

Bachelor in Computer Application (BCA)

First Semester

Mathematics I (CAMT 104)

Practical examination - model question

Attempt all the questions.

[8 x 5 = 40]

1. What is MATLAB? Write the basic features of MATLAB.
2. Write the uses of run, whose, clc, clear and clearall command in MATLAB.
3. Write a set of commands to solve following equations:
 $5x - 3y = 7$
 $2x + 4y = 8$
4. Write a sequence of commands to enter and calculate the inverse of any 3 x 3 matrix.
5. Find the roots of the equation $5x^2 + 2x - 3 = 0$.
6. Write a sequence of commands to enter and calculate the magnitude of vector.
7. Write a script file to solve any parabolic equation.
8. Create a script file to plot a graph using following information:

x	0	2	4	6	8	10	12	14	16	18	20	24	26	28	30	32	34
y	Sin(x)																

Dear Students, it's just a sample question paper, not a final question paper. You can use either Mathematica or MATLAB for writing commands and scripts as per your convenience, if your external examiner will not mention any specific one.

External Examiner will evaluate you on following parameters:

Topic	Practical	Lab Report	Viva
Marks	10	5	5
Description	Written Test + Practical Test	Documentation of laboratory activities instructed by Laboratory instructor.	Viva



Tribhuvan University
Faculty of Humanities & Social Sciences
OFFICE OF THE DEAN
2018

Bachelor in Computer Applications
Course Title: Digital Logic
Code No: CACS 105
Semester: Ist

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions.

[6×5 = 30]

11. Subtract: $675.6 - 456.4$ using both 10's and 9's complement. [5]
12. What is universal logic gate? Realize NAND and NOR as an universal logic gates. [1 + 2 + 2]
13. Simplify (using K- map) the given Boolean function F in both SOP and POS using don't care conditions D: $B'CD' + A'BC'D$
 $F = B'C'D' + BCD' + ABCD'$ [2 + 3]
14. Define encoder: Draw logic diagram and truth table of octal - to - binary encoder. [1 + 4]
15. What is D flip-flop? Explain clocked RS flip-flop with its logic diagram and truth table. [1 + 4]
16. Design MOD - 5 counter with state and timing diagram. [2 + 1 + 2]
17. Design a 4 - bit serial into parallel- out shift register with timing diagram. [3 + 2]

Group C

Attempt any TWO questions.

[2×10 = 20]

18. Write difference between PLA and PAL. Design a PLA circuit with given functions.
 $F1 (A, B, C) = \Sigma (2, 3, 5)$
 $F2 (A, B, C) = \Sigma (0, 4, 5, 7)$. Design PLA program table also. [3 + 7]
19. Define D flip-flop. Design a Master-slave flip-flop by using JK flip-flop along with its circuit diagram and truth table. [2 + 8]
20. Write down the difference between asynchronous and synchronous counter. Design a 4-bit binary ripple counter along with its circuit, state and timing diagram. [3 + 7]



Tribhuvan University
Faculty of Humanities & Social Sciences
OFFICE OF THE DEAN
2018

Bachelor in Computer Applications
Course Title: Society and Technology
Code No: CASO 102
Semester: IInd

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions.

[6×5 = 30]

11. How sociology is a general science? Discuss with examples.
12. "Family is a primary social institution". Discuss with suitable examples.
13. Define socialization and describe its stages and agents.
14. What is Technological society? Describe its features in third world society.
15. What are the key research methods in social science?
16. What is kinship? Discuss it's types.
17. What are the factors of social and cultural changes? Discuss only three factors.

Group C

Attempt any TWO questions.

[2×10 = 20]

18. What is national integration? Discuss its major dimensions.
19. Discuss the accountability of computer professionals towards society with examples.
20. What are the basic steps of proposal writing in social research? Describe in brief.



Tribhuvan University
Faculty of Humanities & Social Sciences
OFFICE OF THE DEAN
2018

Bachelor in Computer Applications
Course Title: English
Code No: CAEN 103
Semester: Ist

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions.

[6×5 = 30]

11. What are the negative aspects of replacing humans with computers?
12. Write a paragraph explaining how information is processed by information system.
13. How are the multi-user databases managed by a piece of software?
14. Make a list of jobs suitable for robots, and those to be done only by humans.
15. What do you mean by virtual reality? How is it going to affect young people's attitude to violence?
16. Discuss some of the applications of AI programs.
17. What are the actual or potential applications of multi-media in industry?

Group C

Attempt any TWO questions.

[2×10 = 20]



Tribhuvan University
Faculty of Humanities & Social Sciences
OFFICE OF THE DEAN
2018

Bachelor in Computer Applications
Course Title: Mathematics
Code No: CAMT 104
Semester: Ist

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions.

[6×5 = 30]

11. 32 students play basketball and 25 students play volleyball. It is found that 20 students play both the games. Find the number of students playing at least one game. Also, find total number of students if 13 students play none of these games.
12. Let $f: \mathbb{N} \rightarrow \mathbb{N}$ be defined by $f(x) = 2x$ for all $x \in \mathbb{N}$ where \mathbb{N} is the set of natural numbers. Show that f is one-one but not onto function.
13. If the three consecutive term of a geometric series be increased by their middle term, then prove that the resulting terms will be in harmonic progression (H.S.).
14. Find the adjoin of the matrix:
$$\begin{pmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{pmatrix}$$
15. Prove that:
$$\begin{vmatrix} 1+x & 1 & 1 \\ 1 & 1+y & 1 \\ 1 & 1 & 1+z \end{vmatrix} = xyz \left(\frac{1}{x} + \frac{1}{y} + \frac{1}{z} + 1 \right)$$
16. Find the equation of parabola with focus $(-1, 2)$ and directrix $x = -5$.
17. Transform $a = \begin{bmatrix} 1 \\ 1 \\ -1 \end{bmatrix}$, $b = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$, $c = \begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ and check whether this transformation is liner?

Group C

Attempt any TWO questions.

[2×10 = 20]

18. Define permutation and combination try to establish relationship between them with the help of formulae. In how many ways can the letters of the word "LOGIC" be arranged so that
 - i) Vowels may occupy odd position?
 - ii) No vowels are together?

Bachelor in Computer Applications
Course Title: Computer Fundamentals and Application
Code No: CACS 101
Semester: Ist

Full Marks: 60
Pass Marks: 24
Time: 3 hours

Candidates are required to answer the questions in their own words as far as possible.

Group B

Attempt any SIX questions.

[6×5 = 30]

11. Define Computer. Explain the anatomy of digital computer with block diagram.
12. Define Operating System. Explain the functions of Operating System.
13. Define DBMS. Explain the different database models with their merits and demerits.
14. Explain the different types of LAN topologies with their advantages and disadvantages.
15. What is WWW? Differentiate between intranet, extranet and internet with example.
16. What are contemporary technologies? Explain any two contemporary technologies with roles.
17. Write the DOS commands to complete following tasks.
 - a) Create sub directory theory and practical inside d:\exam\
 - b) Create the file name marks.txt inside theory writing the content, "Theory marks in CFA".
 - c) Rename the file name marks.txt with CFAMarks.txt
 - d) Make hidden the file CFAMarks.txt
 - e) Search the all files with .pdf extension.

Group C

Attempt any TWO questions.

[2×10 = 20]

18. i) You are provide following data:

Bageswari Secondary School
Surkhet
Mark - Ledger