



ARKA JAIN
University
Jharkhand



END SEM EXAMINATION
School of Engineering & IT

Branch	ME, CSE, EEE	Program	B. Tech
Subject Name	Engineering Mathematics-II	Semester	II
		Year	June 2024
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> 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 come under Unfair Means and will Result in the Cancellation of the Paper(s). 		
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing	K5 : Evaluating K6 : Creating

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

Q. No. 1	QUESTIONS	Marks	COs	KL
i	What do mean by double integration.	2	CO2	K2
ii	Evaluate $\int_0^1 \int_0^{1-x} dx dy$	2	CO5	K5
iii	Write the standard form of the Cauchy's homogeneous linear equation.	2	CO3	K1
iv	Define Green's theorem.	2	CO3	K1
v	Solve $yp^2+(x-y)p-x=0$.	2	CO6	K3
vi	Find the general solution of $\sin(px-y) = p$.	2	CO4	K4
vii	Solve (D3-6D2+11D-6) y=0.	2	CO2	K5
viii	Check whether $f(Z)=\bar{Z}$ is analytic or not.	2	CO6	K3
ix	Write polar form of the C-R equation.	2	CO3	K1
x	Find Residue at its pole If $F(z) = \frac{z^2+2}{z+3}$.	2	CO4	K4

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

Q. No.	QUESTIONS	Marks	COs	KL
2	Evaluate $\iint xy dx dy$ over the positive Quadrant of the circle $x^2+y^2=a^2$.	05	CO1	K5
3	Solve $x-yp = ap^2$.	05	CO2	K2
4	Solve by power series $\frac{dy}{dx}-y+x=0$.	05	CO6	K3
5	Find the bilinear Transformation which Maps the points $Z_1=2, Z_2=i, Z_3=-2$ into the Points $W_1=1, W_2=i$ and $W_3=-1$. respectively.	05	CO2	K2
6	Evaluate $\int \frac{\cos 2\pi z}{(2z-1)(z-3)} dz, C: Z =1$.	05	CO5	K5
7	Find the Value of $\int_0^{1+i} (x^2 + iy) dz$ along the path $y=x$.	05	CO4	K4

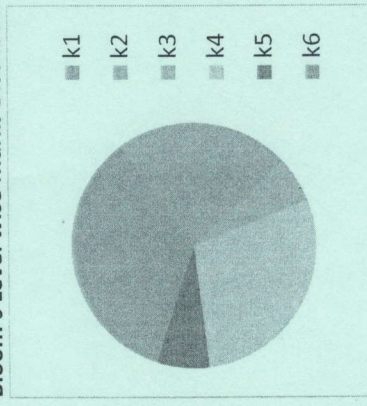
Section C (Answer any THREE out of FIVE) – 30 Marks
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Evaluate $\iint xy(x+y) dx dy$ over the area between the curves $y=x^2$ and $y=x$	10	CO1	K6
9	Find the general and singular solution of $y=px-\sqrt{1+p^2}$.	10	CO4	K4
10	Solve by variation of parameter $\frac{d^2y}{dx^2}+a^2y=\sec ax$.	10	CO2	K2
11	Let a Rectangular domain bounded by $x=0, y=0, x=1, y=2$. Determine the region R' of W plane into Which R mapped under the Transformation $W=Z+(2-i)$.	10	CO6	K6
12	Expand the series $F(z)=\frac{1}{z^2-3z+2}$ in the region (i) $0 < z < 1$ (ii) $1 < z < 2$.	10	CO4	K4

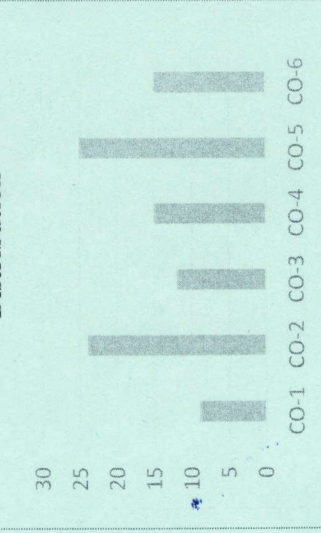
CO1	The mathematical tools needed in evaluating multiple integrals and their usage.
CO2	Understand the effective mathematical tools for the solution of differential equations that model physical process.
CO3	Demonstrate the tools of differentiation and integration of functions of a complex variable that are used in various techniques dealing engineering problems.
CO4	Calculate the analytic function.
CO5	Evaluate complex integrals by using Cauchy integral theorem.
CO6	An ability to apply effective, creative and innovative solution both independently and cooperatively, to current and future problems.

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution





ARKA JAIN
University
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END TERM EXAMINATION
School of Engineering & IT

Branch	EEE/ ME	Program	B. Tech
Subject Name	Programming for Problem Solving	Semester	II
		Year	June 2024
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> 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 <u>Mobile Phones</u> or any kind of <u>Written Material, Arguments with the Invigilator or Discussing with Co-Student</u> will come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Papers.</u> 		
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 down the full form of POP, OOP, GUI, CUI.	2	CO2	K1
ii	Write a c program to show infinite loop.	2	CO1	K2
iii	Mention any two rules for naming a variable.	2	CO1	K4
iv	What is an operator? Mention any two binary operators.	2	CO2	K1
v	Name any one primary and one secondary data type in C.	2	CO1	K4
vi	Write down the syntax of Struct data type with example.	2	CO2	K1
vii	Write a code snippet to display the use of ternary operator.	2	CO1	K1
viii	What are the symbols used in a flowchart?	2	CO3	K4
ix	What is a pointer?	2	CO4	K1
x	What is the use of puts () and gets ()?	2	CO4	K2

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

Q. No.	QUESTIONS	Marks	COs	KL
2	Write a program to show the factorial of a positive integer using for.	5	CO1	K2
3	Differentiate between while and do-while loop with example of each.	5	CO5	K3
4	Write a program to check if a given year is a leap year or not.	5	CO3	K1
5	What is an Array? Give its advantages and disadvantages.	5	CO4	K2
6	Write a program to swap two numbers without using third variable. Also provide the variable description.	5	CO4	K2
7	Define function? Write down the structure of a user defined function with an example.	5	CO2	K2

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

Q. No.	QUESTIONS	Marks	COs	KL
8	What is data type? Write a program to find smallest value in an array.	10	CO5	K2
9	Compare static and extern storage classes. Also give any two applications of Union.	10	CO4	K3
10	What is an array? Show its syntax/structure. Write a program to display the sum of all the even numbers from 20 to 100.	10	CO3	K3
11	Compare algorithm and flowchart. Write a program to find largest and 2nd largest element in an array.	10	CO5	K5
12	What is Recursion? Write a program to calculate the factorial of a number using recursion. Also provide the variable description.	10	CO5	K5

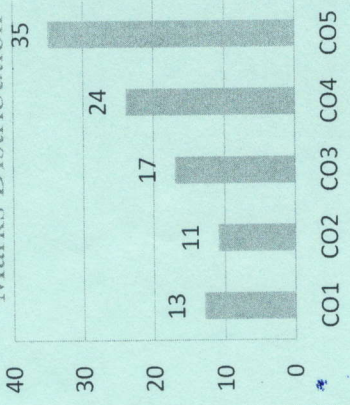
Course Outcomes	CO1	CO2	CO3	CO4	CO5
	Formulate simple algorithms for arithmetic and logical problems.	Test and execute the programs and correct syntax and logical errors.	Implement conditional branching, iteration and recursion.	Decompose a problem into functions and synthesize a complete program using divide and conquer approach.	To use arrays, pointers and structures to formulate algorithms and programs

GRAPHICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Course Outcome wise Marks Distribution



ARKA JAIN University
Jharkhand

NAAC GRADE A
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END SEM EXAMINATION
School of Engineering & IT

Branch	ME & EEE	Program	B. Tech
Subject Name	English for Communication	Semester	II
		Year	June 2024
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> 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 come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Paper(s)</u>. 		
Knowledge Level (KL)	K1 : Remembering K2 : Understanding	K3 : Applying K4 : Analysing	K5 : Evaluating K6 : Creating

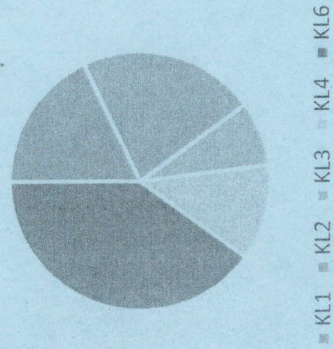
Section A (Each question Carry 02 Marks from Q1-i to x - 20 Marks)			
Q.N	QUESTIONS	Marks	KL
1			
i	What is Technical Report Writing?	2	KL1
ii	Define the term Newsletter.	2	KL2
iii	Write one sentence on each of the mentioned Prepositions: below and under.	2	KL4
iv	What are Articles in English grammar? Name its types.	2	KL3
v	Define misplaced modifiers.	2	KL1
vi	Identify the redundant words & write the correct sentences: I make recording so that I can repeat the lecture again.	2	KL1
vii	Identify the misplaced modifiers & write the correct sentences: I heard that there was a robbery on the evening news.	2	KL3
viii	Write the correct abbreviation of : Please respond (repondez s'il vous plait in French).	2	KL3
ix	What is the antonym & synonym of the word: benevolent.	2	KL1
x	What does the term BCC stand for in Email Writing?	2	KL3

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

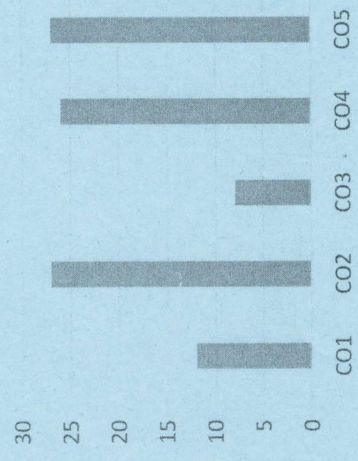
CO1	Understand the basic of the communication and represent communication process and to know the practical implementations in the workplace.
CO2	Understand verbal and non-verbal modes of communication effectively in practical situations.
CO3	Analyse vocalic and basic grammar.
CO4	Create competence in reading and writing.
CO5	Evaluate speaking process

GRAFICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Course Outcome Wise Marks Distribution






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

Sl. No.	QUESTIONS	Marks	COs	KL
2	Explain all the 4 temperaments of Personality in brief.	05	CO2	KL4
3	What are the key elements of Precise Writing?	05	CO5	KL2
4	What is Self-Esteem? What are the signs of high self-esteem?	05	CO1	KL2
5	What are the three determinants of Personality?	05	CO2	KL2
6	Give 4 benefits of Time Management.	05	CO1	KL2
7	Write the format of Email Writing.	05	CO2	KL4

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

Sl. No.	QUESTIONS	Marks	COs	KL
8	Write an event report on An Industrial visit to TATA MOTORS.	10	CO2	KL6
9	Write a paragraph on: Swachh Bharat Abhiyan.(200 words)	10	CO4	KL6
10	Describe the infrastructure of the ancient architecture of India : Mahabalipuram Temple & Ellora Caves.	10	CO5	KL1
11	Define the term Interview. Explain briefly any 8 types.	10	CO4	KL6
12	Write a letter to the Municipal Corporation regarding the infrequent waste collection in your locality.	10	CO5	KL6

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			END SEM EXAMINATION School of Engineering & IT	
			Branch	Program
EEE & ME	Constitution of India	B.Tech	Semester II	Year June 2024
Subject Name	• 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 Two out of Four of Section C • Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under <u>Unfair Means</u> and will <u>Result</u> in the <u>Cancellation of the Papers</u> .			
Time: 1.5 Hour Max. Marks : 35				

Section A (Each question Carry 01 Mark from Q1-i to v) - 05 Marks				
Q. N1	QUESTIONS	Marks	COs	KL
i	Who was the chairman of the drafting committee of the Indian Constitution?	01	CO1	K1
ii	What is the significance of Fundamental Rights in the Indian Constitution?	01	CO2	K1
iii	Name any three fundamental rights guaranteed by the Indian Constitution.	01	CO4	K1
iv	Name any three Directive Principles of State Policy mentioned in the Constitution.	01	CO3	K1
v	What are the fundamental duties of Indian citizens as per the Constitution?	01	CO5	K1

Section B (Answer any FIVE out of SIX) - 10 Marks (Each question Carry 02 Marks)				
Q. No.	QUESTIONS	Marks	COs	KL
2	Explain the privileges and immunities of Parliament and its members	02	CO1	K2
3	Explain the privileges and immunities, Functions and Power of the Governor.	02	CO2	K2
4	Describe the Role and Functioning of Chief Election Commissioner	02	CO4	K3
5	Describe the structure of the state government	02	CO3	K4
6	Describe the federal structure of the Indian Union and the distribution of powers between the central government and the state governments.	02	CO5	K3

Q. No.	How are representatives to the Rajya Sabha and Lok Sabha elected?	02	CO4	K4
Section C (Answer any FOUR out of FIVE) – 20Marks (Each question Carry 05 Marks)				
QUESTIONS				
8	What are the roles and responsibilities of a chief minister in a state government?	05	CO4	K4
9	What are the constitutional powers and functions of a governor in a state?	05	CO3	K4
10	Brief about the Role and responsibilities of the Prime Minister of India.	05	CO4	K4
11	What is the state secretariat, and what functions does it perform in the state government? Discuss the role of the state secretariat in policy formulation and implementation.	05	CO5	K5

CO1	Understand the emergence and evolution of Indian Constitution.		
CO2	Understand and analyse federalism in the Indian context.		
CO3	Features of Indian Constitution.		
CO4	Understand the structure of Indian Union.		
CO5	Election Commission and Local administration.		
Course Outcomes Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

Bloom's Level wise Marks Distribution		Course Outcome Wise Marks Distribution	
		1.5	
		1	
		0.5	
		0	

GRAFICAL REPRESENTATION

M 20/06/24 60



ARKA JAIN University
Jharkhand



END SEM EXAMINATION
School of Engineering & IT

Branch	EEE & ME	Program	B. Tech
Subject Name	Engineering Physics	Semester	II
		Year	June 2024
Time: 3 Hour Max. Marks : 70	<ul style="list-style-type: none"> 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 come under <u>Unfair Means</u> and will <u>Result in the Cancellation of the Paper(s)</u>. 		
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	Illustrate wave -particle duality.	2	CO1	K1
ii	What are the factors that affect photoelectric effect?	2	CO1	K1
iii	Compare Intrinsic Semiconductor with Extrinsic Semiconductor?	2	CO2	K2
iv	Compute direct band gap?	2	CO2	K2
v	Define de -Broglie hypothesis?	2	CO3	K3
vi	Write Four Maxwell's equation?	2	CO3	K1
vii	Write Difference constructive interference and destructive interference	2	CO4	K2
viii	Give two types of pumping mechanisms in LASER.	2	CO4	K3
ix	State Faraday's Law of electromagnetic induction.	2	CO5	K2
x	What do you understand by electric field and electric potential	2	CO5	K3

Section B (Answer any FOUR out of SIX) – 20 Marks

(Each question Carry 05 Marks)

No.	QUESTIONS	Marks	COs	KL
	Explain de-Broglie hypothesis? Find Wavelength of electron in term of Kinetic Energy .	05	CO1	K2
	Calculate the de Broglie wavelength for (a) a proton of kinetic energy 70 MeV kinetic energy and (b) a 100 g bullet moving at 900 m s ⁻¹ .	05	CO2	K4
	Write the significance of Fermi energy level. Mention its position in intrinsic and extrinsic semiconductors at 0 K?	05	CO2	K3
	Derive the differential equation for SHM from Displacement?	05	CO2	K5
	Give the description of He-Ne laser and explain the construction and working of it.	05	CO4	K2
	The uncertainty in the momentum Δp of a ball travelling at 30 m/s is 1.5×10^{-6} of its momentum. Calculate the uncertainty in position Δx ? Mass of the ball is given as 0.8 kg.	05	CO5	K3

Section C (Answer any THREE out of FIVE) – 30 Marks-

(Each question Carry 10 Marks)

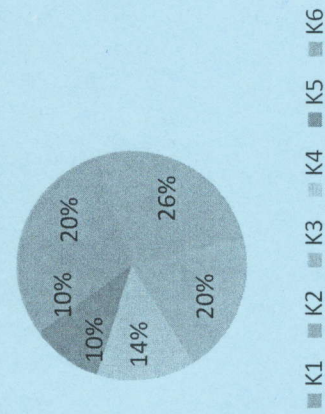
No.	QUESTIONS	Marks	COs	KL
1	Explain Tunnelling? Calculate the transmission coefficient of a rectangular potential barrier.	10	CO1	K3
2	When two ultraviolet beams of wavelengths $\lambda_1 = 80$ nm and $\lambda_2 = 110$ nm fall on a lead surface, they produce photoelectrons with maximum energies 11.390 eV and 7.154 eV, respectively. i. Estimate the numerical value of the Planck constant. ii. Calculate the work function, the cut-off frequency, and the cut-off wavelength of lead	10	CO1	K5
3	Derive the differential equation for the damped natural oscillation of a particle?	10	CO3	K6
4	In Newton's ring experiment, the diameter of the 10 th dark ring is 0.433 cm. Find the wavelength of incident light, if the radius of curvature of the lens is 70 cm.	10	CO4	K4
5	Write Four Maxwell's equation. Explain Their Physical Significance?	10	CO5	K3

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

Course Outcomes	CO1	CO2	CO3	CO4	CO5
Identify and understand the kinds of experimental results which are incompatible with classical Physics leading to the development of a quantum theory of matter and light					
Use basic concepts to analyze and design a wide range of semiconductor devices					
Understand & solve different types of wave equations					
Use the principles of optics to solve various complex engineering problems					
Use fundamental laws and relations to solve problems in electricity, electromagnetism					

GRAFICAL REPRESENTATION

Bloom's Level Wise Marks Distribution



Course Outcome Wise Marks Distribution

