16/01/25

1 SET XEROX

JGI ARKA JAIN University, Jharkhand — NAAC GRADE A, ACCREDITED UNIVERSITY			END SEM EXAMINATION School of Engineering & IT
Branch	ME / EEE / CSE	Program	B. Tech
Subject Name	Engineering Mathematics-III	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Three out of Five of Section C • Possession of Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Paper(s).		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Write the general solution of one- dimensional Wave equation.	2	CO2	K1
ii	Solve $Z= px + qy + \sqrt{1 + p2 + q2}$.	2	CO1	K2
iii	Write the relation between Mean Median and Mode.	2	CO2	K2
iv	Define the Lagrange's Auxiliary equation?	2	CO2	K2
v	Write down the general solution of one-dimensional heat flow equation	2	CO1	K1
vi	Give one example of Quasi linear partial differential equation	2	CO3	K5
vii	In a continuous random variable p.d.f. is given by $f(x)= 3x^2$; $0<x<1$ and $P(x<a)=P(x>a)$ then find a.	2	CO1	K1
viii	Write two dimensional Laplace equation.	2	CO1	K2
ix	Find the PDF by eliminating Arbitrary function $f(x+y+z, x^2+y^2-z^2)$.	2	CO3	K2
x	A p.d.f is given as $f(x)= x(x-1)$; $0<x<1$, check whether it is a probability density function or not?	2	CO1	K3

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Solve $(D^2 - 4DD' + 4D'^2)z = e^{x+2y}$	05	CO2	K5
3	The initial Value problem $U_{tt} = 4\,U_{xx}$, $-\infty < x < \infty$, $t>0$ $U(x, 0) = -x$, $Ut(x,0) = 0$ then Find the value of $U(2,2)$.	05	CO2	K5
4	Solve $(x^2 - y^2 - z^2)p + 2xyq = 2xz$	05	CO2	K3
5	Find out Mean from the following data. Class Interval: 0-10 | 10-20 | 20-30 | 30-40 | 40-50 Frequency: 4 | 6 | 10 | 8 | 2	05	CO1	K3
6	The probability Mass function of a variabe X is X: 0 | 1 | 2 | 3 | 4 | 5 | 6 P(x): k | 3k | 5k | 7k | 9k | 11k | 13k (i). Find $p(x<4)$, $P(X>5)$, $P(3<x<6)$ (ii) what will be the minimum value of k so that $P(X<2)>3$.	05	CO1	K4
7	Solve $(D^2 + 3DD' + 2D'^2)\,z = 12xy$	05	CO1	K2

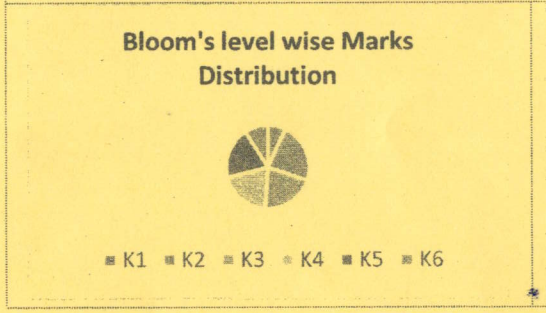
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

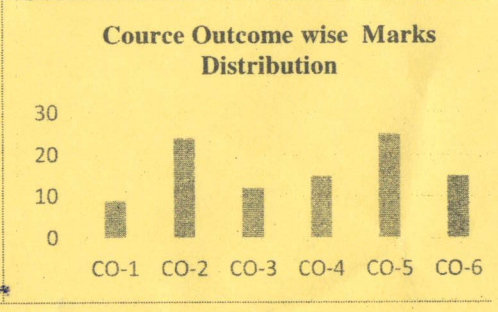
Q. No.	QUESTIONS	Marks	COs	KL
8	A string is stretched and fastened to two points L apart. Motion is started by displacing the string in the form $y = a\sin(\frac{\pi x}{l})$ from which it is released at time t=0. Show that the displacement of any point at a distance x from one end at a time t is given by $y(x,t) = a\sin(\frac{\pi x}{l})\cos(\frac{\pi ct}{l})$.	10	CO1	K4
9	Fit a straight line for the following data by least square method X: 1 | 2 | 3 | 4 | 6 | 8 Y: 2.4 | 3 | 3.6 | 4 | 5 | 6	10	CO1	K5
10	Derive the general solution of one dimensional wave equation.	10	CO1	K5
11	Classify the following partial differential equation $x^2\frac{\partial^2 u}{\partial t^2} + 3\frac{\partial^2 u}{\partial x \partial t} + x\frac{\partial^2 u}{\partial x^2} + 17\frac{\partial u}{\partial t} - 100u = 0$	10	CO3	K3
12	Find the CF and PI of the PDE: $(D^2 + 2DD' + D'^2)Z = \sin(2x + 3y)$	10	CO2	K5

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	The mathematical tools needed in evaluating multiple integrals and their usage.
	CO2	The effective mathematical tools for the solutions of differential equations that model physical processes.
	CO3	The tools of differentiation and integration of functions of a complex variable that are used in various techniques dealing engineering problems
	CO4	An ability to apply effective, creative and innovative solutions, both independently and cooperatively, to current and future problems.
	CO5	A commitment to continuing learning and the capacity to maintain intellectual curiosity.
	CO6	An ability to develop statistical technique, data sampling.

GRAPHICAL REPRESENTATION



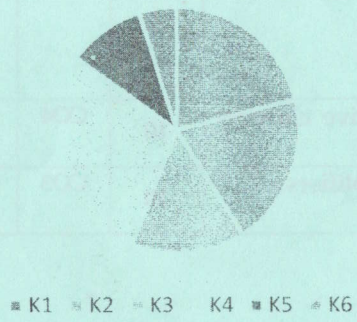


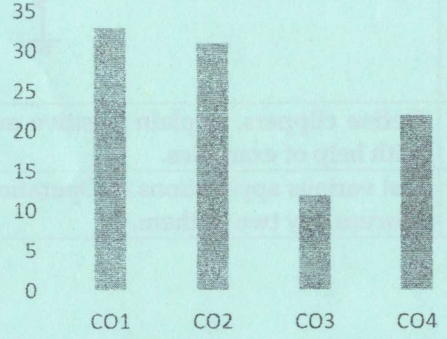
18/01/25

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand the characteristics of transistors.
	CO2	To Design and analyze various rectifier and amplifier circuits.
	CO3	Design sinusoidal and non-sinusoidal oscillators.
	CO4	Understand the functioning of OP-AMP and design OP-AMP based circuits.

GRAPHICAL REPRESENTATION





ARKA JAIN University Jharkhand — NAAC GRADE A

END SEM EXAMINATION
School of Engineering & IT

Branch	Computer Science Engineering	Program	B. Tech
Subject Name	Analog Electronic Circuits	Semester	III
		Year	January, 2025

Time: 3 Hour
Max. Marks : 70

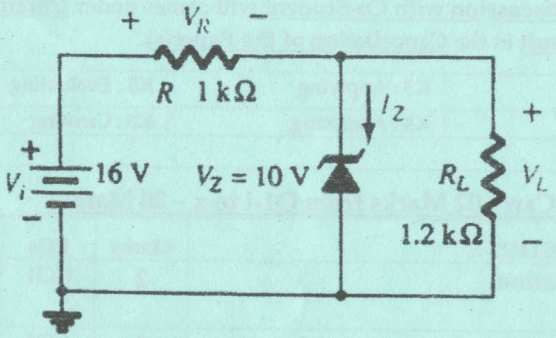
- Start writing from 2nd page onwards; **don't Write on the 1st Page Backside**
- **Answer all Questions of Section A (Compulsory)**
- **Answer Any Four out of Six of Section B**
- **Answer Any Three out of Five of Section C**
- **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.

Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

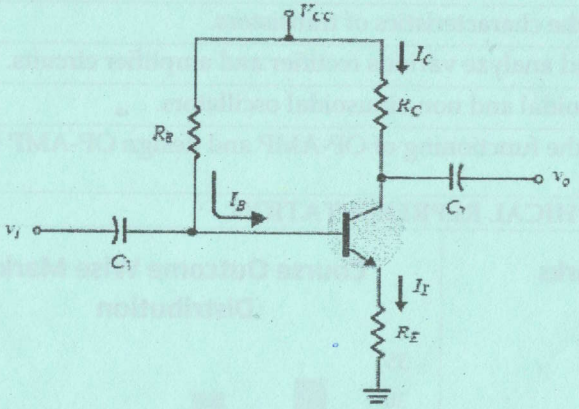
Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Give the diode current equation.	2	CO1	K1
ii	What is the primary function of a clipper circuit?	2	CO1	K2
iii	Write any two differences between Zener breakdown and Avalanche breakdown	2	CO1	K4
iv	Why is BJT is called current controlled device?	2	CO1	K4
v	Define sinusoidal oscillators. List two types of Op-Amp based oscillators.	2	CO3	K2
vi	Define stability factor.	2	CO2	K2
vii	What is meant by Pinch-off voltage?	2	CO2	K1
viii	Draw the symbol for - i) P-channel JFET ii) N-channel JFET	2	CO2	K1
ix	Define common mode rejection ratio (CMRR).	2	CO4	K2
x	List various applications of a BJT.	2	CO2	K2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Derive the relation between α and β.	5	CO2	K3
3	Differentiate between N and P channel FETs.	5	CO2	K4
4	For the Zener diode regulator, Determine V_L, V_R, I_Z and P_Z 	5	CO1	K6
5	Give comparison of BJT and FET.	5	CO2	K4
6	Explain the difference between inverting and non-inverting op-amp configurations.	5	CO4	K4
7	What is an operational amplifier? List its ideal characteristics.	5	CO4	K1

Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	Cos	KL
8	Explain the operation of PN junction under forward and reverse bias condition with its characteristics.	10	CO1	K1
9	Discuss and illustrate the input and output characteristics of a transistor in CB and CE configurations.	10	CO1	K4
10	Why biasing is required in transistor? Analyze the following circuit given: $\beta = 75$, VCC = 16V, $R_B = 430k\Omega$, $R_C = 2k\Omega$ and $R_E = 1k\Omega$ 	10	CO2	K5
11	Define clippers. Explain positive and negative clippers with help of examples.	10	CO4	K3
12	List various applications of Operational Amplifiers. Discuss any two of them.	10	CO3	K2

21/01/25

JGI	**ARKA JAIN University** Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY	**END SEM EXAMINATION** School of Engineering & IT	
Branch	Computer Science & Engineering	Program	B. Tech
Subject Name	Data Structures	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't Write on the 1st Page Backside** • **Answer all Questions of Section A (Compulsory)** • **Answer Any Four out of Six of Section B** • **Answer Any Three out of Five of Section C** • **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

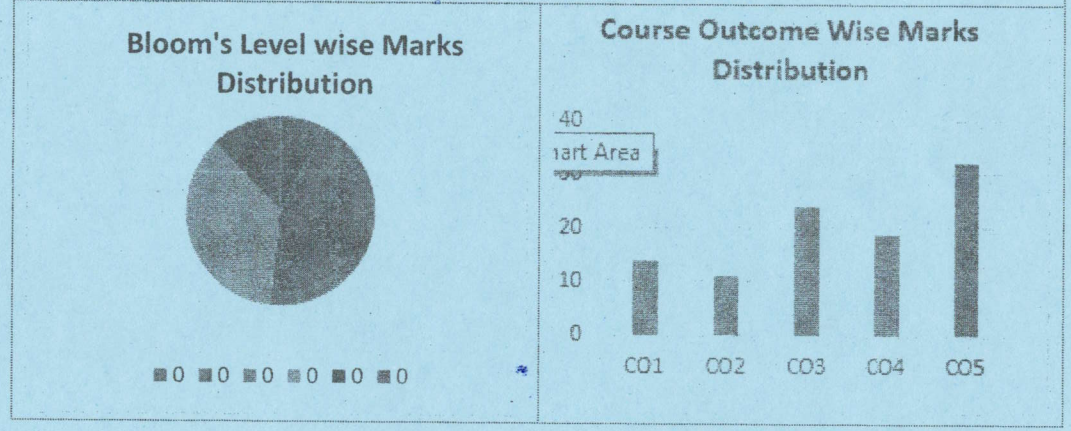
Q. N 1	QUESTIONS	Marks	COs	KL
i	Explain time and space complexity in problem solving	02	CO1	K4
ii	Define algorithm. Mention the characteristics for an algorithm to be useful.	02	CO2	K2
iii	Mention the overflow and underflow condition of stack.	02	CO3	K2
iv	Write the difference between single linked list and double linked list with an example	02	CO3	K1
v	Analyze and explain about the drawbacks of stack and queue due to which linked list has come to picture.	02	CO3	K1
vi	What do you mean by weighted and non-weighted graph	02	CO5	K4
vii	Mention the differences between tree and graph	02	CO5	K4
viii	Differentiate between full binary tree and complete binary tree.	02	CO5	K2
ix	Differentiate between extended binary tree and skew binary tree	02	CO3	K4
x	Convert the following infix operation to prefix operation using standard arithmetic operators and precedence level:(A+B*(C-D^E)/F)	02	CO3	K2

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	**QUESTIONS**	**Marks**	**COs**	**KL**
2	Apply Bubble sort to sort the following numbers: 14,33,27,35,10	05	CO4	K6
3	Convert the following Infix into Postfix expression: A+(B*C)/D	05	CO3	K4
4	Write an algorithm to insert an item in a Queue data structure and explain each step	05	CO3	K6
5	Construct a maximum heap tree from the following sequence of inputs: 45, 32, 50, 22, 65, 55, 77	05	CO5	K2
6	Write an algorithm for quick sort and heap sort and explain	05	CO4	K2
7	Create an algorithm for Push and Pop operations on Stack using Arrays	05	CO5	K1
Section C (Answer any THREE out of FIVE) – 30 Marks- (Each question Carry 10 Marks)				
Q. No.	**QUESTIONS**	**Marks**	**COs**	**KL**
8	Create a Binary search Tree for the following values 45, 15, 79, 90, 10, 55, 12, 20, 50 and perform Binary search Tree (BST) Traversals.	10	CO4	K2
9	Write a C Program to insert an element after a specific node in a single linked list by using structure	10	CO3	K4
10	Define Tree. Explain the tree traversals with algorithms and examples.	10	CO2	K2
11	Write a C program to perform searching operations using linear and binary search	10	CO4	K4
12	Apply Quick sort to sort the following numbers: 22, 47,43,34,10,60,55,31,20 using '22' as pivot element and explain each step	10	CO5	K2

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Analyze the algorithms to determine the time and computation complexity and justify the correctness.
	CO2	Design and implement data structures related to search problems
	CO3	For a given problem of Stacks, Queues and linked list implement and analyze to determine the time and computation complexity.
	CO4	Understand logic behind various sorting algorithms and compute the time complexity
	CO5	Learn and implement Graph search and traversal algorithms and determine the time and computation complexity.

GRAPHICAL REPRESENTATION



23/01/25

ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY		**END SEM EXAMINATION** School of Engineering & IT	
Branch	**Computer Science Engineering**	**Program**	**B.Tech**
Subject Name	**Organizational Behaviour**	**Semester**	**III**
		Year	**January, 2025**
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't Write on the 1st Page Backside** • **Answer all Questions of Section A (Compulsory)** • **Answer Any Four out of Six of Section B** • **Answer Any Three out of Five of Section C** • **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Define individual Behaviour in industry?	2	CO1	K1
ii	What is attitude describe briefly?	2	CO1	KL2
iii	Explain motivation briefly?	2	CO2	KL1
iv	Define learning briefly?	2	CO2	KL1
v	Explain Two way communication?	2	CO3	KL2
vi	"Leadership is situational" Discuss?	2	CO4	KL2
vii	Explain Group Processes	2	CO3	KL3
viii	Define Good appraisal in brief?	2	CO3	KL1
ix	What is self -concept	2	CO3	KL2
x	Define personality briefly?	2	CO2	KL2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Define communication? Difference between formal and informal communication?	5	CO1	KL1
3	Why there is a need to study of organizational behavior	5	CO3	KL4
4	Difference between formal and informal group?	5	CO2	KL2
5	Define group? why do people join group?	5	CO3	KL4
6	Explain the importance of organizational culture?	5	CO4	KL1
7	What are the main types of conflict that can occur in a work place?	5	CO3	KL4

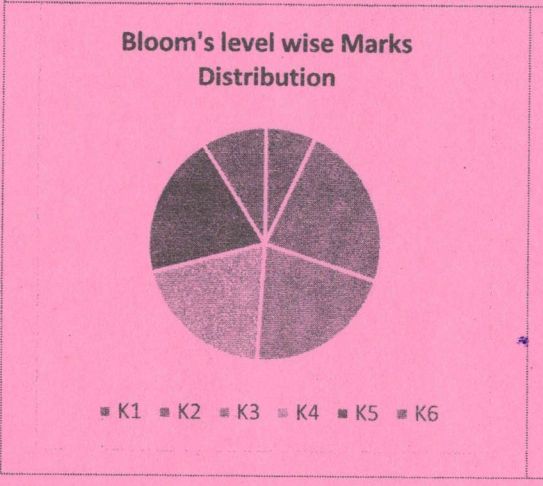
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

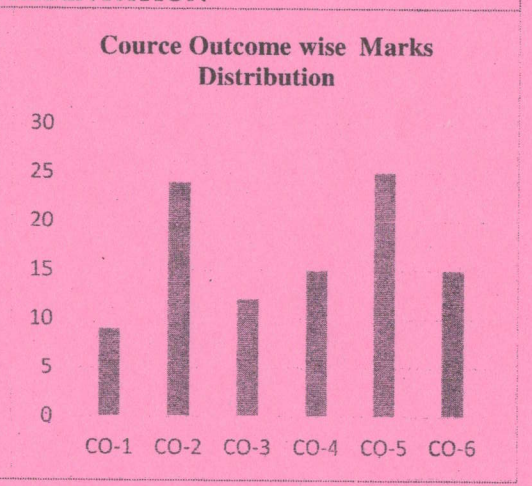
Q. No.	QUESTIONS	Marks	COs	KL
8	Short note : a) SWOT Analysis b) SMART GOALS	10	CO1	KL2
9	What do you meant by management of change? Give brief explanation on type of change?	10	CO3	KL1
10	Explain motivation? What is Herzberg's two factor theory? Give difference of Maslow and Herzberg's theory?	10	CO2	KL5
11	What is human resource management selection? What is the selection process? What is orientation training in human resource management?	10	CO5	KL6
12	What is a good appraisal? Explain Seven steps of commercial appraisal process? Difference between group and team?	10	CO6	KL3

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understand the dynamics of human behaviour in work context.
	CO2	Understand the determinants of work behaviour from different levels.
	CO3	Develop competencies of analyzing behavioral issues in the work environment
	CO4	Understand comfit of interest in industry effectiveness
	CO5	Expose students to key ideas and issues in OB that influence the way people behave in organizational setting
	CO6	Analysis the case study

GRAPHICAL REPRESENTATION





29/01/25

JGI ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY			END SEM EXAMINATION School of Engineering & IT
Branch	Computer Science Engineering	Program	B. Tech
Subject Name	Programing With Java (IBM)	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Three out of Five of Section C • Possession of Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Paper(s).		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	What is the importance of Byte code?	2	CO1	K2
ii	Compare Math.round() and Math.rint().	2	CO1	K1
iii	Write an applet code to show a string in red color.	2	CO4	K6
iv	How does java achieves Multiple inheritance?	2	CO3	K2
v	What are the two ways of creating a thread in java?	2	CO3	K1
vi	Create a sample structure of a parameterized constructor.	2	CO2	K6
vii	Create a snippet to show two instance variables of int and char type, and initialise them using a constructor.	2	CO1	K6
viii	Mention the use of super keyword.	2	CO3	K1
ix	Create a code to show explicit type casting.	2	CO1	K6
x	Create a java code to show any two inbuilt String functions.	2	CO2	K6

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	Cos	KL
2	How is error different from exception? Create a code to show a user defined exception.	5	CO3	K6
3	Illustrate the use of generic class in java with an example code.	5	CO4	K4
4	Explain the concept of compile time or run time polymorphism using a code.	5	CO2	K2
5	Compare function overloading and overriding.	5	CO1	K2
6	Create a code to count the number of words, whitespaces, and vowels in a string.	5	CO1	K6
7	What is a thread? Draw and explain the life cycle of a thread.	5	CO3	K3

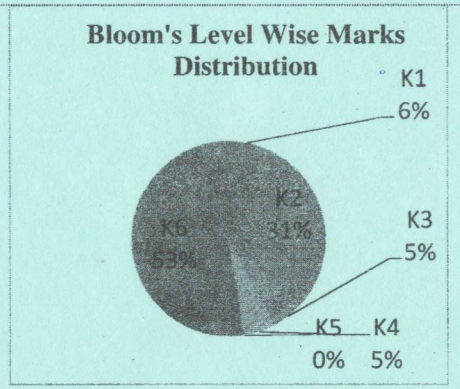
Section C (Answer any THREE out of FIVE) – 30 Marks-
(Each question Carry 10 Marks)

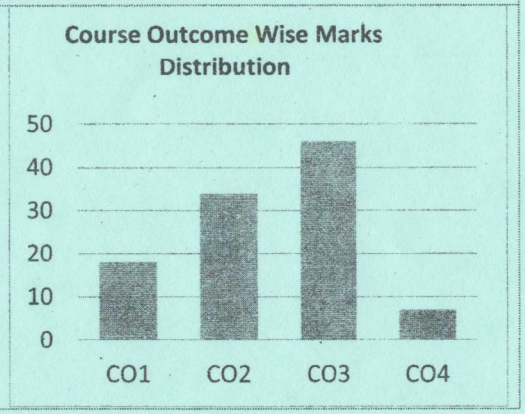
Q. No.	QUESTIONS	Marks	COs	KL
8	Differentiate between Abstract class and interface with proper example. Also, create a program to find the sum of all elements in an integer array using recursion.	10	CO3	K6
9	Define Daemon Threads? Explain with an example. Write a java program to implement join() method in multithreading.	10	CO3	K6
10	How is a constructor different from a normal function? Create a code to display constructor overloading.	10	CO2	K6
11	Mention the different types of inheritance available in java. Create a java code to show multilevel inheritance.	10	CO3	K2
12	Write short notes on any 4: Wrapper class, uncaught exception, final, static, abstract, throw, StringBuffer class.	10	CO2	K2

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Specify simple abstract data types and design implementations, using abstraction Functions to document them
	CO2	Recognize features of object-oriented design such as encapsulation, polymorphism,inheritance,andcompositionofsystemsbasedonobjectidentity
	CO3	Name and apply some common object-oriented design patterns and give Examples of their use.
	CO4	Design applications with an event-driven graphical user interface

GRAPHICAL REPRESENTATION

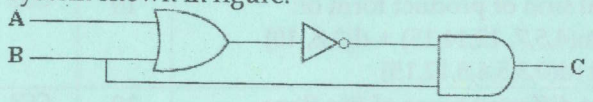




29/01/25

ARKA JAIN University, Jharkhand — NAAC GRADE A, ACCREDITED UNIVERSITY			END SEM EXAMINATION School of Engineering & IT
Branch	Computer Science Engineering	Program	B. Tech
Subject Name	Digital Electronics	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't Write on the 1st Page Backside** • **Answer all Questions of Section A (Compulsory)** • **Answer Any Four out of Six of Section B** • **Answer Any Three out of Five of Section C** • **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	Show how to connect NAND gates to get an AND gate and OR gate?	2	CO1	K1
ii	Convert the hexadecimal number 26A into a binary number.	2	CO1	K3
iii	Determine the Boolean expression for the output of the system shown in figure. 	2	CO1	K2
iv	List the classification of Sequential circuits.	2	CO2	K1
v	Find out the minimum number of flip-flops needed to build a modulus 10 synchronous counter?	2	CO2	K5
vi	Summarize the excitation table of T FF.	2	CO3	K2
vii	What are Analog to Digital converters?	2	CO5	K1
viii	What are Complex Programmable Logic Devices (CPLD).	2	CO4	K1
ix	Outline the applications of Multiplexer.	2	CO2	K2

x	Tabulate the differences between edge triggering and level triggering in sequential circuits.	2	CO4	K1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question Carry 05 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Write the minimized Boolean expression for the function using K-map and draw the logic diagram. F (w,x,y,z)= Σm(0,1,2,4,5,6,8,9,12,13,14)	05	CO2	K2
3	Define Analog to Digital Converters (ADCs). What are the different types of ADCs? Explain any one.	05	CO5	K4
4	Obtain the design of the given function using suitable multiplexer F= Σm(0,2,5,7).	05	CO2	K6
5	Sketch the logic diagram of 2 to 4 decoder. And explain how it can function as a 1x4 Demultiplexer.	05	CO1	K4
6	Design an 8:1 Multiplexer.	05	CO3	K2
7	Construct an Octal-to-Binary Encoder.	05	CO5	K2

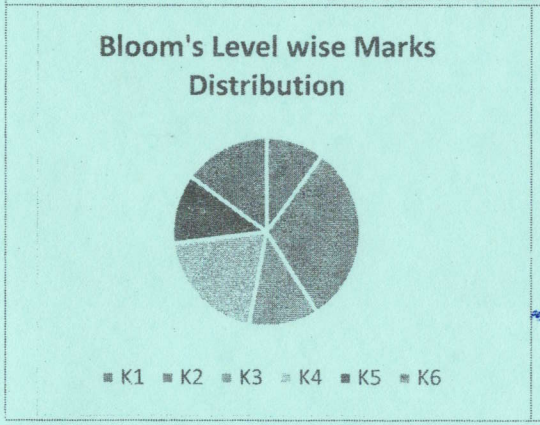
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

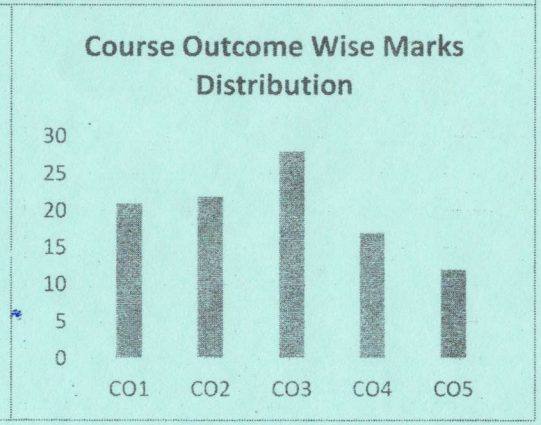
Q. No.	QUESTIONS	Marks	COs	KL
8	Construct a 4x16 decoder using 3x8 decoders.	10	CO2	K6
9	Determine the minimal sum of product form of: a) f(w,x,y,z)= Σm(4,5,7, 12,14,15) + d(3,8, 10) b) F(A,B,C,D)= π M(0,3,5,6,8,12,15)	10	CO2	K5
10	What is a flip flop? List different types of flip flops. Determine the characteristic table and excitation table for D Flip flop and T Flip Flop	10	CO3	K3
11	Design a mod-6 synchronous counter using JK flip flops.	10	CO3	K2
12	Compare Programmable Array Logic (PAL) and Programmable logic array (PLA).	10	CO4	K4

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Students will be able to Understand working of logic families and logic gates.
	CO2	Students will be able to Design and implement Combinational logic circuits
	CO3	Students will be able to Design and implement Sequential logic circuits
	CO4	Students will be able to use PLDs to implement the given logical problem.
	CO5	Students will be able to Understand the process of Analog to Digital conversion and Digital to Analog conversion

GRAPHICAL REPRESENTATION





31/01/25

ARKA JAIN University, Jharkhand (NAAC GRADE A, ACCREDITED UNIVERSITY)		END SEM EXAMINATION School of Engineering & IT	
Branch	Computer Science Engineering	Program	B. Tech
Subject Name	Python Programing	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; don't Write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • Answer Any Four out of Six of Section B • Answer Any Three out of Five of Section C • Possession of Mobile Phone or any kind of Written Material, Arguments with the Invigilator or Discussion with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Paper(s).		
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	How is python different from any other OOP based language?	2	CO1	K2
ii	'Python is an interpreter based language.' Give two benefits of it.	2	CO1	K1
iii	List the mutable data types and immutable data types.	2	CO2	K1
iv	Which functions are used for reading and writing csv file?	2	CO3	K2
v	List any 4 standard data types in python.	2	CO2	K1
vi	What is the difference between dynamic and strongly typed language?	2	CO2	K2
vii	Create a program to show the use of string slicing.	2	CO2	K6
viii	What is the difference between modify and copy operations performed in dictionary?	2	CO1	K1
ix	What are the different categories of a file?	2	CO1	K6
x	Create a function to check whether a given number is prime number or not.	2	CO2	K6

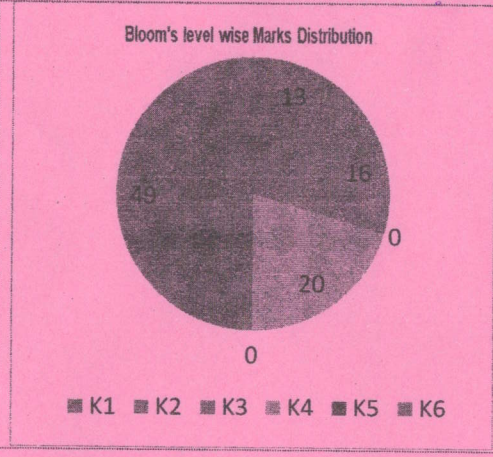
Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	QUESTIONS	Marks	Cos	KL
2	How is error different from exception? Create a code to show a user defined exception in python.	5	CO3	K6
3	List out main differences between lists and tuples with proper example.	5	CO2	K2
4	Explain the concept of compile time or run time polymorphism using a code.	5	CO2	K2
5	What is a nested dictionary? Create a nested dictionary to represent a book collection, where each book has a title, author, and publication year. Write a code snippet to iterate over the collection and print each book's details.	5	CO2	K6
6	Using python code, differentiate between r+ and w+ file modes.	5	CO4	K1
7	Write a Python function to calculate the area of a circle using class Circle.	5	CO5	K6

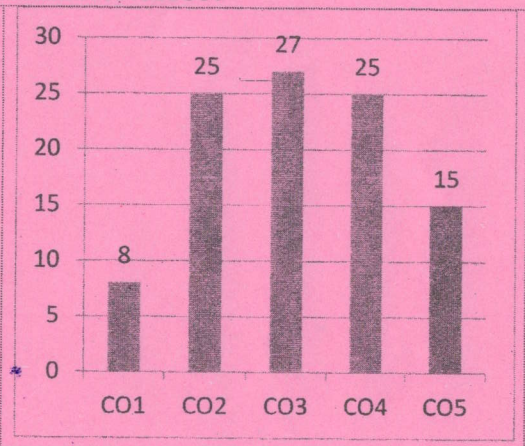
Section C (Answer any THREE out of FIVE) – 30 Marks- (Each question Carry 10 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
8	Explain with suitable examples different types of inheritance supported by Python.	10	CO3	K4
9	What is the difference between lists, tuples and dictionaries? Create a program to demonstrate the use of *args and **kwargs.	10	CO3	K6
10	Create a Python program that validates IPv4 addresses using regular expression module.	10	CO4	K6
11	What is a CSV? Describe how to write data to a file in Python. Write a code example that creates a new file and writes a list of strings to it, each on a new line.	10	CO4	K4
12	Create a Python program to create a base class called Shape with methods to calculate the area and perimeter. Derive two classes, Rectangle and Circle, from the Shape class. Implement the necessary methods in each derived class and demonstrate their use.	10	CO5	K6

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	To interpret the fundamental python syntax and semantics and be fluent in the use of python control flow statements.
	CO2	To express proficiency in handling of strings and functions
	CO3	Determine the methods to create and manipulate python programs by utilising the data structures
	CO4	Design and identify the commonly used operations involving file systems and regular expressions
	CO5	To articulate the Object Oriented Programming concepts such as encapsulation, inheritance, and polymorphism as used in python

GRAPHICAL REPRESENTATION





31/01/25

JGI ARKA JAIN University Jharkhand — NAAC GRADE A ACCREDITED UNIVERSITY		**END SEM EXAMINATION** School of Engineering & IT	
Branch	Computer Science & Engineering (IBM)	Program	B.Tech
Subject Name	Cloud Fundamentals (IBM)	Semester	III
		Year	January, 2025
Time: 3 Hour Max. Marks : 70	• Start writing from 2nd page onwards; **don't Write on the 1st Page Backside** • **Answer all Questions of Section A (Compulsory)** • **Answer Any Four out of Six of Section B** • **Answer Any Three out of Five of Section C** • **Possession of Mobile Phone** or any kind of **Written Material, Arguments with the Invigilator or Discussion with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Paper(s)**.		
Knowledge Level (KL)	**K1** : Remembering	**K3** : Applying	**K5** : Evaluating
	K2 : Understanding	**K4** : Analysing	**K6** : Creating

Section A (Each question Carry 02 Marks from Q1-i to x – 20 Marks)

Q. N 1	QUESTIONS	Marks	COs	KL
i	List the services offered by IBM Cloud in catalog.	2	CO1	K1
ii	Outline the working of resource controller.	2	CO2	K2
iii	Define Source control management (Git repository).	2	CO4	K1
iv	Compare block storage and object storage in the cloud.	2	CO3	K2
v	Why is cloud computing important for business?	2	CO1	K1
vi	Recall the key value pair data type used in data services.	2	CO3	K1
vii	Identify the use of On-demand resources and Ubiquitous access in cloud computing.	2	CO1	K3
viii	Examine deployment strategies of A/B testing.	2	CO4	K4
ix	Interpret RESTful web service.	2	CO3	K2
x	Explain the concept of IBM Cloud.	2	CO2	K5

Section B (Answer any FOUR out of SIX) – 20 Marks (Each question Carry 05 Marks)				
Q. No.	QUESTIONS	Marks	Cos	KL
2	Contrast the IBM Cloud dashboard, catalog, and documentation features to manage and deploy cloud resources.	05	CO2	K4
3	Discuss the role of IBM Cloud Continuous Delivery in the DevOps process.	05	CO4	K6
4	Model the working of workload in cloud with its types.	05	CO3	K3
5	Evaluate the functioning of cryptography in cloud.	05	CO3	K5
6	Conclude an IBM Watson service and discuss its capabilities and applications in IBM Cloud.	05	CO4	K5
7	Develop a models code to read a file using file system module.	05	CO4	K6
Section C (Answer any THREE out of FIVE) – 30 Marks (Each question Carry 10 Marks)				
Q. No.	QUESTIONS	Marks	Cos	KL
8	Elaborate the key differences between public, private, and hybrid cloud deployment options with suitable example.	10	CO1	K6
9	Interpret the twelve-factor app methodology in cloud computing.	10	CO2	K5
10	Discover one case while identifying the stage of IBM Cloud Garage Method with Diagram.	10	CO4	K4
11	Demonstrate how to access and manipulate data in Cloudant databases using HTTP APIs.	10	CO3	K3
12	Make use of all the threats in cloud security and how do they differ from one another?	10	CO2	K3

CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Understanding of cloud computing fundamentals and IBM Cloud infrastructure essentials.
	CO2	Acquire practical expertise in navigating IBM Cloud services, including their functionalities and application in real-world scenarios.
	CO3	Develop proficiency in designing and implementing cloud architectures, ensuring robust security and effective data management on IBM Cloud.
	CO4	Deployment of applications using IBM Cloud DevOps practices, optimizing efficiency and reliability.

GRAPHICAL REPRESENTATION