

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:

Bageswori Secondary School
Surkhet
Mark - Ledger

D	E	F	G	H	I	J	K	L	M	
11	Name	Eng.	Nep.	Eco.	Sociology	Computer	Total	Percentage	Result	Division
12	Gautam	56	56	76	75	68				
13	Saru	67	54	64	64	76				
14	Bimod	87	65	54	59	66				
15	Ritu	45	67	56	72	85				
16	Kabindra	39	24	63	59	52				

Write the formula in spread sheet package to calculate following on basis on given conditions:

1. Calculate Total marks. [1]
 2. Calculate Percentage. [1]
 3. Mark the student with either "PASS" or "FAIL" [Pass Marks 35]. [1.5]
-
4. Calculate the division [if percentage ≥ 60 then First, if percentage ≥ 45 and percentage < 60 then Second, if percentage ≥ 35 and percentage < 45 then Third otherwise "xxx"] [1.5]
 - ii) Explain the features of Font control tools in word processing package. [5]
 19. i) Define computer peripherals. Differentiate between impact and non-impact printers. [1 + 4]
 - ii) Define Presentation. Write the features of good presentation package. [5]
 20. Define CMYK color model. Explain the basic tools and transforms available in Photoshop. [2 + 5 = 3]



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

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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 A:
$$F = B'C'D' + BCD' + ABCD' + B'CD' + A'BC'D$$
 [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.
 $F_1(A, B, C) = \Sigma(2, 3, 5)$
 $F_2(A, B, C) = \Sigma(0, 4, 5, 7)$. 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
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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]

18. Write a letter of application for a job advertised in a national daily newspaper. Also, write your resume as a supporting document for the application. Follow the criteria of letter writing process.

OR

Your department needs a new piece of equipment to perform work. Write a memo requesting for this equipment with a justification for its need. Follow the criteria of Memo-writing.

19. Suppose you represent the National Council for Educational Technology, and your boss has asked you to make comprehensive notes about the work of the Council. Explain in detail the works of the council. You may write your answer in the form of a presentation to be delivered to a group of teachers.

20. Write a summary of the text "Computer Network".

OR

Mary Evans, Gerry Hasper, Matt Andrews and Bob Bolton are well known software developers. Do they think software purchases are getting what they need? What are their views about giving a better product to purchases?



Tribhuvan University
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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 adjoint 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 $u = \begin{bmatrix} 1 \\ -1 \end{bmatrix}$, $v = \begin{bmatrix} -2 \\ 3 \end{bmatrix}$ by $\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ and check whether this transformation is linear?

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?

19. Define scalar and vector product in three dimensional space with their geometrical interpretation and prove the formula $\sin(A+B) = \sin A \cos B + \cos A \sin B$ by using vector method.
20. Define the logarithmic function, state its properties and if $f(x) = \log \frac{1+x}{1-x}$ ($-1 < x < 1$) show that $f(a) + f(b) = f\left(\frac{a+b}{1+ab}\right)$ ($|a| < 1, |b| < 1$)

