

Seat No. _____

**UDHNA CITIZEN COMMERCE COLLEGE &
SPB COLLEGE OF BUSINESS ADMINISTRATION &
SMT. DIWALIBEN HARJIBHAI GONDALIA COLLEGE OF BCA & I.T.
F.Y. B.Sc. (IT) (Semester::1)
VNSGU External Examination: December-2025**

Subject: 105 – Practical-1

Time: 4 Hours

Total Marks: 50

Instructions:

1. Figures to the right indicate total marks of a question.

Q-1 Write a menu driven 'C' program to perform the following task on **[20]**

Input array of N elements. (Value of N should be input by user)

1. Display all array elements
2. Display largest value
3. Display smallest value
4. Exit

Q-2 A) Write a 'C' program to count total number of input character in **[10]**
input String.

E.g. if Input String is "World is so nice and beautiful" and

Input Character is: u then

output is : 2

B) Write a 'C' program to generate following series of 10 elements. **[10]**

1 2 5 10 17 26 using proper logic.

Q-3 Journal + Viva **[10]**

RAN-2311001101030001

B.Sc. (IT) (Sem. - I) Examination November - 2025

Fundamental of Computer (Paper - 103)

[Total Marks: 50

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविव 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; width: 100%;"> <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. (A) Define the following terms [Any Five] [5]

1. Motherboard
2. ASCII
3. APFS
4. WC
5. Worksheet
6. CPU.

Q.1. (B) Answer following questions in short [Any Five] [5]

1. List out components of Computer.
2. List out types of OS.
3. List out features of Linux.
4. What is transition?
5. What is the use of computer code?
6. What is ROM?

Q.2. (A) Answer the following questions in detail (Any Two) [10]

1. Explain in detail Block diagram of Computer.
2. Explain in detail time sharing operating system.
3. Explain partition of Disk.

Q.2. (B) Answer the following questions in brief (Any Two) [06]

1. Write a note on mobile computers.
2. Explain BIOS in detail,
3. Explain types of file system in detail.

Q.3. (A) Answer the following questions in detail (Any Two) [10]

1. What is open source? Explain in detail features of Linux.
2. Explain different types of charts in spreadsheet.
3. What is BIOS, Explain in detail.

Q.3 (B) Answer the following questions in brief (Any Two) [6]

- A. $110101_2 = (?)_{10}$
- B. $725_8 = (?)_{10}$
- C. $BB34_{16} = (?)_{10}$

Q.4. (A) Write a note on formatting documents.

[5]

OR

Q.4. (A) Explain in detail Slide transition.

[5]

Q.4. (B) How can we work with multiple sheets.

[3]

OR

Q.4. (B) Explain 4-bit, 8-bit BCD system.

[3]



RAN-2311001101040001

B.Sc. (IT) (M.Sc. IT) (Sem. - I) Examination November - 2025

MDC - Mathematics - I (Paper - 102)

Time: 2 Hours]

[Total Marks: 50

<p>सूचना : / Instructions</p> <p>(1) उपरोक्त दशविल विगतो उत्तरवली पर अवश्य लपवली. 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 style="width: 100%; text-align: center;"> <tr> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> <td style="border: 1px solid black; width: 20px; height: 20px;"></td> </tr> </table> <div style="border: 1px solid black; padding: 10px; margin-top: 10px; text-align: center;"> <p>Student's Signature</p> </div>						

Q. 1 A. Attempt Any Two:

[6]

1. If the function $f : R \rightarrow R$ given by $f(x) = x^2 - 2$ and $g : R \rightarrow R$ given by $g(x) = 3x - 5$ then find $(fog)(x)$, $(gof)(x)$, $(gog)(x)$.
2. Let I be the set of positive integers. Let $\equiv m$ be the congruence modulo m relation on I . Show that it is transitive.
3. Let R be the set of real numbers. Define a binary operation $*$ on R as $a * b = a + b$, $\forall a, b \in R$. Find the inverse of 12.

B. Attempt Any Two:

[6]

1. Define the following terms with illustration
 - i) Transpose of a matrix
 - ii) Symmetric matrix
 - iii) Scalar matrix
2. Find the inverse of the matrix $A = \begin{bmatrix} 3 & -1 & -2 \\ 2 & 0 & -1 \\ 3 & -5 & 0 \end{bmatrix}$ using elementary row operation.
3. Find the value of $7^2 + 8^2 + 9^2 + \dots + 20^2$.

Q. 2 A. Attempt Any Two:

[6]

1. Let R_1 and R_2 be two relations on $A = \{1,2,3,4\}$ given by $R_1 = \{(1,1), (3,4), (4,2)\}$ and $R_2 = \{(1,1), (2,1), (3,1), (4,4), (2,2)\}$. List the elements of $R_1 \cap R_2$, $R_1 \circ R_2$, and $R_2 \circ R_1$.
2. Prove that the function $f : R \rightarrow R$ defined as $f(x) = 2x - 3$ is invertible. Also, find f^{-1} .
3. Find all the possible function from $\{a, b\}$ to $\{9,10\}$ how many of them are one - one?

B. Attempt Any Two:

[6]

1. Show that every square matrix can be written as a sum of a symmetric matrix and a skew - symmetric matrix.

2. If $A = \begin{bmatrix} 1 & 0 \\ -1 & 7 \end{bmatrix}$, then find k so that $A^2 = 8A + kI$.

3. Solve the following system of equations
 $3x + 2y + 5z = 1$, $2y + z = 0$, $3x - 2y + 6z = -5$.

Q. 3 A. Attempt Any Two:

[6]

- Define mean, median, mode. State merits and demerits of mean.
- Find the mean, median and mode for the following data:

Class	10 – 19	20 – 29	30 – 39	40 – 49	50 – 59	60 – 69
Frequency	5	18	12	8	15	17

3. Calculate Quartile Deviation and its coefficient from the following data:

Ages (in year)	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50	50 – 60
No. of persons	13	38	67	76	22	4

B. Attempt Any Two:

[6]

- If A and B are two independent events, then the probability of occurrence of at least one of A and B is given by $1 - P(A')P(B')$.
- Calculate the mean deviation (about median) of the following data:

Marks	0 – 4	4 – 8	8 – 12	12 – 16	16 – 20
No. of students	5	12	8	7	8

3. The mean and variance of a binomial variate are 9 and 7. Find $P(X > 4)$.

Q. 4 A. Attempt Any Two:

[6]

- In a factory producing screws, three machines produces respectively 30%, 40% and 30% of the total production out of which 5%, 4% and 2% are defective respectively. One screw draw from random form the production and found that defective, what is the probability that it is produced by machine II.
- From a collection of 11 bulbs, of which 4 are defective, 3 bulbs are selected at random and fitted into lamps. Find the probability that
 - all three bulbs glow, and
 - the room is lit.
- Define
 - Mutually Exclusive Events
 - Conditional Probability
 - Event

B. Attempt Any Two:

[8]

- State the probability function of a Poisson distribution and obtain its mean, variance.
- Calculate standard deviation and coefficient of variance for the following distribution:

Classes	30 – 40	40 – 50	50 – 60	60 – 70	70 – 80	80 – 90	90 – 100
Frequencies	3	7	12	15	8	3	2

3. For two events A and B $P(A) = 1/2 = P(B)$ and $P(A \cup B) = 2/3$ then find $P(A' \cup B')$, $P(A' \cap B')$, $P(A \cap B)$ and $P(A' \cap B)$.

RAN-2311001101050001

B.Sc. (IT) (NEP) (Sem. - I) Examination November - 2025 Communication Skills in English (Paper - 101)

Time: 1 Hours]

[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> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <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. Draft an email on the following: (Any 1) (05)**
- (A) As a Project manager, draft an email to a client notifying delay in project delivery and explaining reasons.
- (B) As a team lead, draft an email to the staff inviting them to attend a webinar on emerging IT trends.
- Q.2. Do as Directed: (08)**
- (A) **Interpret the given news headlines and comment:**
- (1) Survey Finds Young Adults More Concerned About Mental Health Than Previous Generations.
- (2) Film Industry Adapts to Growing Popularity of OTT Platforms.
- (B) **Identify whether the following workplace messages are formal or informal and justify your choice.**
- (1) Hey John, can you send me the report by EOD? Thanks!
- (2) Dear Mr. Smith, Please find attached the quarterly sales report for your review.
- (3) Should you have any questions, feel free to contact me. Best regards, Emily.
- Q.3. Answer the following questions: (Any 3) (12)**
- (A) **Scenario:** A client sends a harsh email blaming your team for a system crash.
Question: How should you manage your emotions before responding to ensure professional communication?
- (B) **Scenario:** Your colleague gives feedback about improving your code style.
Question: What advantage does good listening provide in this situation?
- (C) **Scenario:** You are asked to give a 5-minute presentation on project progress in front of senior management.
Question: What public speaking skills would you focus on?
- (D) **Scenario:** A posting reads: "The candidate should be skilled in data visualization, stakeholder communication, and translating business needs into technical solutions."
Question: Is this job primarily business-facing or back-end technical? Give reasons for your interpretation.



RAN-2311001101010001

B.S.C. (IT) (NEP) (Sem. - I) Examination November - 2025
Major - 104 : Fundamentals of Programming Using C - I

Time: 2 Hours]

[Total Marks: 50

सूचना : / Instructions

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

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Student's Signature

Q. 1. Do as directed: (Any Ten)

[10]

- List various control characters used in printf function.
- _____ keyword is used to rename datatype in C.
- Which level of language is closest to machine code?
- What's the difference between = and == in C?
- What is the output of printf ("%d", 10 > 5);?
- Can we use char variable to store small numbers?
- What is range for char data type?
- scanf() is a predefined function in _____ header file.
- What will be output of the following line in C?

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int a[2][2] = {{1,2},{3,4}};
```

```
    printf ("%d", a[0][1] + a[1][0]);
```

```
    return 0;
```

```
}
```

10. strcat() is used for _____

11. Find the output:

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int i=0;
```

```
    while(i++ <3)
```

```
        printf("%d ",i);
```

```
    return 0;
```

```
}
```

12. Find the output:

```
#include <stdio.h>
int main()
{
    int a=0;
    if(a=1)
        printf("zero\n");
    else
        printf("non zero\n");
    return 0;
}
```

Q. 2. (A) Answer following questions(Any Two) [10]

- (1) Write note on data types of 'C'. Explain type casting with example.
- (2) Explain go to, break and continue statements with example.
- (3) Define Algorithm, Explain characteristics of good algorithm.

Q. 2. (B) Answer following questions(Any Two) [04]

- (1) Explain bitwise and conditional operator with example.
- (2) Explain any two string functions with appropriate example.

Q. 3. (A) Answer following questions(Any Two) [10]

- (1) Differentiate between Compiler and Interpreter.
- (2) What is loop? Explain different types of loops in C with example.
- (3) What is array? Explain 1D and 2D types array with example.

Q. 3. (B) Answer following questions(Any One) [04]

- (1) Write a note on If Else and switch case control structure.
- (2) Explain Enumeration in C with example.

Q. 4. Answer following question (Any Three) [12]

- (1) Write a C program to multiply two number without using *operator. A city has a fixed bus fare system:
 - ₹20 for the first 5 km
 - ₹3 for every additional km
- (2) Write an algorithm and draw a flowchart to calculate the total fare for a given distance traveled.
- (3) Write C program to count number of digits in integer number N entered by user.
- (4) Write C program to display first N prime numbers where N will be entered by user.



RAN-2311001101070001

F.Y.B.Sc. (BKS) (IT) (Sem. - I) Examination November - 2025
 VAC - I IKS, BKS/BGP : Bharatiya Knowledge System An Introduction
 ભારતીય જ્ઞાન પરંપરા (Paper - 1)

[Total Marks: 25

સૂચના : / Instructions

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

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Student's Signature

પ્ર. 1. વૈકલ્પિક પ્રશ્નોનાં ઉત્તર આપો (કોઈપણ પાંચ) (10)

Answer the optional questions. (Any Five)

1. જીવન મૃત્યુના ચક્રમાંથી મુક્ત થવું એટલે શું?

- | | |
|----------|----------|
| અ. ભક્તિ | બ. મોક્ષ |
| ક. ધ્યાન | ડ. યોગ |

Liberation from the cycle of birth and death is called?

- | | |
|---------------|-----------|
| A. Devotion | B. Moksha |
| C. Meditation | D. Yoga |

2. પુરાણોની સંખ્યા કેટલી છે?

- | | |
|-------|-------|
| અ. 16 | બ. 24 |
| ક. 18 | ડ. 20 |

How many Puranas are there?

- | | |
|-------|-------|
| A. 16 | B. 24 |
| C. 18 | D. 20 |

3. સિદ્ધાંત શિરોમણી ગ્રંથના કર્તા કોણ છે?

- | | |
|---------------|-----------------|
| અ. વરાહ મિહિર | બ. ભાસ્કરાચાર્ય |
| ક. આર્યભટ્ટ | ડ. પાણીની |

Who is the author of Siddhant Shiromani?

- | | |
|-----------------|-------------------|
| A. Varaha Mihir | B. Bhaskaracharya |
| C. Aryabhatta | D. Pani |

4. સાંખ્ય દર્શનના પ્રણેતા કોણ છે?

- | | |
|-------------|---------------|
| અ. કપિલમુનિ | બ. પતંજલી |
| ક. કણાદ | ડ. ઈશ્વરકૃષ્ણ |

Who is the founder of Samkhya philosophy?

- | | |
|---------------|-------------------|
| A. Kapil Muni | B. Patanjali |
| C. Kanad | D. Ishwar Krishna |

5. वसुधैव कुटुंबकनो अर्थं शुं थाय?

अ. संपूर्ण जगत अेक मंदिर

ब. धरती माता छे

क. भारत अेक कुटुंब छे

ड. समग्र सृष्टि अेक परिवार छे

What does Vasudhaiva Kutumbaka mean?

A. The whole world is a temple

B. Mother Earth is a

C. India is a family

D. The entire universe is a family.

6. उत्तर मीमांसानुं प्रख्यात नाम शुं छे?

अ. मीमांसा

ब. वेदांत

क. योग

ड. न्याय

What is the famous name of Uttara Mimamsa?

A. Mimamsa

B. Vedanta

C. Yoga

D. NYAYA.

7. भारत देश कया द्वीपनुं मलान राज्य छे?

अ. पुष्कर द्वीप

ब. प्लक्ष द्वीप

क. शाल्मल द्वीप

ड. जंबु द्वीप

India is a great nation of which continent (dwipa)

A. Pushkar Island

B. Plaksha Island

C. Shalmal Island

D. Jambudweep

प्र. 2. अ. सविस्तर समजावो. (कोईपण अेक)

(05)

Explain in detail. (Any one of the two)

1. अन्य सभ्यताओ करता भारतीय सभ्यता अलग शा माटे?

Why is Indian culture different from other civilizations?

2. भारतनुं विश्वने विविध क्षेत्रे प्रदान जण्णावो.

Describe India's contribution to the world in various fields.

प्र. 2. ब. सविस्तर समजावो. (कोईपण अेक)

(05)

Explain in detail. (Any one of the two)

1. संस्कृतिनी परिभाषा आपीने सिंधु संस्कृतिनुं वर्णन करो.

Describe the Indus Valley Civilization by giving the definition of civilization.

2. विश्वव्यापी भारतीय संस्कृतिनुं वर्णन करो.

Describe the worldwide influence of Indian culture.

प्र. 2. क. टूंकनोंध लभो (कोईपण अेक)

(05)

Write the shot note. (Any one of the two)

1. मोक्षनो तात्पर्य - The meaning of moksha (salvation)

2. निष्काम कर्म योग - Nishkamkarmyoga