



RAN-2611000906044001

T.Y.B.C.A. (NCF-NEP) (Sem. VI) Examination February - 2026
E- Commerce and Cyber Security (New) - Minor (Paper - 601-01)

Time: 2 Hours

[Total Marks: 50

सूचना : / Instructions

- (1) उपरोक्त दशविव विगतो उत्तरवही पर अवश्य लખवी.
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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Q.1. [A] Choose the correct Answer: (Any Five)

[05]

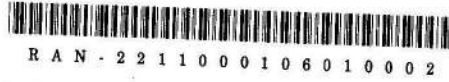
1. Which payment method deducts money immediately from the user's bank account?
 - A. Credit card
 - B. Debit card
 - C. Smart card
 - D. E-cheque
2. Which of the following is an example where a computer is the target of cyber crime?
 - A. Cyber defamation
 - B. Salami attack
 - C. Online gambling
 - D. Software piracy
3. A vulnerability is best described as:
 - A. A cyber attack
 - B. A firewall rule
 - C. A weakness or mistake in system security
 - D. A type of virus
4. A device that forwards data packets from one network to another.
 - A. Router
 - B. Firewall
 - C. Hub
 - D. All of above
5. From the following, which is/are aim of e-Commerce:
 - A. Data Networking
 - B. Data Filtering
 - C. Data Utilization
 - D. Both A and B
6. A self-replicating Computer program :
 - A. Worms
 - B. Virus
 - C. Both A and B
 - D. None of above
7. From the following, which is/are financial crime(s):
 - A. Banking
 - B. Password attack
 - C. Internet
 - D. All of above

[B] Give the answer in short. (Any Four)

[08]

1. Define the term : e-Commerce
2. What is Hackers?
3. Define: DHCP.
4. What is I-way?
5. What is software piracy?

- Q.2.**
- A. Write a short note on E-Commerce Organizational Application. [08]
OR
- A. Write a note on S-HTTP. Also compare it with SSL [08]
- B. Write a note on various transaction models. [05]
- Q.3.** **Attempt any Two:** [12]
- a) Write the detail note on Debit card and Credit card related crimes.
b) Discuss about Bots.
c) Explain any two E-mail related crime.
- Q.4.** **Write a short note on : (Any two)** [12]
- a) Injection attacks.
b) Any two types of IPR Violations.
c) DDoS attacks.
-



RAN-2211000106010002

B.C.A. (Sem. VI) Examination February - 2026
Fundamentals of Cloud Computing (Old) (Paper - 601-2)

[Total Marks: 70

सूचना : / Instructions

- (1) उपरोक्त दृशविव विगतो उत्तरवही पर अवश्य लખवी.
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- Q.1. Answer in short (Any 7) [14]**
- 1 Define Cloud computing. Give 2 name of cloud service provider.
 - 2 What is emulation?
 - 3 What do you mean by "pay as you go" model?
 - 4 Define semi-structured data with one example.
 - 5 What is meant by the 5 V's of Big Data?
 - 6 "Google Drive is a cloud service". Justify your answer.
 - 7 What is the difference between virtual machine and physical machine?
 - 8 What is meant by hardware virtualization?
- Q-2 Answer the following question (any 2) [14]**
- A Explain cloud computing with its advantages and disadvantages. [7]
- OR**
- A Discuss SaaS. Give to difference between SaaS and IaaS [7]
- B List deployment model and explain any 2 deployment model. [7]
- Q-3 Answer the following question (any 2) [14]**
- A Explain para virtualization in detail. Give difference between full and para virtualization. [7]
- B Discuss Hypervisor. Compare Type 1 and Type 2 Hypervisor. [7]
- C Explain cloud computing architecture. [7]
- Q-4 Answer the following question (any 2) [14]**
- A Difference between OLTP and OLAP [7]
- OR**
- A Discuss cloud operations and its management [7]
- B Difference between traditional data base and Big data. [7]
- Q-5 Answer the following question (any 2) [14]**
- A Write a note on utility computing.
- B Explain the benefits of cloud computing in education.
- C What is Big Data? Explain characteristics of big data.



RAN-2611000906044002

T.Y.B.C.A. (Sem. VI) Examination February - 2026
Concepts of AI And IoT Devices - Minor (Paper - 601-02)

Time: 2 Hours

[Total Marks: 50

सूचना : / Instructions

- (1) उपरोक्त दशविल विगतो उत्तरवली पर अवश्य लभवी.
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Q.1. [A] Answer the Following (Any Five)

[05]

- Which of the following represents AI that surpasses human intelligence?
 - Narrow AI
 - General AI
 - Super AI
 - Machine AI
- Actuators in an IoT system are mainly used to :
 - Store data in the cloud
 - Analyze data using AI
 - Connect devices to the internet
 - Perform Physical actions based on commands
- Cloud AI is best suited for:
 - Instant decisions
 - Offline systems
 - Complex analysis and large
 - Battery-based devices
- Which connectivity technology is best for long-range and low-power communication?
 - Wi-Fi
 - Bluetooth
 - zigbee
 - LoRaWAN
- Smart farming mainly uses: ;
 - Only AI
 - Only IoT
 - AI and IoT
 - Manual methods
- Which component enables AI algorithms to process data instantly in AIoT systems?
 - Batch processing
 - Real time data processing
 - Manual analysis
 - Offline computation

[B] Answer in Short (Any Four)

[08]

- Is Deep Learning a subset of AI or ML? Justify your answer.
- Where is data stored and processed in IoT systems?
- Give one example of AIoT in a smart home.
- List IoT devices used in smart agriculture.
- What type of AI is Siri or Alexa?

- Q.2. Answer the following:**
- A. What is AI? Explain the history and evolution of Artificial Intelligence. [08]
- OR**
- A. Explain data flow from sensors to AI processing.
- B. What is IoT? Explain the architecture of IoT systems. [05]
- Q.3. Answer the following (Any 2)** [12]
- a) Explain key concepts Deep Learning.
- b) Explain the difference between Edge Computing and Cloud AI in IoT.
- c) What is AIoT? Also explain challenges in AIoT.
- Q.4. Answer the following (Any 2)** [12]
- a) Explain basics of connectivity.
- b) Explain AI-based decision making from IoT inputs with example.
- c) Explain Case Study of Smart Farming using IoT and AI.
-



RAN-2611000906011001

B.C.A. (NCF-NEP) (Sem. VI) Examination February - 2026
Data Analytics using Python (TH)(NEW) (Major - 1 : Paper - 602)

[Total Marks: 25

सूचना : / Instructions

- (1) उपरोक्त दशविल विगतो उत्तरवली पर अवश्य लखवी.
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Q.1. [A] Answer the following (Any 4)

[04]

- The sutra "Udharan" is related to:**
 - Proportionate calculation
 - Extraction method
 - Remainder theorem
 - Addition and subtraction
- The sutra "Yavadunam" means:**
 - By the completion or non-completion
 - The remainder
 - Whatever is the deficiency
 - The parts and the whole
- The sutra "Vyastisamanstih" refers to:**
 - The product of the sum
 - By motion or shift
 - The parts and the whole
 - Proportionate method
- The sutra "Sesanyan" is used for finding:**
 - The sum
 - The difference
 - The product
 - The remainder
- The sutra "Gunitasamuchyah" means:**
 - The parts and the whole
 - The product of the sum
 - By transposition
 - Whatever is the deficiency
- The sutra "Chalana-Kalana" refers to:**
 - Extraction
 - Motion or applying a shift
 - Completion method
 - Cancellation method

[B] Answer following in one /two lines (Short Answers): (Any Four)

[04]

- What is Exploratory Data Analysis (EDA)? Why is it important in data analysis?
- Explain the concept of covariance and correlation in regression analysis.
- What is the machine learning life cycle? Mention its main stages.
- Define Supervised Learning with one real-world application.
- Define Unsupervised Learning with one real-world application.

Q.2. Answer Following:

[A] Define Regression and explain its characteristics. Also describe the concepts of dependent and independent variables with suitable examples.

[05]

[B] Explain Univariate Analysis in detail. Discuss various statistical measures and graphical techniques used for analyzing a single variable with suitable examples.

[04]

OR

[B] Explain the concept of spread of data. Describe Normal Distribution and Skewed Distribution with suitable graphs and real-life examples.

Q.3. Write short-note on any Two :

[08]

- 1) Difference between Classification and Regression in Supervised Learning.
 - 2) Role of Training Data, Test Data, and Validation Data in building a machine learning model.
 - 3) Loss Functions and explain their importance in model evaluation.
-



RAN-2611000906022001

T.Y.B.C.A. (Sem.-VI) Examination February - 2026

MJ-2 Fundamentals of Full Stack Web Development (TH) (Paper - 603-01)

Time: 1 Hours]

[Total Marks: 25

<p>સૂચના : / Instructions</p> <p>(1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી. Fill up strictly the above details on your answer book</p> <p>(2) Answer all the questions.</p> <p>(3) Figures in the right indicates full marks</p> <p>(4) Illustrate your answer with necessary example, if required.</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 style="text-align: center;">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. Answer the following. (Any FIVE) [5]

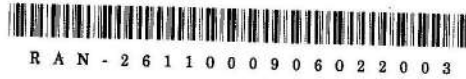
1. Which command initializes a new Angular application?
 - a) ng start
 - b) ng init
 - c) ng new
 - d) ng create
2. How do you handle HTTP requests in Angular.
 - a) Using HttpService
 - b) Using HttpClient
 - c) Using HttpRequest
 - d) Using HttpModule
3. CORS is mainly used to:
 - a) Secure passwords
 - b) Allow cross-origin requests
 - c) Compress responses
 - d) Store cookies
4. Which token format is commonly used for authentication?
 - a) XML
 - b) JWT
 - c) HTML
 - d) CSV
5. Firebase Hosting is mainly used for:
 - a) Database storage
 - b) Authentication
 - c) Deploying frontend applications
 - d) Email services
6. CRUD stands for:
 - a) Create, Read, Update, Delete
 - b) Copy, Remove, Update, Deploy
 - c) Compile, Run, Upload, Debug
 - d) Connect, Render, Update, Design
7. Middleware in Express is used to:
 - a) Design UI
 - b) Handle database queries only
 - c) Process requests before responses
 - d) Compile JavaScript

Q.2. [A] Describe Standalone Components in Angular and explain its features [4]

OR

Q.2. [A] What are Route Guards? Explain canActivate and canDeactivate with suitable example. [4]

- Q.2. [B] What are HTTP methods? Explain GET, POST, PUT, DELETE [4]
OR
- Q.2. [B] What is CORS? Explain CORS and environment variables (.env)? [4]
- Q.3. [A] Explain the structure of a Mongoose model. [4]
OR
- Q.3 [A] Describe basic CRUD operations using Express and MongoDB with suitable examples [4]
- Q.3. [B] Differentiate between Firestore and Realtime Database. [4]
OR
- Q.3. [B] Describe how Firebase integrates with Angular applications. [4]
- Q.4. [A] Differentiate between Smart and Dumb components. [4]
OR
- Q.4. [A] Write a code for Reactive Form with two fields (email, password) using FormBuilder [4]
-



RAN-2611000906022003

T.Y.B.C.A. (Sem.- VI) Examination February - 2026

Major-2: Advance Mobile Application Development (Theory)

सूचना : / Instructions

- (1) उपरोक्त दृशविल विगतो उत्तरवही पर अवश्य लभवी.
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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Q.1. (A) Answer the following MCQ. (Any 4)

- [1] Which platform does Firebase Authentication support? [4]
 - A. Android
 - B. iOS
 - C. Web
 - D. All of the above
- [2] What is Firebase Authentication primarily used for?
 - A. Database management
 - B. User authentication and authorization
 - C. File storage
 - D. Hosting web applications
- [3] Which method is used to sign out a user in Firebase Authentication?
 - A. logout()
 - B. signOut()
 - C. exitUser()
 - D. removeAuth()
- [4] Which option must be enabled in Firebase Console to use email/password authentication?
 - A. Google Sign-In
 - B. Email/Password Provider
 - C. Anonymous Provider
 - D. Phone Provider
- [5] Which HTTP method is used to retrieve data from a web service?
 - A. POST
 - B. PUT
 - C. DELETE
 - D. GET
- [6] JSON is mainly used for:
 - A. UI designing
 - B. Data storage
 - C. Data interchange
 - D. App compilation

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

1. What is Firebase Console?
2. What is FirebaseAuth?
3. What is JSON tree structure?
4. What is Value Event Listener?
5. What is Web Service?

[4]

Q.2. Answer in detail

- [A] What is Firebase? Explain services of Firebase in details.

[9]

[5]

OR

- [A] Explain the complete FirebaseUI Authentication workflow for an Android application.

[5]

[B] Discuss Google Sign-In authentication in Firebase with configuration steps.

[4]

Q.3.

Write a note on following (Any 2)

1. What is NoSQL databases? Explain types of NoSQL databases.
2. Explain any two CRUD operation on firebase dataset
3. What is API? Explain API in details.

[08]

UDHNA CITIZEN COMMERCE COLLEGE &
SPB COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARJIBHAI GONDALIA COLLEGE OF BCA & I.T.
T.Y.B.C.A. University Examination: 2025-26

Subject: CC - AI Tools for Effective Research and Report Writing

Time: 1hr

Total Marks: 25

Question Set 1

- (1) AI-supported hypothesis generation must always be:**
Options (1) Automatically accepted (2) Ignored (3) Verified through literature (4) Kept confidential
- (2) Which is a limitation of AI in research?**
Options (1) Speed (2) Pattern recognition (3) Hallucination of facts (4) Language translation
- (3) Which activity aligns with responsible AI use?**
Options (1) Letting AI write the full thesis (2) Using AI to polish language (3) Submitting AI output unchanged (4) Hiding AI usage
- (4) AI improves accessibility by:**
Options (1) Removing citations (2) Translating technical jargon (3) Eliminating peer review (4) Replacing supervisors
- (5) AI tools can assist in research design by:**
Options (1) Approving methodologies (2) Suggesting appropriate methods (3) Replacing pilot studies (4) Guaranteeing validity
- (6) Sampling bias occurs when:**
Options (1) The sample size is large (2) The sample is not representative (3) Random sampling is used (4) Data is qualitative
- (7) Mixed-methods research combines:**
Options (1) Primary and secondary data (2) Quantitative and qualitative approaches (3) AI and human analysis (4) Theory and practice
- (8) The ultimate responsibility for ethical AI-assisted data analysis lies with:**
Options (1) Software developers (2) AI models (3) Research participants (4) The researcher
- (9) Interpretation of results primarily involves:**
Options (1) Repeating statistical values (2) Explaining meaning in relation to research questions (3) Adding new data (4) Ignoring limitations
- (10) AI-generated text must always be:**
Options (1) Used verbatim (2) Critically reviewed (3) Automatically trusted (4) Attributed as author
- (11) Visualizations (tables/figures) should be used to:**
Options (1) Replace explanations (2) Present data clearly and concisely (3) Increase page length (4) Avoid interpretation
- (12) Editing with AI is acceptable for:**
Options (1) Inventing arguments (2) Refining grammar and style (3) Adding results (4) Changing interpretations
- (13) Final responsibility for reported findings lies with:**
Options (1) AI software (2) Journal editors (3) Peer reviewers (4) The author(s)

- (14) Ethical AI use in research requires:**
Options (1) Speed over accuracy (2) Transparency and accountability (3) Full automation (4) Minimal documentation
- (15) Ethical governance of AI aims to:**
Options (1) Maximize output (2) Replace ethics committees (3) Ensure responsible use (4) Eliminate regulation
- (16) AI governance frameworks emphasize:**
Options (1) Profit maximization (2) Accountability and transparency (3) Full automation (4) Reduced documentation
- (17) Using AI to fabricate survey responses is:**
Options (1) Methodologically innovative (2) Acceptable if disclosed (3) Research misconduct (4) Efficient data collection
- (18) Human oversight in AI-assisted research ensures:**
Options (1) Faster automation (2) Ethical and accurate outcomes (3) Reduced learning (4) Elimination of bias
- (19) If an AI tool makes an analytical error, responsibility lies with:**
Options (1) The AI developer (2) The AI model (3) The researcher (4) The journal
- (20) Transparency requires researchers to:**
Options (1) Avoid AI (2) Disclose AI use (3) List AI as author (4) Hide prompts
- (21) AI-assisted writing should focus on:**
Options (1) Argument creation (2) Clarity and structure (3) Claim invention (4) Result fabrication
- (22) Submitting unedited AI text is considered:**
Options (1) Efficient (2) Acceptable (3) Academic misconduct (4) Encouraged
- (23) Which section of a research report links findings to existing literature?**
Options (1) Methodology (2) Results (3) Discussion (4) Abstract
- (24) AI can suggest research designs but:**
Options (1) Chooses the best one (2) Must be blindly followed (3) Requires human validation (4) Replaces methodology textbooks
- (25) Which of the following threatens internal validity?**
Options (1) Random assignment (2) Confounding variables (3) Control groups (4) Standardized instruments

Question Set 1

TIME: 1 HOUR

TOTAL MARKS: 25

Instructions

➤ Calculator not allowed in exam

(1) If the marked price is ₹1200 and discount is 20%, the selling price is:

Options (1) 900 (2) 960 (3) 1000 (4) 1040

(2) A train of length 100 m crosses a bridge of length 200 m in 15 seconds. Speed is:

Options (1) 60 km/h (2) 72 km/h (3) 80 km/h (4) 90 km/h

(3) Which number is divisible by 3?

Options (1) 1245 (2) 1246 (3) 1247 (4) 1248

(4) A cyclist covers 30 km in 2 hours. Speed is:

Options (1) 12 km/h (2) 15 km/h (3) 18 km/h (4) 20 km/h

(5) An article bought for ₹500 is sold at a profit of 10%. Selling price is:

Options (1) 520 (2) 540 (3) 550 (4) 560

(6) Facing East, a person turns left, then right, then right again. He is now facing:

Options (1) North (2) South (3) East (4) West

(7) Average of 5 consecutive numbers is 20. The smallest number is:

Options (1) 16 (2) 18 (3) 20 (4) 22

(8) $7^2 + 5^2 =$

Options (1) 49 (2) 74 (3) 81 (4) 98

(9) A discount of 10% on ₹600 is:

Options (1) ₹50 (2) ₹60 (3) ₹70 (4) ₹80

(10) The value of $\sqrt{361}$ is:

Options (1) 17 (2) 18 (3) 19 (4) 21

(11) What is 10% of 250?

Options (1) 20 (2) 25 (3) 30 (4) 35

(12) HCF of 24 and 36 is:

Options (1) 6 (2) 12 (3) 18 (4) 24

(13) $\sqrt{0.09}$ is:

Options (1) 0.03 (2) 0.3 (3) 3 (4) 0.9

(14) Introducing a woman, Ram said, "She is the wife of my brother." The woman is Ram's:

Options (1) Sister (2) Sister-in-law (3) Aunt (4) Cousin

UNIVERSITY EXAMINATION: 2025-26
BACHELOR OF COMPUTER APPLICATION (SEM.-6)
SUBJECT: CERTIFICATE COURSE IN FOUNDATION COURSE ON COMPETITIVE EXAM

Question Set 1

TIME: 1 HOUR

TOTAL MARKS: 25

(15) If $A = 1$, $B = 2$, then $D = ?$

Options (1) 3 (2) 4 (3) 5 (4) 6

(16) If $CP = ₹600$ and $SP = ₹540$, loss % is:

Options (1) 0.08 (2) 0.09 (3) 0.1 (4) 0.12

(17) Find the next number: 3, 9, 27, ?

Options (1) 54 (2) 72 (3) 81 (4) 243

(18) The HCF of two consecutive numbers is always:

Options (1) 0 (2) 1 (3) 2 (4) Same number

(19) Marked price is ₹1000. After giving 10% discount, selling price is:

Options (1) 850 (2) 880 (3) 900 (4) 950

(20) If 5 men can do a work in 10 days, how many days will 10 men take?

Options (1) 3 (2) 4 (3) 5 (4) 6

(21) How many meaningful English words can be formed from the letters of "RAT"?

Options (1) 2 (2) 3 (3) 4 (4) 6

(22) LCM of 8 and 12 is:

Options (1) 12 (2) 24 (3) 48 (4) 96

(23) 20% of 500 is:

Options (1) 50 (2) 100 (3) 150 (4) 200

(24) If $CAT = DBU$, then $DOG = ?$

Options (1) EPH (2) EPF (3) FPH (4) FQH

(25) A train 120 m long crosses a platform 180 m long in 15 seconds. Speed is:

Options (1) 60 km/h (2) 72 km/h (3) 80 km/h (4) 90 km/h