



RAN-2411001102010001

B.Sc(IT) (Sem.-II) Examination April - 2026

Fundamentals of Programming Using C-2 (Paper-203)

Time: 2 Hours]

[Total Marks: 50

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दृशविल 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: 10px; text-align: center;"> <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. Answer following questions (Any Ten)

10

- (1) Write syntax to disable packing option in structure in C.
- (2) Which storage class preserves a variable's value between function calls?
- (3) What will be output of the following code?

```
#include<stdio.h>
int x=10;
int main()
{
    int x=20;
    printf("%d", x);
    return 0;
}
```

- (4) Write a syntax to declare a pointer that stores address of another integer pointer?
- (5) Which function changes size of allocated memory?
- (6) What will be output of the following code?

```
#include<stdio.h>
int main()
{
    int a[]={2,4,6};
    printf("%d", *(a+2));
    return 0;
}
```

- (7) _____ function moves file pointer to beginning of the file.
- (8) Which function converts string to integer?
- (9) What is datatype of argv in command line arguments?
- (10) What is the difference between #include <file> and #include "file"?
- (11) What does int const *p mean?

Q.2. A. Answer following questions: (Any Two)

10

- (1) What is structure? Explain nested structure with suitable example.
- (2) Explain all four storage classes in C with appropriate example.
- (3) What is recursion? How recursive functions calls are stored? Explain with example.

- Q.2. B. Answer following questions: (Any One)** **04**
- (1) Write a note on call by value and call by reference in C with example.
 - (2) Write a note on function pointer in C with example.
- Q.3. A. Answer following questions: (Any Two)** **10**
- (1) Explain different types of preprocessor directives with example.
 - (2) Explain pointer to structure in C with suitable example.
 - (3) Explain sequential file processing and random access file processing. Explain working of fseek(), ftell() and rewind() with suitable example.
- Q.3. B. Answer following questions: (Any One)** **04**
- (1) Differentiate between fprintf() and fwrite().
 - (2) Differentiate between Pointer to Constant and Constant Pointer.
- Q.4. Answer following questions: (Any Three)** **12**
- (1) Write a C program to copy content of one file into another file using command line arguments.
 - (2) Write user defined function in C to multiply two numbers using recursion.
 - (3) Write user defined function to concatenate two strings using pointer.
 - (4) Write C program to find the largest and smallest elements in an array using dynamic memory allocation.
-



RAN-2411001102040001

B.Sc. (I. T.) (Sem. -II) Examination April - 2026

B. Sc. (I.T.) (M.Sc.I.T.) 5 Years Integrated Course : Mathematics - II (MDC - 202)

Time: 2 Hours]

[Total Marks: 50

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दृशविव विगतो उत्तरवली पर अवश्य लखवी. Fill up strictly the above details on your answer book</p> <p>(2) All questions are compulsory.</p> <p>(3) Figures to the right indicate marks of the questions.</p> <p>(4) Follow usual notations.</p>	<p>Seat No.:</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> <td style="width: 20px; height: 20px;"> </td> </tr> </table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p style="text-align: center;">Student's Signature</p> </div>						

Q.1. (a) Define self-loop and Pendent vertex with illustration. 04

OR

(a) Discuss the Konigsberg Bridge Problem. 06

(b) **Attempt any two.**

1. Prove that in a simple graph with n vertices the maximum degree of any vertex is $(n-1)$ and the maximum number of edges is $n(n-1)/2$.
2. Define infinite graph, show that an infinite graph with finite no. of vertices will have at least one pair of vertices joined by an infinite no. of parallel edges.
3. Justify the statement using example, "sum of degree of vertices in a graph is twice the no. of edges in it."

Q.2. (a) Define fusion and hamiltonian path with illustration. 04

OR

(a) State the necessary and sufficient conditions for two graphs to be isomorphic with example. 06

(b) **Attempt any two.**

1. Prove that, a simple graph with n vertices and k components can have at most $(n-k)(n-k+1)/2$ edges.
2. Show that, in a complete graph with n vertices there are $(n-1)/2$ edge disjoint Hamiltonian circuits, if n is an odd number ≥ 3 .
3. Prove that, a given connected graph G is an Euler graph if and only if all vertices of G are of even degree.

Q.3. (a) Define eccentricity and rooted tree with illustration. 04

OR

(a) Prove that, any connected graph with n vertices and $n-1$ edges is a tree. 06

(b) **Attempt any two.**

1. What is the minimum possible height of an n - vertex binary tree?
2. Define minimal spanning tree and weighted graph with an illustration.
3. Prove that, every tree has either one or two centers.

Q.4. (a) Define non-planar graph and prove that $K_{3,3}$ is non-planar. 04

OR

(a) State and prove Euler's formula,

(b) **Attempt any two.**

06

1. Prove that Kuratowski's first graph is non-planar.
2. Prove that a graph can be embedded in the surface of a sphere if and only if it can be embedded in a plane.
3. In a simple connected planar graph with f regions, n vertices and e edges ($e > 2$). Show that (1) $e \geq \frac{3f}{2}$ — (2) $e \leq 3n - 6$.

Q.5. (a) Discuss the observation about the adjacency matrix.

04

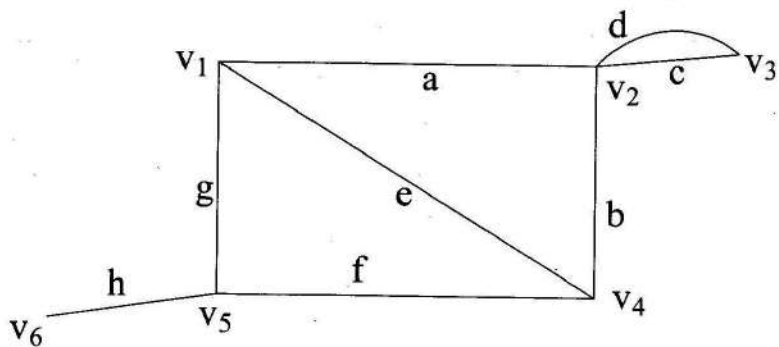
OR

(a) Discuss the observation about the circuit matrix.

(b) **Attempt any two.**

06

1. Make an Incidence matrix of the following graph



2. Discuss the seating arrangement problem.

3. Discuss observations about the path matrix.



RAN-2411001102050001

B.Sc. (I.T.) (Semester-II) Examination March - 2026 Paper 201 - Business Communication Skills in English (NEP)

Time: 1 Hour]

[Total Marks: 25

સૂચના : / Instructions

- (1) ઉપરોક્ત દર્શાવેલ વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fill up strictly the above details on your answer book.

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Student's Signature

- Q-1. Answer the following: (Any 1) 05**
- During a team meeting, your colleague dominates the conversation. How will you communicate your point without sounding aggressive?
 - Imagine your team missed a project deadline. How will you use business communication to take responsibility and rebuild trust with the client?
- Q-2. Answer the following: (Any 1) 05**
- How would you convince a client to adopt a new cybersecurity solution using persuasive strategies. Explain with an example.
 - What strategies would you use to persuade management to upgrade outdated software? Discuss with an example.
- Q-3. Answer the following: (Any 1) 05**
- Write a short homepage introduction for a start-up offering mobile app development.
 - You are a junior developer and need clarification on a task assigned by your project manager. How would you initiate and conduct this conversation professionally?
- Q-4. Do as directed:**
- Give meanings of the following business idioms and frame meaningful sentences. 03
 - in the pipeline
 - cut corners
 - take it off line
 - List 5 expressions used during a meeting. 02
- Q-5. Speaking involves clearly conveying information verbally. Exemplify using different tasks in workplace communication. 05**

UDHNA COLLEGE

CC-ADVANCE DIGITAL SKILLING (UNIVERSITY EXAMINATION:2025-26) Question paper

Question Set 2

Class Group: F.Y.B.SC. IT (SEM-2)

Subject: ADVANCE DIGITAL SKILLING

(1) MIN function gives:

Options (1) Highest value (2) Lowest value (3) Average (4) Count

(2) Function to separate "A,B,C":

Options (1) CONCAT (2) LEFT (3) SPLIT (4) PROPER

(3) How do you add data fields to a pivot table in Google Sheets?

Options (1) Drag and drop them into the appropriate areas of the pivot table (2)

Click on "Insert" > "Data Field" and select the desired data field (3)

Right-click on the pivot table and select "Add Data Field" (4)

Type the data field names directly into the pivot table cells

(4) Highlighting duplicates uses:

Options (1) Conditional formatting (2) Print record (3) Save record (4) None of the Mentioned

(5) What is the syntax for the FILTER function in Google Sheets?

Options (1) =FILTER(range, condition) (2) =FILTER(range; condition) (3)

=FILTER(range; condition; [optional arguments]) (4) =FILTER(range, condition, [optional arguments])

(6) SMTP is a protocol used for:

Options (1) Email communication (2) SMS delivery (3) Image compression (4) Encryption

(7) Autocrat uses _____ to fill certificates or bulk emails.

Options (1) Filters (2) Graphics (3) Formatting tools (4) Merge fields

(8) Nimbus Screen Recorder can record:

Options (1) Only audio (2) Only webcam (3) Full screen, tab or window (4) Only PDF pages

(9) Which Nimbus feature allows capturing long webpages?

Options (1) Visible part only (2) Selected area (3) Scrolling capture (4) Desktop crop

(10) Justification means:

Options (1) Merging cells (2) Cleaning data (3) Sorting data (4) Aligning left/right/center

(11) After creating the documents via Autocrat we can:

Options (1) Save them in Google Drive (2) Opt to send as email (3)

Save them in Google Drive or Opt to send as email (4) None of the Mentioned

(12) Zoom waiting room feature allows:

Options (1) Editing documents (2) Changing themes (3) Installing apps (4)

Approving participants before joining

(13) Freezing row helps to:

Options (1) Delete row (2) Hide header (3) Keep header visible (4) Duplicate row

UDHNA COLLEGE

CC-ADVANCE DIGITAL SKILLING (UNIVERSITY EXAMINATION:2025-26) Question paper

Question Set 2

Class Group: F.Y.B.SC. IT (SEM-2)

(14) Duration between two times:

Options (1) Subtract end-start (2) Add times (3) Multiply times (4) Average times

(15) Nimbus Screenshot tool is mainly used for:

Options (1) File compression (2) Capturing images/screens (3) Writing code (4) Audio editing

(16) Multiply entire range A1:A5:

Options (1) SUM(A1:A5) (2) MULTIPLY(A1:A5) (3) PRODUCT(A1:A5) (4) COUNT(A1:A5)

(17) "Limit to 1 response" requires:

Options (1) Date question (2) Google Sign-in (3) Add-on (4) File permission

(18) In Google Sheets, what does the formula =SPLIT(A1, ",") do?

Options (1) Converts the text in cell A1 to lowercase (2)

Splits the text in cell A1 into multiple cells based on commas (3) Joins text values with a comma separator (4)

Converts the text in cell A1 to uppercase

(19) SUM is used to:

Options (1) Count items (2) Add numeric values (3) Multiply numbers (4) Sort data

(20) Background change feature in Meet allows:

Options (1) Adding games (2) Installing apps (3) Rewriting code (4) Blurring or replacing background

(21) Which type is best for long text responses?

Options (1) Dropdown (2) Date (3) Multiple choice grid (4) Paragraph

(22) SMS stands for

Options (1) Same Message Simple (2) Short Message Service (3) Simple Message Service (4) Service Message Short

(23) Lower function is used to:

Options (1) Convert text to lowercase (2) Divide text using delimiter (3) Count characters (4) Remove spaces

(24) Which menu in Google Sheets allows you to insert a chart or graph?

Options (1) Data (2) Format (3) Insert (4) Tools

(25) To share screen in Google Meet, you use:

Options (1) Present Now (2) Insert Screen (3) Upload Window (4) Share Camera

UDHNA COLLEGE

SEC-206-APPLICATION OF AI FOR STUDENTS (UNIVERSITY EXAMINATION:2025-26) Question paper

Question Set 1

Class Group: F.Y.B.SC. IT (SEM-2)

Subject: Application of AI for Students

(1) A limitation of ChatGPT is:

Options (1) Slow response (2) Incorrect or outdated information (3) Poor language skills (4) No creativity

(2) Deep learning is a subset of what?

Options (1) AI (2) Cloud computing (3) Networking (4) OS

(3) One advantage of AI in assignment writing is:

Options (1) Reduces creativity (2) Saves time (3) Removes thinking (4) Increases errors

(4) Copying AI-generated text directly is considered:

Options (1) Ethical (2) Recommended (3) Improper use (4) Skill ful

(5) AI improves LinkedIn profiles by:

Options (1) Removing keywords (2) Enhancing headlines and summaries (3) Deleting posts (4) Reducing engagement

(6) Presentation creation using AI focuses on:

Options (1) Designing and structuring slides (2) Manual drawing (3) Coding (4) Printing notes

(7) First step in a hands-on AI activity is:

Options (1) Ignore instructions (2) Submit output (3) Copy AI result (4) Select a real-life task

(8) Rezi is best suited for:

Options (1) Bullet point achievements (2) Creative posters (3) Email writing (4) Event planning

(9) Hands-on AI activities help build:

Options (1) Dependence (2) Laziness (3) Confidence (4) Confusion

(10) AI tools are most effective when combined with

Options (1) Human judgment (2) Blind trust (3) No effort (4) Guesswork

(11) A key concern of AI in education is:

Options (1) Speed (2) Ethics and equity (3) Automation (4) Accuracy

(12) AI progress tracking helps by:

Options (1) Hiding delays (2) Removing goals (3) Showing dashboards (4) Ignoring performance

(13) AI-based mock interviews help candidates improve?

Options (1) Confidence (2) Communication (3) Answer structure (4) All of the Mentioned

(14) Hands-On AI helps students gain:

Options (1) Only grades (2) Job-ready skills (3) Hardware skills (4) Sports skills

(15) Which task is supported by Hands-On AI in academics?

Options (1) Cooking (2) Gaming (3) Driving (4) Assignment writing

UDHNA COLLEGE

SEC-206-APPLICATION OF AI FOR STUDENTS (UNIVERSITY EXAMINATION:2025-26) Question paper

Question Set 1

Class Group: F.Y.B.SC. IT (SEM-2)

(16) Gemini helps in topic exploration by:

Options (1) Running simulations (2) Explaining topics simply (3) Writing code (4) Monitoring exams

(17) Which technology enabled the rise of Generative AI?

Options (1) Cloud computing (2) Blockchain (3) Quantum computing (4) IoT

(18) ChatGPT can help in:

Options (1) Essay writing (2) Summarization (3) Idea generation (4) All of the Mentioned

(19) AI helps overcome which problem in writing?

Options (1) Slow typing (2) Writer's block (3) Internet issues (4) Formatting errors

(20) Personalized learning means:

Options (1) Same content for all (2) Teacher-only instruction (3) Tailored learning for individuals (4) Offline learning only

(21) Which of these is an AI video model?

Options (1) Sora (2) Suno (3) Midjourney (4) Copilot

(22) Students should always:

Options (1) Trust AI blindly (2) Verify AI output (3) Avoid AI completely (4) Submit AI text directly

(23) Which AI feature is useful for report structure?

Options (1) Idea generation (2) Outline creation (3) Grammar correction (4) All of the Mentioned

(24) AI literacy is important for careers because?

Options (1) AI replaces humans (2) AI eliminates learning (3) AI stops creativity (4) AI is widely used in workplaces

(25) Google Calendar uses AI mainly for which purpose?

Options (1) Resume writing (2) Scheduling (3) Interview practice (4) Branding



RAN-2411001102030001

B.Sc. (I.T.) (Sem. II) Examination March - 2026
Minor - Introduction to DBMS (Paper - 204)

[Total Marks: 50

सूचना : / Instructions

- (1) उपरोक्त दशविव विगतो उत्तरवही पर अवश्य लખवी.
 Fill up strictly the above details on your answer book.

Seat No.:

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Student's Signature

Q-1. A) Answer the following questions in brief. (Any Five)

- 1) What is the role of Database Administrator?
- 2) What is a multi-valued attribute? Give one example with its respective symbol.
- 3) What is an attribute? Explain attributes of entity "student".
- 4) What do you mean by atomicity?
- 5) What is a primary key? Explain 1 example of primary key.
- 6) What is a relationship set?

05

Q-1. B) Answer the following questions in brief. (Any Five)

- 1) What is an Instance? Explain one example of an Instance.
- 2) Give an example of the Logical structure of entity students.
- 3) Explain super class and sub class.
- 4) Give an example of strong entity and a weak entity.
- 5) Give an example of Ternary relationship between entities.
- 6) Write an ALTER statement to add 1 column into an existing table.

05

Q-2. A) Answer the following questions in detail. (Any Two)

- 1) Compare Hierarchical, Network, and Relational data models. Justify why the relational model became dominant.
- 2) Discuss transaction management and analyze how ACID ensures reliability.
- 3) Describe the concepts of generalization and specialization in the ER model. Highlight one key difference between them with an example.

10

Q-2. B) Answer the following questions in brief. (Any Two)

- 1) Explain XML databases with its types.
- 2) What is MySQL? List three reasons why it is a popular choice for web-based software applications compared to other RDBMS.

06

- 3) What are the rules for defining a Primary Key in a MySQL table? Provide the SQL syntax to add a Primary Key to an existing table using the ALTER command.

- Q-3. A) Answer the following questions in detail. (Any Two) 10**
- 1) Explain the primary limitations of file-based data management systems that led to the development of modern database technology.
 - 2) Explain the different views of a database architecture in detail.
 - 3) Explain the concepts of DDL and DML in DBMS, differentiate between them, Write SQL statements for creating a table.
- Q-3. B) Answer the following questions in brief. (Any Two) 06**
- 1) Explain these string functions: CONCAT(), REVERSE(), SUBSTRING()
 - 2) What are 'Cardinality Ratios' in an E-R Diagram?
 - 3) Explain any 5 numeric function with example.
- Q-4. A) Analyse university information system and draw an ER diagram of the same system with required features. 05**
- Q-4. B) Explain the concept of a multimedia database. Explain three classes of multimedia database and also explain the types of multimedia database briefly. 03**
-



RAN-2611001102077002

F. Y. B. Sc. (IT) (Sem.-II) Examination April - 2026

ZO-VAC-ENV-201-Environment-I

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) પ્ર. 1 ફરજિયાત છે. Question no. 1 is compulsory.</p> <p>(3) જમણી બાજુના અંક પ્રશ્નો ના પૂરા ગુણ દર્શાવે છે. Figures to the right indicate full marks of the question.</p>	<p>Seat No.:</p> <table border="1" style="width: 100%; height: 30px;"> <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>						

- પ્ર. 1. નીચે આપેલા પ્રશ્નોમાંથી ગમે તે પાંચના ટૂંકમાં જવાબ આપો. 05**
1. અજૈવિક ઘટકો શું છે?
 2. CSE નું પૂર્ણ સ્વરૂપ લખો
 3. ભારતમાં પર્યાવરણ સંબંધિત એક સંસ્થાનું નામ આપો.
 4. વ્યાખ્યાયિત કરે છે: વન સંસાધન.
 5. જળ સંરક્ષણની પદ્ધતિનું નામ આપો.
 6. માટી ધોવાણ શું છે?
 7. સંસાધન શોષણનો અર્થ શું છે?
- પ્ર. 2. નીચે આપેલા પ્રશ્નોમાંથી ગમે તે બે ના જવાબ આપો. 10**
1. પર્યાવરણીય અભ્યાસનો અવકાશ સમજાવો.
 2. પર્યાવરણીય સંરક્ષણ વિશે જાહેર જાગૃતિની જરૂરિયાતની ચર્ચા કરો.
 3. પર્યાવરણ સંબંધિત સંગઠન પર નોંધ લખો.
- પ્ર. 3. નીચે આપેલા પ્રશ્નોમાંથી ગમે તે બે ના જવાબ આપો. 10**
1. પર્યાવરણીય સંતુલન જાળવવામાં જંગલોનું મહત્વ સમજાવો.
 2. જમીનની અધોગતિના કારણો સમજાવો.
 3. જળ સંસાધનોના વધુ પડતા ઉપયોગના કારણો અને પરિણામો સમજાવો.

ENGLISH VERSION

- Q. 1. Answer in brief ANY FIVE of the following: 05**
1. What are abiotic components?
 2. Write the full form of CSE
 3. Name one environment related organization in India.
 4. Define: Forest Resource.
 5. Name the method of water conervation.
 6. What is soil erosion?
 7. What is meant by resource exploitation?

- Q. 2. Answer ANY TWO of the following:** **10**
1. Explain the scope of environmental studies.
 2. Discuss the need for public awareness about environmental protection.
 3. Write the note on: Environment related organization.

- Q. 3. Answer ANY TWO of the following:** **10**
1. Explain the importance of forest to maintain environmental balance.
 2. Explain the causes of land degradation.
 3. Explain the causes and consequences of over-utilization of water resources.
-

**UDHNA CITIZEN COMMERCE COLLEGE &
SPB COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARJIBHAI GONDALIA COLLEGE OF BCA & I.T.**

5 Years M.Sc. (I.T.) Integrated Programme

F.Y.B.Sc. (I.T.) (Semester: 2)

Veer Narmad South Gujarat University::Practical Examination-April-26'

Subject: 205-Practical

Time: 4 Hours

Total Marks: 50

Q-1 A. Write C program to create a structure IPL with members plr_id, plr_name, plr_rank. Read at least 5 records and display the records. [15]

----- OR -----

Write down macro definitions for the following:

- a) To obtain the bigger of two numbers
- b) To find arithmetic mean of two numbers.

B. Write user defined function to calculate length of a string using pointer. [15]

----- OR -----

Write C program to copy content of one text file into another text file.

Q-2 Create a database named **healthcare_system** and perform the following: [15]

Create Table: consultant

The table should contain the following fields:

- consultant_id – Primary Key
- consultant_name – VARCHAR
- expertise – VARCHAR
- charges – DECIMAL

Create Table: visitor

The table should contain the following fields:

- visitor_id – Primary Key
- visitor_name – VARCHAR
- age – INT
- city – VARCHAR
- consultant_id – Foreign Key referencing consultant(consultant_id)

[A] Insert at least 5 records into both tables.

[B] Solve the following SQL queries:

1. Display all records from both consultant and visitor tables.
2. Display visitor name, age, and consultant ID.
3. Display visitors whose age is greater than 40.
4. Display consultants in ascending order of charges.

5. Find the total charges of all consultants.
6. Display maximum and minimum charges.
7. Display visitor name, consultant name, and expertise using JOIN.
8. Update the city of a visitor whose visitor_id = 501.
9. Delete consultant records where charges are less than 300.
10. Display visitors whose age is greater than the average age.

Q-3 Viva.

[05]