

Gandaki University
BIT Program, Mahendrapool Pokhara
First Term Exam - 2079

Subject : BCT
Sem: First

FM : 35
PM : 16
Time: 1.5 hrs

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

Group A: Long answer questions:

Answer any one questions: **1x10=10**

1. Define sentence. Explain the elements and types of sentences with examples. or
Explain the types of consonant sound in terms of the manner of articulation with examples.

Group B: Short answer question:

Answer any four questions: **4x5=20**

2. What is common core? Mention some instances of common core?
3. Define communication etiquette? Briefly explain the importance of good communication etiquette.
4. Differentiate words and morphemes with suitable examples.
5. What is technical talk? Write some differences between talk and speech.
6. What do you mean by polite and impolite (familiar) language? Elucidate with examples.

Group C: Grammar based/objective questions:

7. Change the sentences as indicated. **5x1= 5**

- a. How many syllables do you hear in these words?

Eraser _____

Fascination _____

- b. Mr. Basnet has arrived. (Change into familiar)
c. Mr. Jack is different than Mrs. Sarah. (Change into British English)
d. My spouse works in London. (Change into common core)
e. She went into the kitchen and brought a cup of tea. (Change into complex sentence)

Good Luck

GANDAKI UNIVERSITY
First Terminal Examination

Level: Bachelors
Semester – I
Year : 2022

Program: BIT
Full Marks : 35
Subject: Basic Electronics
Time: 1:30 minutes

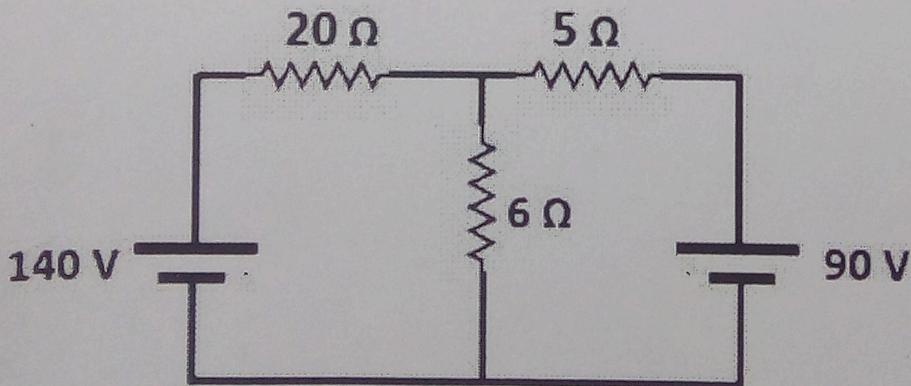
Candidates are required to give their answer in their words as far as practicable.

The figures in the margin indicate full marks.

Attempt all questions.

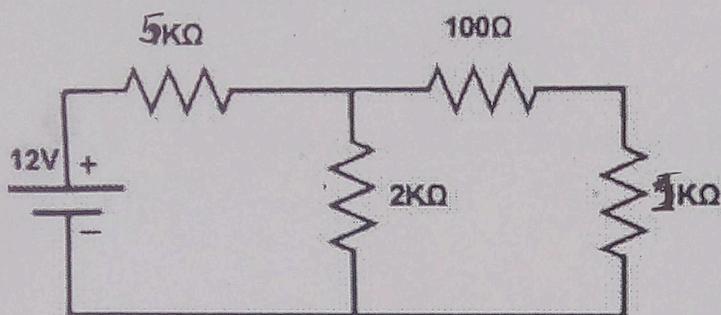
1. Differentiate between series and parallel circuits in terms of voltage and current. [2]
2. What are active and passive components? [2]
3. Find the color code for the resistor $52\text{ K}\Omega \pm 5\%$. [2]
4. State Kirchoff's voltage law. [2]
5. Describe P-N junction diode. [2]

6. Find the current and voltage drop across each resistor in the given figure. (Note: Use the concept of KCL/KVL). [5]



7. Find the current through $1\text{K}\Omega$ resistor using thevenin's theorem.

[5]



8. Differentiate between conductor and insulator in terms of energy band along with necessary figures.

[5]

9. Explain the forward biased PN-junction diode with its I-V characteristics. [5]

10. Write short notes on:(any two)

[2.5+2.5]

1. P-type semiconductor
2. Energy bands
3. Superposition theorem



Gandaki University
Bachelor in Information and Technology
C Programming (Code: CIT-101)

Set A

May 30, 2022

Time: 1 hr 30 min

First (1st) Term

Maximum Marks: 35

Pass Marks: 21

1. Answer shortly.

- (a) Why do we need a program?
- (b) Write syntax of the following keywords.
 - 1. If then else statement
 - 2. for statement
 - 3. do while statement

(c) Discuss the elements used to ~~draw a top-down analysis~~ write a C Structure program.

2. Problem Objective: To find the minimum, average and sum of 10 numbers from the user.

- (a) Write an algorithm
- (b) Write a flowchart
- (c) Write a program in C

3. Answer in brief.

- (a) Write short notes on any of the following programming languages.
 - (i) Fortran
 - (ii) Algol 60
 - (iii) ADA
- (b) What is a datatype in C? Discuss.



Gandaki University
Bachelor in Information and Technology
Workshop: Problem Solving and Logic (Code: CIT-103)

Set A

May 30, 2022

Time: 1 hr 30 min

First (1st) Term

Maximum Marks: 35

Pass Marks: 21

1. Answer in short.

(a) Solve the following cryptarithmetics.

YOUR	SEND	BASE
+	MORE	BALL
YOU	MONEY	GAMES
HEART		

(b) Define problem.

(c) Discuss the elements used to draw a top-down analysis.

2. Answer in brief. ($5 \times 5 = 25$)

- (a) You are faced with a problem to identify the solution to a problem. Define your strategy to solve a problem.
- (b) Write a top down analysis to solve a problem of converting temperature between Celsius and Farhenheit and vice-versa.
- (c) How can we draw a flowchart? Discuss the shapes used to draw them.
- (d) Write steps to form an algorithm.
- (e) What is the difference between pseudo-algorithm ^{code} and an algorithm?

Gandaki University
First Term Exam - 2022

BIT/First Semester

Full Mark: 35

Course: Basic Mathematics (BSM 101)

Time: 1 hr.30 min

Candidates are required to give their answer in their own words as far as practicable. Figures in the margin indicate full marks.

Group A

$(2 \times 5 = 10)$

1. Evaluate the following limits: $\lim_{x \rightarrow 1} (x^3 - x^2 + 2)$
2. Using the definition, find the derivatives of $f(x) = x^2$
3. State the conditions for any function to be continuous and discontinuous. What are the types of discontinuity.
4. Define the derivatives as a rate of change with geometrical explanation.
5. Evaluate: $\lim_{u \rightarrow 2} \frac{u^4 - 16}{u^3 - 8}$

Group B

$(5 \times 5 = 25)$

6. (a) Evaluate: $\lim_{x \rightarrow \infty} \sqrt{3x} - \sqrt{x-a}$
 (b) If $f(x) = 4x^6 + x^4 + x^3 + 8x^2 + x + 3$ then, find $f'(x)$
7. By Implicit differentiation find $\frac{dy}{dx}$,
 $10x^4y - xy^6 - 7y^3 - 4x^3 = 0$
8. Find $\frac{dy}{dx}$ from the following:
 (a) $y = u^2 + 5$ and $u = x^2 + 3$
 (b) $y = \ln(x^3 + 5x^2 + x + 1)$
9. A function is defined as

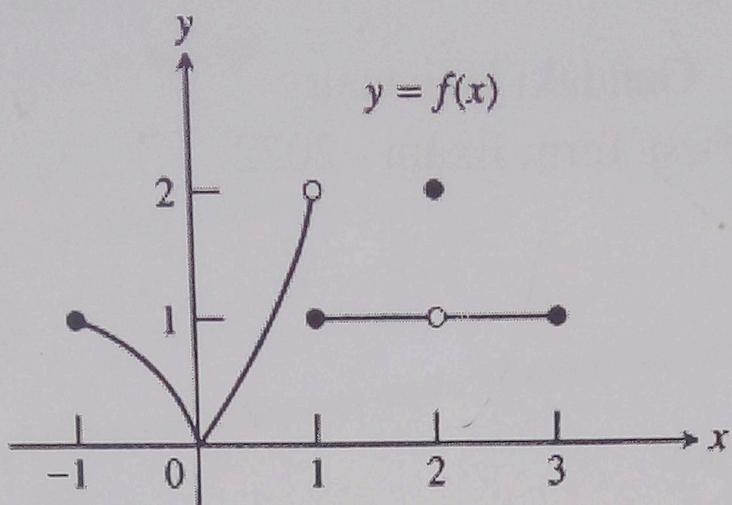
$$f(x) = \begin{cases} x+1 & \text{for } -1 \leq x < 0 \\ x & \text{for } 0 \leq x \leq 1 \\ 2-x & \text{for } 1 < x \leq 2 \end{cases}$$

Discuss the continuity of the function at $x = 0$ and at $x = 1$.

$$\lim_{h \rightarrow 0} \frac{\text{R(Contn)} \cdot f(h)}{h}$$

$$\lim_{n \rightarrow \infty} \frac{\Delta^n \text{r.a.v}}{\Delta^n \text{r.a.v}}$$

10. Which of the following statements about the function $y = f(x)$ graphed here are true, and which are false? 5



- a) $\lim_{x \rightarrow -1^+} f(x) = 1$ ✓ b) $\lim_{x \rightarrow 2} f(x)$ does not exist. ✓ c) $\lim_{x \rightarrow 2} f(x) = 2$ ✓
 d) $\lim_{x \rightarrow 1^-} f(x) = 2$ ✓ e) $\lim_{x \rightarrow 1^+} f(x) = 1$ ✓ f) $\lim_{x \rightarrow 1} f(x)$ does not exist.
 g) $\lim_{x \rightarrow 0^+} f(x) = \lim_{x \rightarrow 0^-} f(x)$ ✓ j) $\lim_{x \rightarrow -1} f(x) = 0$ ✓ k) $\lim_{x \rightarrow 3^+} f(x)$ does not exist.
 h) $\lim_{x \rightarrow c} f(x)$ exists at every c in the open interval $(-1, 1)$. ✓

The End

removable discontinuity
non-removable discontinuity

GANDAKI UNIVERSITY

First Term Exam -2022

Program: BIT

Time: 1.5 hrs

FM :35

Subject: Basics of IT (First Sem)

PM:15

Candidates are required to give their answer in their own words. Figures in the margin indicate full marks.

Short Answer Questions (Attempt any five questions):

5x2=10

1. What are gray codes?
2. Convert $(110010.110)_2 = (?)_{10}$
3. What is memory hierarchy?
4. Define radix in number system?
5. What are the characteristics of Big Data?
6. Differentiate between Data and Information.

Long Answer questions (Any five questions):

5x5=25

1. What is E-commerce? Is e-Sewa an e-commerce application. Explain
2. Explain the role of IT in an organization.
3. What are the differences between database and file processing system?
4. What are ~~gray codes~~ ^{even-odd} Mention the applications of gray code. Convert $(1010101)_G = (?)_B$.
5. Explain truth table, logic diagram and logical symbol of basic gates for three variables.
6. What is Hierarchical database model? Draw E-R Diagram for the following relationship:
 - Employee (E_ID, E_Name, street, city, salary)
 - Work In (E_ID, C_ID)
 - Company (C_ID, C_Name, Location).

Gandaki University
Second Internal Examination

Level : Bachelor
Semester: I
Program: BIT

Subject:Basic Electronics
Full marks:60
Time:2:00 hrs

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

Attempt all the questions.

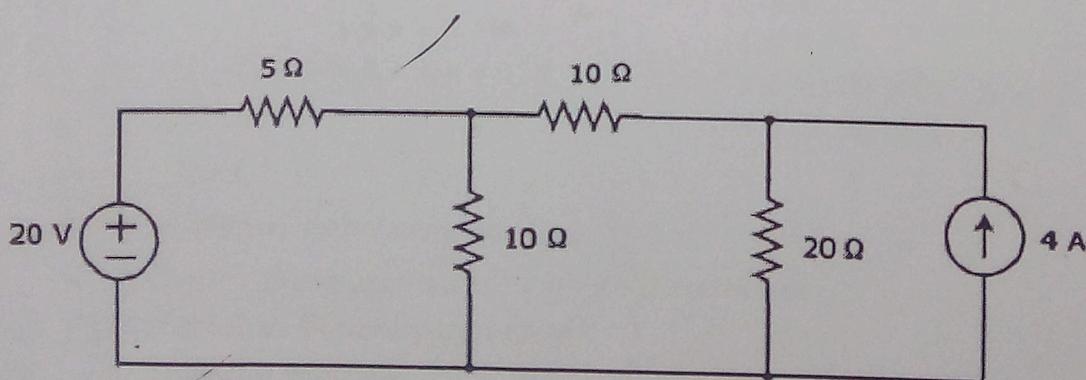
Very Short answer questions.(any ten)

1. Differentiate between active and passive components. [2]
2. Find the color code for the resistor $45 \text{ K}\Omega \pm 10\%$. [2]
3. What are the differences between conductor and semiconductor on the basis of energy gap? [2]
4. Write four ideal properties of an op-amp. [2]
5. Explain wired and wireless communication in the communication system. [2]
6. What are the causes of transmission impairment? [2]
7. State Shannon Channel Capacity Theorem. [2]
8. Describe the causes of transmission impairment . [2]
9. What are the advantages of optical communication over coaxial communication? [2]
10. Define LOS and NLOS with examples. [2]
11. Describe the mode of communication in analog communication system. [2]

Short answer questions:(any four)

12. Calculate the current flowing through 20Ω using the Superposition theorem.

[5]



13. Which rectifier is preferred for full wave rectification? Explain. [5]
14. Derive an expression for dynamic resistance of a small signal model of diode. [5]
15. How can a zener diode be used as voltage regulator? Explain with necessary figures. [5]
16. Derive the expression for an ideal non-inverting amplifier. [5]

Long Answers Question:(any two)

17. Write the input and output characteristics of common base configuration with necessary diagrams. For the Emitter bias network , determine the DC load line and the operating point . Given: $V_{CC}=12V$, $R_B=530K\Omega$, $R_C=5K\Omega$, $R_E=4K\Omega$, $\beta=75$.[5+5]
18. Define modulation. Why is it needed? Explain the block diagram of the digital communication system. [4+6]
19. Write short notes on:(any two) [5+5]
1. Clamper Circuits.
 2. Noise and Interference.
 3. P-type semiconductor.



Gandaki University
Bachelor in Information and Technology
C Programming (Code: CIT-101)

Set A

August 3, 2022

Time: 2 hr

Second (2nd) Term

Maximum Marks: 60

Pass Marks: 24

1. Answer shortly. [20]
- (a) List any four basic Datatypes (with their use) which are supported in C Language? [2]
 - (b) How can we store a negative integer? [2]
 - (c) What do you understand by function? Write its syntax. [2]
 - (d) Why is goto statement not preferred in high level programming languages? [2]
 - (e) What do you understand by scope of a variable? List any two types of scopes you know of. [2]
 - (f) What is a preprocessor directive? [2]
 - (g) Write any four features of C programming language. [2]
 - (h) What do you understand by character streams in implementation of scanf or fscanf? [2]
 - (i) Write differences between compiler and interpreter. [2]
 - (j) Which statement is efficient and why? $x=x+1$; or $x++$; ? [2]
2. Problem Objective: To find the ascending order of a given set of n numbers. *n can be any number. Illustrate proper logic to include set of positive or negative numbers.* [10]
- (a) Write an algorithm [3]
 - (b) Write a program in C [5]
 - (c) Write the output to the program. *You may use trace table also.* [2]
3. Programming Assignment: Write programs in C to generate the following patterns. [10]
- (a)
(b)
4. Answer in brief. [20]
- (a) Write differences between on: (any 2)
 - (i) Nested if-else statement vs if-else-if statement
 - (ii) Actual vs Formal parameters
 - (iii) break vs continue
 - (b) Write short notes on: (any 2)
 - 1. Pointer
 - 2. Structure
 - 3. Passing by reference in user-defined function



Gandaki University
Second Term Exam
2022

Program: BIT
Semester: First

Full Mark: 60
Time: 2 hr

Course: Basic Mathematics (BSM 101)

Candidates are required to give their answer in their own words as far as practicable. Figures in the margin indicate full marks.

Group A

($2 \times 10 = 20$)

1. Determine: $\lim_{x \rightarrow 3} \frac{x^2 - 5x + 6}{x - 3}$

2. If $y = 3t^2 - 4t$, and $t = 5x + 2$, find $\frac{dy}{dx}$

3. Find $\frac{dy}{dx}$: if $x^3 - 3xy + y^3 = 0$

4. Find $\frac{dy}{dx}$ of $y = xe^{2x}$

5. Find the second order derivative of: $y = 10x^3 + 2x^2 - 10x + 2$

6. Use l'Hopital rule to evaluate: $\lim_{x \rightarrow 1} \left(\frac{x^2 - 3x + 2}{x^2 - 4x + 3} \right)$

7. Integrate: $\int \frac{t+3}{t-3} dt$

8. Integrate: $\int \frac{2y^4}{y^5 + 1} dy$

9. Evaluate: $\int_3^4 (x-4)^9 dx$

10. If $A = \begin{bmatrix} 2 & 1 \\ -3 & -2 \end{bmatrix}$, find the inverse of matrix A

Group B

($5 \times 8 = 40$)

11. A function $f(x)$ is defined as follows

$$f(x) = \begin{cases} \frac{1}{2} - x, & \text{when } 0 < x < \frac{1}{2} \\ \frac{1}{2}, & \text{when } x = \frac{1}{2} \\ \frac{3}{2} - x, & \text{when } \frac{1}{2} < x < 1 \end{cases}$$

Is the function $f(x)$ continuous at $x = 1/2$?

12. State Rolle's Theorem. Verify it for the function in the given interval.

$$f(x) = x^2 - 4x - 3, \quad \text{in } [1, 3]$$

13. Determine the local maximum and minimum points of the function $f(x) = 2x^3 + 3x^2 - 12x + 7$

14. Integrate using integration by parts: $\int x^2 \ln x dx$

15. Integrate: $\int \frac{x^2 - 4x}{\sqrt{x^3 - 6x^2 + 2}} dx$

16. Find the area enclosed by $y = x^2$ and $y = 2x + 3$.

17. Solve the given system of equations by using Cramer's rule.

$$2x - 3y - z = 4$$

$$x - 2y - z = 1$$

$$x - y + 2z = 9$$

18. Solve the given system of equations by using Gaussian elimination method.

$$3x + y - 2z = 2$$

$$x - 2y + z = 3$$

$$2x - y - 3z = 3$$



The End

Gandaki University
BIT Program
Mahendrapool Pokhara
End Term Exam - 2079

Subject: BCT.	FM : 60
Sem: First	PM : 30
Subject code: BCT 101	Time: 2 hrs

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

1. Read the following passage and answer the questions: 10

The most surprising and developed symbolic device humanity has evolved is language. By means of language we can conceive the intangible, incorporeal things we call our ideas, and the equally in-ostensible elements of our perceptual world that we call facts. It is by virtue of language that we can think, remember, imagine, and finally conceive a universe of facts. We can describe things and represent their relations, express their rules of interactions., speculate and predict and carry on a long symbolizing process known as reasoning. And above all, we can communicate by producing a serried array of audible or visible words, in a pattern commonly known, and readily understood to reflect our multifarious concepts and percepts and their interconnections. The use of language is discourse; and pattern of discourse is known as discursive form. This is a highly versatile, amazingly powerful pattern. It has influenced our thinking. It has made, far more than most people know, the very frame of our sensory experience the frame of objective facts in which we carry on the practical business of life.

Yet even discursive pattern has its limits of usefulness. Whatever there is in experience that is beyond framework of discursive frame is not communicable through language. So, what we need is art. Art's expressive from can touch the parts of our experience that exist beyond the framework of language though expressive for many because it does not give direct material gain, art's grandeur lies in educating our feeling. By extending our capacity for feeling, art refines our sensibility and helps us touch the finest element otherwise dormant in us.

Questions

- a. Why is language so important?
- b. Why is language called a symbolic system?
- c. Why is language not sufficient for human beings?
- d. How is expressive form very valuable for humanity?
- e. How does the writer evaluate the difference between the discursive and expressive forms?
- 2. Answer any three of the following questions: 15**
- a. What was the grief of Iona Petapov? Whom did he share his grief and what was their response? (Grief)
- b. What are the seven stages of life according to the poet? Explain briefly. (All the World's a Stage)
- c. Briefly sketch the character of Pahaom. (How Much Land Does a Man Need?)
- d. How is knowledge deeply associated with wisdom? (Knowledge and Wisdom)
- 3. Write a job application for the position of IT officer to the MD of Himal Steel Company, Balaju, Kathmandu in response to the advertisement published in The Rising Nepal. Also make a neat sketch of our Resume/CV 8**
- 4. Prepare a technical talk on the topic 'Television'. 7**

Or

Imagine that you are secretary of a club. The fifteenth meeting of your club was held on 18th July 2022. Write the minutes of the meeting concerning the following agendas:

- 15.01: Appointing an office secretary
 - 15.02: Arranging club's general meeting
 - 15.03: Purchasing some computers for the club
 - 15.04: Distributing charity to earthquake victims
- 5. Read the following passage carefully, take down notes and write a summary. 7**

By far the most popular and most consumed drink in the world is water, but it may come as no surprise that second most popular beverage is tea. Although tea was originally grown only in certain parts of Asia in countries such China, Burma, and India – it is now a key export product in more than 50 countries around the globe.

Countries that grow tea, however, need to have the right tropical climate, which includes up to 200 centimetres of rainfall per year to encourage fast growth and temperatures that range from ten to 35 degrees centigrade.

They also need to have quite specific geographical features, such as high altitudes to promote the flavour and taste of the tea, and land that can offer plenty of shade in the form of other trees and vegetation to keep the plants cool and fresh. Together these conditions contribute to the production of the wide range of high-quality teas that are in such huge demand among the world's consumers. There is green tea, jasmine tea, earl tea, peppermint tea, tea to help you sleep, tea to promote healing and tea to relieve stress; but above all, tea is a social drink.

6. Explain the types of vowel sound with examples.

7

Or

Imagine that you are a senior manager of 'Narayani Resort'; three dozen of tourists are coming today to visit your resort. Write a memo asking your assistant to assign a tourist guide around your resort centre.

7. Change the sentences as indicated.

6x1= 6

- a. Indicate the tones (rising, falling, fall/rise) in the following sentences.
 - i. Where do you work?
 - ii. Are you fine?
- b. May I have your bike? (Familiar/impolite)
- c. Mr. James is a lorry driver. (American English)
- d. After the decease of her mother, she has to manage the whole household works. (Common core)
- e. Rajiv Gandhi who was the Prime Minister of India is dead. (Simple sentence)
- f. How many syllables do you find in the following words?

Psychology

Tomorrow

Good Luck

GANDAKI UNIVERSITY

Second Terminal Exam -2022

BIT/First Semester

Time : 2 hrs

FM :60

Course: Basics of IT (CIT 102)

PM: 24 hrs.

Candidates are required to give their answer in their own words as far as practicable. Figures in the margin indicate full marks.

$10 \times 2 = 20$

Brief Answer Questions:

1. Define encryption and decryption.
2. What is security policy?
3. Why do we need DSS?
4. List the features of Big Data?
5. Differentiate between Intranet and Extranet.
6. Differentiate between passive and active attack.
7. What is firewall? Give examples.
8. What is WWW?
9. What is IOT?
10. Define cookies

Short Answer questions (Any six questions):

$6 \times 5 = 30$

1. What is OSI model? Explain the functions of Transport layer and Application layer in TCP/IP model.
2. Explain the role of IT in an organization.
3. What is cloud computing? Explain cloud Deployment models.
4. Why is big data important? Explain various fields where the concept of big data can be applied.
5. What is computer software? Explain system software and application software with example.
6. What is E-R diagram? Give an example of E-R diagram.
7. What is security awareness? What is the need of spreading security awareness?

Long Answer questions:

$1 \times 10 = 10$

1. You are appointed as the IT officer of a ABC cooperative pvt.Ltd. In order to improve the workplace productivity, provide a conceptual design of hardware, software, security and network essentials.



Gandaki University
Bachelor in Information and Technology
Workshop: Problem Solving and Logic (Code: CIT-103)

Set A

August 3, 2022

Time: 2 hr

Second (2nd) Term

Maximum Marks: 60

Pass Marks: 24

1. Answer in short. [10]
 - (a) List the stages of problem analysis. [2]
 - (b) A set of numbers are given to you 15, 26, 7, 7, 2, 18
 - i. What is the magic word? LOOSER, WINNER, LOTtoS, TICKET [2]
 - ii. How did you solve this problem? [2]
 - (c) How is data verification done in programming tasks? [2]
 - (d) Write a flowchart to find if a number is even or odd. [2]
2. Define [10]
 - (a) Problem
 - (b) Divide and Conquer
 - (c) Induction
 - (d) Recursion
 - (e) Proof by contradiction
3. Write short notes on: [20]
 - (a) Algorithm
 - (b) Flowchart
 - (c) Differences between Top Down Analysis and Bottom-Up Analysis
 - (d) Data Validation
4. Use trace tables to find the output of following pseudo-codes. Describe your approach to validate and verify the problems. [10]
 - (a) BMI Calculator

```
print("Welcome to the BMI Calculator")
weight = input("Please enter your weight in kilograms:")
height = input("Please enter your height in metres:")
bmi = weight / height / height
if bmi < 18.5 then
    description = "underweight"
elseif bmi < 25 then
    description = "healthy"
elseif bmi < 30 then
    description = "overweight"
else
    description = "obese"
endif
print("Your BMI is " + bmi + " which is " + description)
```

(b) User

```
do
    username = input("Enter username:")
    password = input("Enter password:")
    if username == "LongPA" AND password == "letmein" then
        authenticated = true
        print("Welcome.")
    else
        authenticated = false
        print("Username and password wrong. Try again.")
    endif
until authenticated
```

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

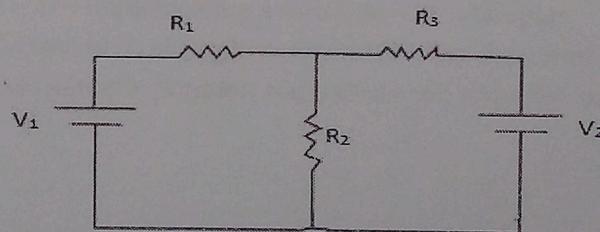
Attempt all the questions.

1. Answer the following questions (*Any five*). [5×2=10]

- Explain series and parallel circuits in brief.
- What is the relationship between α , β , γ .
- What is transistor biasing? Explain.
- State Shannon's channel capacity theorem with expression.
- Describe the need for ECG in electronic circuits.
- Differentiate between P & N type of semiconductor.

2. Answer the following questions (*Any five*). [5×5=25]

- Using Thevenin's theorem, calculate the current flowing through R_2 . Given, $R_1=80\Omega$, $R_2=100\Omega$, $R_3=60\Omega$, $V_1=100V$, $V_2=60V$.

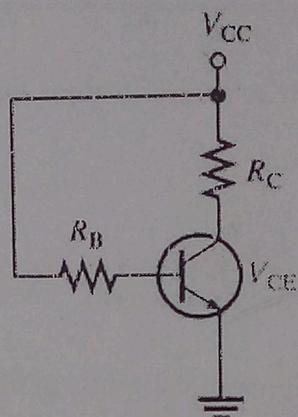


- Define clamper circuits. Explain different types of clamper circuits.
- Explain common emitter configuration of transistor with necessary figures, and obtain the relationship for current gain of the circuit.
- With the aid of block diagram, explain analog communication system. Describe each block in detail.
- What is a transducer? Explain regulated power supply with necessary details.
- Name the properties of ideal op-amp. Show operational amplifier as an adder circuit.

[$2 \times 7.5 = 15$]

3. Answer the following questions.

- a) Which rectifier is preferred for full wave rectification? Explain it with necessary diagrams. For base biasing circuit of silicon, calculate operating point for data: $V_{CC} = 20V$, $R_B = 200k\Omega$, $R_C = 5k\Omega$, $\beta = 200$.



- b) Write short notes on:
- Zener diode as voltage regulator.
 - Noise and interference.

The End





Gandaki University
Pokhara

BIT/First Semester/2079

Full Marks: 50

CIT101 Computer Programming I

Time: 2hrs

Pass Mark: 22.5

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

Attempt all the questions.

1. Answer the following questions in brief (*Any five*). [5×2=10]

- a) List the use of programming in real world scenario with example.
- b) Write the technique to construct an identifier.
- c) Differentiate between a library function and user defined function.
- d) What is the main difference between a string and a character array?
- e) Define the system software with an example.
- f) What is a double pointer? Provide syntax for it.

2. Answer the following questions (*Any five*). [5×5=25]

- a) Define datatype. Write a function called ‘display_series (int n)’ from the main function to print a Fibonacci series. Here, ‘n’ indicates the number of elements to display.
- b) Discuss the formatted input and formatted output syntax and the meanings to their functions.
- c) Differentiate between library function and user-defined functions with short programs for each.
- d) Explain passing by reference while implementing a function with examples.
- e) What is a function prototype? Provide an example program showing the use of a function prototype.
- f) What is a structure? Provide an example program and explain the ways for accessing the elements of the structure.

3. Answer the following questions. [2×7.5=15]

- a) How is nested if different than the if-else if-ladder? Provide an example program to calculate the grade of the students.
- b) Why did compiler designers initialized a file variable to be a pointer? Write a C program to read data from the user to store the students' marks in 3 subjects. Open the data file in another program to find the students roll number whose average marks is greater than 35. Full marks=50.

The End





Gandaki University

Pokhara

BIT/First Semester/2079

Full Marks: 50

BCT101 Business Communication Techniques

Time: 2hrs

Pass Marks: 22.5

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

Attempt all the questions.

1. Read the following passage and answer the questions that follow:

[$5 \times 2 = 10$]

The real crisis of our times is the crisis in management. I believe that the solutions to our problems lie in the development of the art and practice of management at all levels and in all facets of our national activities—from a small ‘bhat’s’ tea-shop to the multifaceted international organization or the huge and baffling economics and social problems that are beyond the reach of either government or business acting alone.

I strongly believe that private sector can contribute something far more important than even money, that is, management raised to a whole new order of magnitude—in the attainment of the new social and economic objectives put forward by our government.

“But how do we do it?” The answer lies developing a deeper sense of social responsibility on the part of our men in management. Management must act in concert with a broad social interest and serve the objectives of the society. The various socio-economics measures now being taken in the fields of licensing, price regulation and distribution of essential commodities etc. will not lead us towards attainment of new social objectives unless we ensure the benefits of these measures go to the ultimate consumer—the common man. This is possible only through right management. Proper understanding and course, above all, through cooperation among all concerned.

Indian management has the skills, know-how and capacity to cope with new challenges. We start now. The opportunities are there if we will but see them and see them quickly.

Questions:

- a. In what sense is the crisis of our times the crisis in management?
- b. What contribution can the private sector make towards the attainment of economic objectives?
- c. What does Indian management lack?
- d. How can we ensure that common man gets the benefit of various socio-economic measures?
- e. What is the central idea of the passage?

2. Answer the following questions (*Any three*).

[$3 \times 5 = 15$]

- a. Summarize Churchill’s speech in one paragraph? (The First Speech as the Prime Minister).
- b. What are the seven stages of life according to the poet? Explain briefly. (All the World’s a Stage)
- c. How is knowledge deeply associated with wisdom? (Knowledge and Wisdom)
- d. Briefly sketch the character of Pahamom. (How Much Land Does a Man Need?)

[5×1=5]

Change the following sentences as indicated.

a. Indicate the tones (rising, falling, fall/rise) in the following sentences.

- i. Nice to meet you
- ii. Have you ever been to India?

b. He is different than me. (BrE)

c. My spouse works in an insurance company. (Common Core)

d. When the cat is away, the mice will play. (Simple sentence)

e. Put the primary stress on the following words.

Television Present (n)

As a manager of Nepal Welfare IT company, you have noticed that some of the staff are coming office late and leaving the office earlier than the prescribed time. Write a memo circulating all staff members to be punctual in the office and leave the office as given time. [6]

You have been noticing that students who go to college early in the morning have been facing the problem of stay-dogs and they have been barking and attacking college-going students. Write a complaint letter to the Mayor of Pokhara Metropolitan City about the possible treatment of those dogs. [7]

OR

Write a technical talk on the topic "Urbanization" or "Digital Payment". First, prepare an outline and then write the talk.

Read the following passage carefully, take down notes and write a summary.

[7]

As material civilization advance and the supply of available goods and services increases, man's needs correspondingly multiply.

Advertising plays a key role in this never-ending process by stimulating the public's desire for certain products, and by promoting the scale. A familiar example is the motor car-once a rare and costly novelty, now a ubiquitous/everywhere and relatively inexpensive necessity. More recently, the television set has undergone the same transformation. While some people would deny that television is a necessity, the face that sets are found in majority of western homes shows that is answer, to a greater or lesser degree, the need felt by millions of people for entertainment and information.

A product service or commodity that the public needs, and knows it needs, tends of course to 'sell itself.' We might, therefore, assume that in such cases, advertising would be of minor importance. To some extent this is true. Meat packers, vegetable and fruit growers, and diary operators spend less on advertising, for instance, than manufacturers of cigarettes liquors, cosmetics, and other items of this type.

On the other hand, the competition that exists between rival brands means that the suppliers of such basic necessities as food, clothing, and housing must advertise their wares to stay in business. Significantly the industry that spends most on advertising turns out a product which almost everyone considers a necessity: soap.

The End

BIT/First Semester/2079

BSM101 Mathematics-I

Time: 3hrs

Full Marks: 75

Pass Mark: 34

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

Attempt all the questions.

1. Answer the following questions (Any ten).

[$10 \times 2 = 20$]

- a) Find $\lim_{x \rightarrow 3} \frac{x^5 - 3^5}{x - 3}$.
- b) Find $\frac{dy}{dx}$, if $x = at^2, y = 2bt$
- c) Find all the critical points (stationary points) of $f(x) = x^3 - 6x^2 + 12x - 5$
- d) If $f(x) = \sin x$ in $[0, \pi]$, find the value of C prescribed by Rolle's theorem.
- e) Evaluate: $\int xe^x dx$
- f) Evaluate: $\int \frac{x+3}{x-6} dx$
- g) By using properties of determinant, show that $\begin{vmatrix} 1 & -3 & 5 \\ 2 & 4 & 7 \\ 3 & -9 & 15 \end{vmatrix} = 0$
- h) If $A = \begin{bmatrix} 6 & -12 \\ -3 & 6 \end{bmatrix}, B = \begin{bmatrix} 12 & 6 \\ 6 & 3 \end{bmatrix}$ Find AB
- i) Define scalar multiplication of a matrix with an example.
- j) Find λ so that the vectors $\vec{a} = 2\vec{i} + \lambda\vec{j} + \vec{k}$ and $\vec{b} = 4\vec{i} - 2\vec{j} - 2\vec{k}$ are perpendicular.
- k) Test for the dependence and independence of the following vectors.

$$\vec{a} = \vec{i} - 2\vec{j} + 3\vec{k}$$

$$\vec{b} = -2\vec{i} + 3\vec{j} - 4\vec{k}$$

$$\vec{c} = -2\vec{j} + 2\vec{k}$$

2. Answer the following questions (Any eight).

[$8 \times 5 = 40$]

a) Find $\frac{dy}{dx}$ when $y = \ln(x + \sqrt{x^2 + a^2})$

b) A function $f(x)$ is defined as

$$f(x) \begin{cases} 2x + 5 & \text{for } x < 3 \\ 3x + 2 & \text{for } x = 3 \\ 2x^2 - 7 & \text{for } x > 3 \end{cases}$$

Discuss the continuity of the function $f(x)$ at $x = 3$.

c) Integrate:

$$\int \frac{x+2}{\sqrt{x^2+4x+3}} dx$$

- d) Find the intervals in which $f(x) = 2x^3 - 15x^2 + 36x + 1$ is increasing or decreasing.
- e) Find the area bounded by the curve $y = 3x^2 + 6x + 8$, the x -axis and ordinates, $x = 0$ and $x = 3$.
- f) Solve the following system of equations by using matrix or determinant method.

$$x - y + z = 2,$$

$$2x - y + 3z = 9, \text{ and}$$

$$x + y + z = 6.$$

- g) Solve the given system of equation using Gaussian elimination method.

$$2x + 2y = -6$$

$$x - y + z = 1$$

$$3y - 2z = -5$$

- h) Find the area of parallelogram with vertices, $A (1,2,3)$, $B (1,3,6)$, $C (3,8,6)$, and $D (3,7,3)$.

- i) Evaluate:

$$\lim_{t \rightarrow 4} \frac{t - \sqrt{3t+4}}{4-t}$$

3. Answer the following questions.

[2×7.5=15]

- a) Define inverse of a matrix. If $A = \begin{bmatrix} 1 & 1 & 1 \\ 1 & 2 & 3 \\ 1 & 4 & 9 \end{bmatrix}$, Find A^{-1} . Hence show that $AA^{-1} = A^{-1}A = I$

where, the symbols have their usual meanings.

[1.5+4+2]

- b) What are the criteria for maxima and minima of a function? Find the maximum and minimum values of the function $f(x) = 2x^3 - 21x^2 + 36x - 20$. Also find the point of inflection, if exists.

[2.5+4+1]

The End





Gandaki University

Pokhara

BIT/First Semester/2079

Full Marks: 75

CIT102 Basics of IT

Time: 3hrs

Pass Mark: 34

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

Attempt all the questions.

1. Answer the following questions in brief (*Any Ten*). [10×2=20]

- a) What are the different elements of information system?
- b) What are the most common four types of number system?
- c) Why do we need data warehouse?
- d) Write the functions of Data link layer.
- e) Why is internet security important?
- f) Why do we need firewalls?
- g) Give the real-world example of B2B and B2C.
- h) What are intranets and extranets?
- i) What is e-payment and its types?
- j) Why IP address is used in internet?
- k) How virus differs from worms?

2. Answer the following questions (*Any eight*). [8×5=40]

- a) How is IT managed in organization? Explain with example.
- b) Convert:
 - i. $(1567)_{16}$ to $(?)_8$
 - ii. $(10101101)_2$ to $(?)_{16}$
- c) Why do we need data models? Explain any one of the data models.
- d) Explain the application of Telecommunication and Computer Network?
- e) What is data encryption and why should it be encrypted?
- f) What are the different functional areas of business and what are their responsibilities?
- g) Explain decision support system with example.
- h) Explain about different types of software and their uses in computer system.
- i) What are the different Boolean Algebra operations?

3. Answer the following questions. [2×7.5=15]

- a) Explain about the cloud computing Architecture.
- b) What do you mean by market research and how does it help to develop the business in the market?



Set A

September 23, 2022

Time: 45 minutes

Gandaki University
Bachelor in Information Technology
Workshop: Problem Solving and Logic (Code: CIT-103)

Final Exam

Maximum Marks: 35

Pass Marks: 20

1. Answer briefly.

(a) List the stages of problem analysis.

(b) Write an Algorithm to find the greatest of three numbers. Visualize it with a suitable flowchart diagram.

(c) How do you debug a problem issue? Enlist any five techniques with suitable description.

[35]

[5]

[10 + 10]

[10]

Student's name:

Best of Lucks !!!!