write a detailed note on following (any 2)

[08]

1. Data Types of MongoDB.
 2. Data Binding in Angular
 3. Form handling in React.
-



RAN-2211000105040002

T.Y.B.C.A. (Sem. - V) Examination October - 2025

Web framework and services (Old)

Time: 3 Hours]

[Total Marks: 70

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दृशविव विगतो उत्तरवही पर अवश्य लभवी. Fill up strictly the above details on your answer book</p>	<p>Seat No.:</p> <table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Student's Signature</p> </div>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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- Q. 1 Explain in short. (Any 7) 14**
1. Explain difference between == and ===.
 2. Explain isset () function.
 3. List super global arrays in PHP.
 4. How to get current date in format 1 November 2025?
 5. Write about feof () and unlink () functions.
 6. List Jinja2 delimiters.
 7. Give use of abort () in flask.
 8. How do you connect with MySQL/MongoDB? Give example.
 9. How can you insert a new user record from PHP into a MySQL/MongoDB?
- Q. 2 Write short notes. (Any 2) 14**
1. Explain about PHP variables and constants.
 2. Explain operators in PHP.
 3. Explain exception handling in PHP.
- Q. 3 Explain following functions. (Any 2) 14**
1. Write steps for interaction of PHP with database.
 2. What is client side and server side state management? Explain any 1 technique.
 3. Explain sorting functions in arrays.
- Q. 4 1. Explain methods for calling Python script from PHP. 7**
- OR**
1. Explain different techniques of calling PHP code from Python. 7
 2. Explain OS module functions in Python. 7
- OR**
2. Explain FILE parsing functions in PHP. 7
- Q. 5 Write short notes. (Any 2) 14**
1. Explain about creating and hosting a Flask App.
 2. Explain file upload in Flask.
 3. Explain URL building with example.



RAN-2511000905022001

T.Y.B.C.A. (NEP) (Sem. - V) Examination October - 2025

504-Major-2-Web Framework and Services (TH)

Time: 1 Hour]

[Total Marks: 25

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविल विगतो उत्तरवही पर अवश्य लખवी. Fill up strictly the above details on your answer book</p>	<p>Seat No.:</p> <table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table> <div style="border: 1px solid black; height: 80px; width: 100%; margin-top: 10px;"></div> <p style="text-align: center;">Student's Signature</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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Q-1. Answer the following: (Any Five)

[05]

1. Which symbol is used to declare a variable in PHP?
(A) # (B) \$
(C) % (D) @
2. Which keyword is used in PHP for exception handling?
(A) throw (B) catch only
(C) exception (D) error
3. In CodeIgniter, Controllers are responsible for:
(A) Storing data (B) Managing business logic
(C) Designing UI (D) Database creation
4. In AJAX, the data exchange format mostly used is:
(A) HTML (B) XML
(C) JSON (D) CSV
5. Aryabhata compared the motion of stars which of the following analogies?
(A) Birds flying in the sky (B) Clouds floating across
(C) Boat moving in a river (D) Trees appearing to move when in a boat
6. According to Varahamihira, the phases of the Moon occur due to:
(A) The Moon's own light
(B) The shadow of other planets
(C) The reflection of sunlight on the Moon
(D) The alignment of zodiac signs
7. A sidereal year is the time taken for the Earth to:
(A) Return to same zodiac sign
(B) Orbit once around the Sun relative to fixed stars
(C) Complete a lunar cycle
(D) Align with Mars

Q-2. [A] What is type juggling in PHP? Give an example.

[04]

OR

Q-2. [A] Explain variable scope in PHP with an example.

Q-2. [B] Differentiate between include and require statements in PHP.

[04]

OR

Q-2. [B] Differentiate between cookies and sessions in PHP

Q-3. [A] Explain the steps to connect PHP with database. **[04]**

OR

Q-3. [A] Write a short note on AJAX request to PHP.

Q-3. [B] Explain the MVC architecture in CodeIgniter with diagram. **[04]**

OR

Q-3. [B] What is the purpose of URL routing in CI? Explain with example.

Q-4. [A] What is exception handling in PHP? Write an example using try-catch-throw. **[04]**

OR

Q-4. [A] Explain how JSON is generated and parsed in PHP with `json_encode()` and `json_decode()`.



RAN-2511000905033001

T.Y.B.C.A. (NCF-NEP) (Sem. - V) Examination October - 2025

NET Technology (505-MJ3-New)

Time: 1 Hour]

[Total Marks: 25

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Q. 1. (A) Answer the following (Any 4)

4

- What is inline code style in Asp.net?
 - Design and programming language codes separated in html file
 - Design and programming language codes are in same file
 - Design and programming language codes are in different files
 - Design and programming language codes are in sql file
- _____ provides a bridge between the front end controls and the back end database
 - VAL.NET
 - ACTTVEX.NET
 - ADO.NET
 - ACTIVE.NET
- Which of the following method is used to redirect user from one web page to another?
 - Response.Direction()
 - Response.Redirect()
 - Response.Direct()
 - Response.Move()
- The Sanskrit term used by Aryabhata for cosine function is:
 - Kotijya
 - Jya
 - Mandala
 - Trikonamiti
- Aryabhata's Verse 3.11 deals with:
 - Geometry of circles
 - Construction of squares
 - Trigonometric functions
 - Quadrilaterals

(B) Answer the following in short(Any 4)

4

- List out any four common properties of web server controls.
- What is use of FormView control?
- What is session?
- Explain Pythagorean Theorem of Sulabh Sutra.
- How did Indian mathematicians contribute to trigonometry?

Q. 2. (A) Explain Theme.

5

OR

Q. 2. (A) What is Master-Detail relationship in terms of Data Binding Control. Demonstrate with an example.

5

(B) Explain CSS

4

Q. 3. (A) Answer the following (any 2)

1. Explain Cookies.
 2. Explain SiteMapPath
 3. Explain Data Adapter and Command object.
-



RAN-2511000905044001

T. Y. B. C. A. (Sem. - V) Examination October - 2025
Linux Operating System (TH) New (Paper - 501-MN-1)

[Total Marks: 25

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविव विगतो उत्तरवही पर अवश्य लખवी. Fill up strictly the above details on your answer book.</p>	<p>Seat No.:</p> <table border="1"> <tr> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </table> <p>Student's Signature</p>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
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SET - 2

- Q. 1. A. Write answers of following Multiple Choice Questions (Any 4 out of 5) (04)**
- Which directory under the root contains the information on devices?
 - /etc/dev
 - /usr/dev
 - /usr/peripherals/dev
 - /dev
 - Which command is used to remove the write permission of the file 'note' from both the group and others?
 - chmod go+w note
 - chmod go+rw note
 - chmod go-w note
 - None of the above
 - How to create a new file without opening it?
 - create filename
 - write filename
 - cat filename
 - more filename
 - To suppress the behavior of 'p' command of sed, we use _____ option.
 - q
 - n
 - i
 - v
 - To add two spaces before every line in emp.lst which command is used?
 - sed 's///' emp.lst
 - sed 's/^/' emp.lst
 - sed 's/\$/' emp.lst
 - sed 's/ \$/' emp.lst
- Q. 1. B. Write answers for the following (Any 4 out of 5) (04)**
- How do you delete a file using the rm command safely?
 - What is the purpose of the pwd command?
 - How can you remove an empty directory with rmdir?
 - What is a process in Linux Operating System?
 - What is the purpose of the sed command in Linux?
- Q. 2. A. What are the main components of Linux operating system? (05)**
- OR**
- Q. 2. A. What is the Linux directory structure? (05)**
- Q. 2. B. How does the batch command differ from at command? (04)**

Q. 3. Write answers for the following (Any 2 out of 3)

(08)

1. Explain expr command with example.
 2. Explain how to replace a word or pattern using sed.
 3. Define Process. What is the meaning of question mark (?) in TTY column?
-



RAN-2011000105020001

T. Y. BCA (Sem. - V) Examination October - 2025
 Unix and Shell Programming - OLD (Paper - 502)

Time: 3 Hours]

[Total Marks: 70

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Student's Signature

SET - 2

- Q. 1. Answer Following questions (any 7) (14)**
1. What is use of wc command?
 2. Explain kill command.
 3. List out various symbols used with redirection.
 4. How do you display the current working directory?
 5. Explain the purpose of pipes (|) in Unix.
 6. How do you create a new directory?
 7. What is a Unix shell?
 8. How to set line numbers in vi editor?
- Q. 2. Answer following questions (any 2) (14)**
1. Explain i-node structure in detail.
 2. Explain booting sequence of Unix OS.
 3. Explain numeric and string tests with test command with examples.
- Q. 3. Do as directed. (07)**
- A. Write a note on absolute and relative file permission with chmod command. (07)
- OR**
- Write an awk program to print file in reverse. Last line should be displayed first and so on.
- B. Write a note on grep command with its options. Give examples. (07)
- Q. 4. Answer Following Questions (any 2) (14)**
1. Explain any 3 functions of awk with help of examples.
 2. Write a note on ls command with its options. Give examples.
 3. Explain features of Unix.
- Q. 5. Do as directed (07)**
- A. Write a note on find command. Explain in detail. (07)
- OR**
- Explain the Unix file system hierarchy and describe the purpose of at least five key directories.

B. Attempt following queries.

(07)

1. Count number of characters in last 3 lines of file x1.
 2. Delete all : from file x2.
 3. Display all lines having exact 70 characters in file x2.
 4. Replace unix with unix-architecture using remembered pattern.
 5. Locate all lines that end with 'Mumbai' from file x1.
 6. Go to home directory from your current directory.
 7. Locate all filenames in current directory having exactly 4 digits in filename.
-



RAN-2211000105010002

T.Y. BC.A (Sem. - 5) Examination October - 2025
(Paper - 501-01) Advanced Web Designing (Old)

सूचना : / Instructions

- (1) उपरोक्त दशविले विगतो उत्तरवली पर अवश्य लभवी.
 Fill up strictly the above details on your answer book

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Student's Signature

- Q.1. Answer the following questions in short. (Any 7) 14**
1. What is MongoDB? List out any 4 features of MongoDB.
 2. What is the full form of JSX? Why JSX is used with React?
 3. Explain ng-hide and ng-show directives of Angular JS.
 4. What is the purpose of the DB command in MongoDB? If we don't select any database then what will be the default database in MongoDB?
 5. What are props in React? Differentiate between state and props.
 6. How can you integrate Angular JS with HTML?
 7. Explain with example Angular JS expression.
 8. List out MongoDB data types.
 9. How do we conditionally render statements in the JSX part of React component?
- Q.2. Answer the following questions. (Any 2) 14**
1. Explain MongoDB operators with example.
 2. What is React JS? Explain various features of it.
 3. Explain useState and useMemo hooks with example.
- Q.3. Attempt the following questions. (Any 2) 14**
1. What are expressions in Angular JS? Provide some examples.
 2. Explain ng-model, ng-init and ng-repeat directives of Angular JS with example.
 3. Explain form validations using Angular JS.
- Q.4. (A) Write MongoDB commands to solve following queries. (Any 5) 10**
1. Create a database named eCommerce and also create 'products' collection in it. Consider fields like (id, name, category, brand, price, stock)
 2. Insert 5 documents in the products collection.
 3. Display all 'Electronics' products having stock 20.
 4. List all 'Apple' products with price less than 80,000.
 5. Update price of the product with id '101' to 9,999.
 6. Increase stock of the 'Laptop' product by '10'.
 7. Remove all 'sports' products of the 'Puma' brand.
- Q.4. (B) Create a student registration form that accepts Name, Email, Semester and Address of the student. Provide validations on these form fields using Angular JS. 4**

OR

Q.4. (B) Create a student registration form that accepts Name, Email, Semester and Address of the student. Handle this form data using React JS and on submit display registration information to the user in the alert box. **4**

Q.5. Write a short note on following (Any 2) **14**

1. React Event Handling
2. Angular JS Filters
3. MongoDB Operators

UNIVERSITY EXAMINATION: 2025-26
BACHELOR OF COMPUTER APPLICATION (SEM.-5)
SUBJECT: CERTIFICATE COURSE IN DATA SCIENCE

Question Set 2

TIME: 1 HOUR

TOTAL MARKS: 25

- (1) Which of the following is NOT a model evaluation metric?
Options (1) Accuracy (2) Precision (3) Data Cleaning (4) Recall
- (2) For processing large-scale data in a distributed environment, which tool is best suited?
Options (1) Apache Spark (2) SAS (3) Seaborn (4) MATLAB
- (3) What type of Big Data is an email?
Options (1) Structured (2) Unstructured (3) Semi-structured (4) Machine-generated
- (4) What is the primary function of Spark in the Hadoop ecosystem?
Options (1) Data storage (2) Batch processing (3) Real-time log collection (4) In-memory data processing
- (5) Which of the following is a type of supervised learning?
Options (1) Clustering (2) Classification (3) Association (4) Dimensionality Reduction
- (6) _____ is used to process and store large datasets in a distributed manner.
Options (1) Power BI (2) Excel (3) Hadoop (4) None of the Mentioned
- (7) What role does data science play in innovation?
Options (1) It enables exploration of new business models based on data insights (2) It restricts creativity by focusing on data (3) It only supports existing business models (4) It eliminates the need for new products
- (8) MongoDB is an example of which type of database?
Options (1) Relational Database (2) Hierarchical Database (3) NoSQL Database (4) Network Database
- (9) In which stage of the Data Analytics Life Cycle, the data are cleaned and transformed for analysis?
Options (1) Data Cleaning and Preprocessing (2) Exploratory Data Analysis (3) Data Collection (4) Model Evaluation
- (10) Which of the following is/are data storage tool(s)?
Options (1) Oracle Database (2) MS-Access Database (3) Hadoop (4) All of the Mentioned
- (11) What is a container in YARN?
Options (1) A unit of resource allocation for tasks (2) A storage unit for data blocks (3) A metadata storage component (4) A backup for the ResourceManager
- (12) After deploying a model, what is the next step?
Options (1) Model Building (2) Data Wrangling (3) EDA (4) Monitoring and Maintenance
- (13) Docker is used for: _____
Options (1) Data Cleaning (2) Data Visualization (3) Statistical Analysis (4) Model Deployment

UNIVERSITY EXAMINATION: 2025-26
BACHELOR OF COMPUTER APPLICATION (SEM-5)
SUBJECT: CERTIFICATE COURSE IN DATA SCIENCE

Question Set 2

TOTAL MARKS: 25

- (14) Which type of analytics involves using AI to simulate human thought processes?**
Options (1) Predictive Analytics (2) Descriptive Analytics (3) Cognitive Analytics (4) Diagnostic Analytics
- (15) What is the role of the Reducer in MapReduce?**
Options (1) To split input data (2) To aggregate and summarize key-value pairs (3) To store intermediate data (4) To manage resources
- (16) Which language is widely used for data manipulation and analysis?**
Options (1) C (2) PHP (3) C++ (4) Python
- (17) How does data science help in understanding customer behaviour?**
Options (1) By ignoring data (2) By analysing customer data for insights (3) By increasing product prices (4) By limiting customer interactions
- (18) What is predictive analytics primarily used for?**
Options (1) To analyse past data only (2) To gather data from social media (3) To forecast future trends and outcomes (4) To clean data sets
- (19) What is the key difference between BI and Data Science?**
Options (1) BI is for the future, and Data Science focuses on the past (2) BI uses AI, while Data Science uses SQL (3) BI provides descriptive analytics, while Data Science offers predictive insights (4) None of the Mentioned
- (20) Which layer in Big Data architecture is responsible for analyzing and visualizing the data?**
Options (1) Data Analysis and Query Layer (2) Data Processing Layer (3) Data Ingestion Layer (4) Data Storage Layer
- (21) What is full form of HDFS?**
Options (1) Hadoop Distributed File System (2) Hadoop Default File System (3) Hadoop Data File System (4) Hadoop Dual File System
- (22) Which of these tools is widely used for Data Modelling in Data Science?**
Options (1) Power BI (2) SQL (3) Tableau (4) Scikit-learn
- (23) SQL databases are typically scaled by _____**
Options (1) Adding more servers (horizontal scaling) (2) Adding more resources to the same server (vertical scaling) (3) Both horizontal and vertical scaling equally (4) Neither horizontal nor vertical scaling
- (24) Which of the following tools is used for importing and exporting data in Hadoop?**
Options (1) Hive (2) Pig (3) Sqoop (4) Flume
- (25) Which is the first step in the Data Science Life Cycle?**
Options (1) Data Interpretation (2) Problem Definition (3) Model Building (4) Data Visualization

UNIVERSITY EXAMINATION: 2025-26
BACHELOR OF COMPUTER APPLICATION (SEM.-5)
SUBJECT: CERTIFICATE COURSE IN BASICS OF CRYPTOGRAPHY & BLOCK CHAIN

Question Set I

TIME: 1 HOUR

TOTAL MARKS: 25

(1) The Vigenère cipher combats letter frequency attacks by:

Options (1) Using mathematical operations (2) Shifting letters randomly (3) Applying multiple Caesar shifts based on a keyword (4) Scrambling bits

(2) Which cryptographic method uses two keys mathematically linked together?

Options (1) Caesar Cipher (2) Stream Cipher (3) Public Key Cryptography (4) Hashing

(3) In blockchain, immutability means:

Options (1) The chain is centralized (2) Only administrators can modify data (3) Once written, data cannot be changed (4) Data is encrypted with private keys

(4) What is blockchain mining?

Options (1) Encrypting wallets (2) Verifying transactions and adding them to the chain (3) Buying cryptocurrency (4) Hacking into blockchain networks

(5) Non-repudiation ensures:

Options (1) The message cannot be intercepted (2) The sender cannot deny sending the message (3) The message cannot be altered (4) The recipient cannot view the message

(6) What is key management in cryptography concerned with?

Options (1) Designing cipher algorithms (2) Creating long passwords (3) Generating, distributing, and storing cryptographic keys (4) Encrypting images

(7) Which cipher type is most affected by letter frequency analysis?

Options (1) Caesar Cipher (2) Vigenère Cipher (3) Transposition Cipher (4) One-Time Pad

(8) Which of the following is not a goal of cryptography?

Options (1) Confidentiality (2) Data redundancy (3) Integrity (4) Non-repudiation

(9) What ensures transparency in blockchain systems?

Options (1) Hidden records (2) Public access to the ledger (3) Password encryption (4) Restricted consensus

(10) The effectiveness of brute-force attacks can be reduced by:

Options (1) Shorter keys (2) Hashing the ciphertext (3) Using strong, longer keys (4) Sending plaintext instead

(11) One limitation of public key encryption is:

Options (1) It is not secure (2) It cannot be used over the internet (3) It is slower than symmetric encryption (4) It uses the same key for both parties

(12) In a digital signature, the verification is done using:

Options (1) Sender's public key (2) Receiver's private key (3) Receiver's public key (4) Sender's private key

(13) Which of the following makes blockchain resistant to tampering?

Options (1) Centralized servers (2) Frequent updates (3) Cryptographic hash linking of blocks (4) Open-source licensing

(14) The process of verifying and adding transactions to the blockchain is known as:

Options (1) Mining (2) Forking (3) Hashing (4) Signing

(15) Which of the following consensus mechanisms is used in Bitcoin?

Options (1) Proof of Stake (PoS) (2) Delegated Proof of Stake (DPoS) (3) Proof of Work (PoW) (4) Practical Byzantine Fault Tolerance (PBFT)

(16) A transposition cipher maintains:

Options (1) The order of letters (2) The letter frequency (3) The position of the key (4) None of the above

(17) Which algorithm is commonly used for digital certificates?

Options (1) AES (2) DES (3) RSA (4) Blowfish

UNIVERSITY EXAMINATION: 2025-26
BACHELOR OF COMPUTER APPLICATION (SEM.-5)
SUBJECT: CERTIFICATE COURSE IN BASICS OF CRYPTOGRAPHY & BLOCK CHAIN

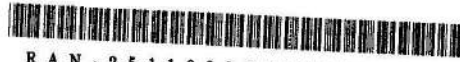
Question Set I

TIME: 1 HOUR

TOTAL MARKS: 25

- (18) Which cipher is considered unbreakable if used properly with a random key as long as the message?**
Options (1) Caesar Cipher (2) Vigenère Cipher (3) One-Time Pad (4) Transposition Cipher
- (19) Cryptography helps prevent:**
Options (1) Email spam (2) Data loss (3) Unauthorized access and tampering (4) Operating system failure
- (20) A digital signature is typically created using:**
Options (1) Hashing only (2) Symmetric encryption (3) A sender's private key (4) A recipient's public key
- (21) Which property ensures that only the intended recipient can read a message?**
Options (1) Integrity (2) Confidentiality (3) Availability (4) Authentication
- (22) What does the blockchain term "genesis block" refer to?**
Options (1) The latest block in the chain (2) A hash function (3) The first block in the blockchain (4) A mining algorithm
- (23) Which term describes the ability to detect unauthorized changes to data?**
Options (1) Confidentiality (2) Authenticity (3) Integrity (4) Obfuscation
- (24) A digital certificate binds:**
Options (1) A user to an IP address (2) A private key to a hash function (3) A public key to an identity (4) A message to a time stamp
- (25) The output of a hash function is called:**
Options (1) Key (2) Message digest (3) Signature (4) Ciphertext

P2528



RAN-2511000905033002-D

RAN-2511000905033002-D

Bachelor of Computer Application (Sem. - V)

Examination November - 2025

Major-3 : Net Technology (PR) : Paper - 505

Time: 2 Hours]

[Total Marks: 25

सूचना : / Instructions

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- Q. 1** Create a website for Readymade Garments and give login facility for admin to login into the website. Also give facility for Insert, Update, Delete and display of items. Maintain Session for login users. Create appropriate table and provide validation.

[20]

- Q. 2** Viva

[05]



RAN-2511000905044002-E

B.C.A. (Sem. - V) Examination November - 2025

Linux Operating System (PR) (New) : Paper - 501 - MN

[Total Marks: 25

सूचना : / Instructions

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Student's Signature

SET - 5

- Q. 1 Write a shell script that will pass file name and two numbers a1 and a2.
Display line a1 to a2 from that file. [Proper validation required] [20]
- Q. 2 Journal + Viva [5]