Semester: **First**
Subject: **Digital Logic**
Course No: **CACS 105**

Full Marks: **50**
Pass Marks: **24**
Time: **2:50hr**

Candidates are required to give their answers in their own words as for as practicable. The figure in the margin indicates full marks.

Subjective Test
Group B

Short Answer Questions:

Attempt ANY SIX Questions: [6x5=30]

1. Design a 3 to 8 line decoder using truth table.

2. Define gray code. Write gray code value for decimal number system.

3. Explain rule of Subtraction using 10's Complement. Using 10's complement subtract 72532 - 3250.

4. Convert

    a. $(B9F.AE)_{16}$ in octal.

    b. $(673.124)_8$ in hexadecimal

5. Simplify $F(A, B, C,D) = \prod(0,1,3,7,8,12)$ and $\prod d(5,10,13,14)$. Obtain SOP.

6. Define IC. Explain types of IC.

7. Design a Half Subtractor using Truth table.

Group C

Long Answer Questions:

Attempt ALL the Questions: [2x10=20]

8. What is Parity Generator and Parity Checker? Design a 3 bit even parity generator and checker circuit.

9. Implement the Boolean Function $F(P, Q, R, S) = \sum(1,3,4,6,8,9,13)$ using

    a. Decoder

    b. PLA

"GOOD LUCK"

TRINITY
INTERNATIONAL
COLLEGE

Semester: **First**

Subject: **Computer Fundamentals and Applications**

Course No: **CACS 101**

Full Marks: 50

Pass Marks: 24

Time: 2:50hr

Candidates are required to give their answers in their own words as for as practicable. The figure in the margin indicates full marks.
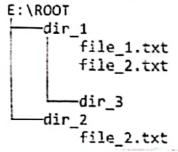
Subjective Test

Group B

Short Answer Qusetions:

Attempt <u>ANY SIX</u> questions: [6x5=30]

1. Define database? Explain the advantages of database over file based system.

2. Consider the following structure and answer the questions. (E:/> is current prompt)

```
E:\ROOT
    ├──dir_1
    │     file_1.txt
    │     file_2.txt
    │
    │     └──dir_3
    └──dir_2
          file_2.txt
```

   a. Write down DOS command to create above files and directories.[2]
   b. Write down Dos command to move all text file into dir_3 directory.[1]
   c. Write DOS command to delete dir_1 directory.[1]
   d. Hide the root directory from E drive. [1]

3. Explain block diagram of computer and its various components.[5]

4. Differentiate between primary and auxiliary memory.

5. What is cache memory? Explain the working mechanism of cache memory.

6. Who is Database Administrator? Briefly explain the responsibilities of DBA.

7. Write down the quality factors of printer while purchasing a printer.

Group C

Long Answer Qusetions:

Attempt <u>ANY TWO</u> questions: [2x10=20]

8. i. Define computer peripherals. Differentiate between impact and non-impact printers.

   ii. Define Computer. Explain the feature of computer.

9. i. What kinds of programs fall under the utility category? Describe a utility program you have on your computer.

   ii. Explain following DOS command with suitable example. [5]

   ATTRIB, XCOPY, MKDIR, MOVE, DEL

10. What is hardcopy? Explain the working mechanism of dot-matrix, laser and ink-jet printer.

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TRINITY INTERNATIONAL COLLEGE
Dillibazar Height, Kathmandu
Mid-Term Assessment 2025
BCA (Batch - 2081)

Set A

TRINITY
INTERNATIONAL
COLLEGE

Semester: First

Subject: Mathematics I

Course No: CAMT 104

Full Marks: 50

Pass Marks: 24

Time: 2:50hr

Candidates are required to give their answers in their own words as for as practicable. The figure in the margin indicates full marks.

Subjective Test

Group B

Attempt ANY SIX questions: [6x5=30]

1. Evaluate without expanding: $\begin{vmatrix} 1/a & a^2 & bc \\ 1/b & b^2 & ca \\ 1/c & c^2 & ab \end{vmatrix}$.

2. Find $f(A)$ if $A = \begin{pmatrix} -1 & 7 \\ 3 & -2 \end{pmatrix}$ and $f(x) = x^2 - 5x - 7$.

3. Find the co-factor of 5 and - 3 from the matrix $A = \begin{vmatrix} 1 & 2 & -3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{vmatrix}$.

4. Find the eccentricity and directrix of $r = \dfrac{25}{10 - 5\cos\theta}$.

5. Using vector method, prove in any triangle ABC, that $b^2 = c^2 + a^2 - 2ac\,\cos B$.

6. Find the locus, vertex, equation of directrix and length of Latus rectum of the ellipse $25x^2 + 4y^2 = 100$.

7. Find the equation of the hyperbola centered at origin that has a focus at (3, 0) and the line x = 3 as the corresponding directrix.

Group C

Attempt ANY TWO questions: [2x10=20]

8. Define transpose of a matrix. Show that $A = \begin{pmatrix} 2 & 4 & 3 \\ 2 & 3 & 4 \\ 5 & 2 & 6 \end{pmatrix}$ as a sum of symmetric and skew symmetric matrix.

9. Find the equation of circle passing through (1, 2), (3, 1) and (-3, -1).

10. Find the volume of the parallelepiped with adjacent edges PQ, PR and PS, where P(-2,1,0), Q(2,3,4), R(1,4,-1) and S(3,6,1).

THE END

TRINITY INTERNATIONAL COLLEGE
Dillibazar Height, Kathmandu
Mid Assessment 2025
BCA (Batch - 2081)
SET B

Semester: First

Subject: Society and technology

Course No: CACS 102

Full Marks: 50

Pass Marks: 24

Time: 2:50hr

Candidates are required to give their answers in their own words as for as practicable. The figure in the margin indicates full marks.

Subjective Test
Group B

Short Answer Questions Attempt ANY SIX questions: [6x5=30]

1. Discuss the relationship between sociology and other social sciences with examples.
2. "Marriage is a universal social institution." Discuss its characteristics in the context of Nepalese society.
3. Define social norms explain its characteristics.
4. Analyze the caste-based social stratification in Nepalese society.
5. Write short notes on any two:
   a. Role
   b. Accommodation
   c. Enculturation
6. What is social status? Describe its types with suitable examples.
7. What are the factors of social and cultural changes in Nepal? List them and describe any three.

Group C

Long Answer Questions Attempt ANY TWO questions: [2x10=20]

8. Evaluate the historical evolution of state formation in Nepal.
9. How do norms, values, and traditions contribute to cultural integration? Discuss their role in fostering social harmony with examples.
10. Define socialization and describe its stages and agents.

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TRINITY INTERNATIONAL COLLEGE
Dillibazar Height, Kathmandu
Mid-Term Assessment 2025
BCA (Batch - 2081)
SET B

TRINITY
INTERNATIONAL
COLLEGE

Semester: First
Subject: English I
Course Code: CAEN103

Full Marks: 60
Pass Marks: 24
Time: 2 hrs. 50 mins.

Candidates are required to give their answers in their own words as far as practicable. The figures in the margin indicate full marks.

Group B

Attempt ANY SIX of the following questions: (6x5=30)

11. What is virtual reality (VR)? Do you think the use of VR in computer war games affects young people's attitude towards violence?

12. Develop the following topic sentence into a well-written paragraph:
    Topic sentence: The rise of social media has effectively blurred the boundary between what is private and what is public.

13. What are some of the ways to keep your computer virus free? Explain briefly.

14. What is operating system (OS)? Why is it important to assess the OS on a computer before buying it?

15. The following are instructions on how to send an email. Translate them into Nepali.
    a. Visit your email website and login using your credentials.
    b. Then, find and click the "Compose" button.
    c. In the "Subject" line, create a subject that accurately reflects the contents of the email.
       Tip: To avoid accidental sending, avoid putting the recipient's email until you have composed and proofread your message.
    d. Compose your message in the main field.
    e. Now, enter the recipient's email address accurately in the "To" field, and find and click "Send."

16. In the following definitions, circle the term defined, underline the group and double underline the characteristic(s).
    a. A network connected over long-distance telephone lines is known as WAN.
    b. A follower is a person who subscribes to another user's social media account to receive updates on their activity.
    c. A virus is a piece of code which is capable of copying itself and has a detrimental effect.
    d. A system is a mixture of integrated parts working together to form a useful whole.
    e. Writing under someone else's name is called ghost writing.

17. Write short note on **ANY TWO** of the following topics.
    a. Digital Transmission   b. Star Network   c. Robert Eye for Surgery

Group C

Attempt ANY TWO of the following questions: (2x10=20)

18. Prepare an advertisement for an anti-virus software you use or the one with which you are most familiar.

19. How are computer researchers and medical doctors like Dr. Trepagnier helping aphasiac patients communicate effectively with the help of computer technology? Answer on the basis of your reading of "Computers in Medicine."

20. You are a product reviewer for a PC magazine. Write a review of a mobile application with which you are most familiar.

ର The End ଚ

ENG I/KRA/26JAN2025