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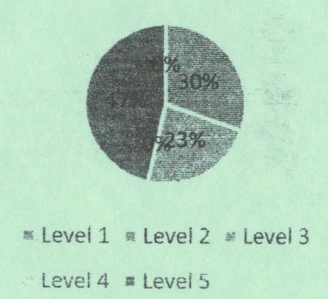
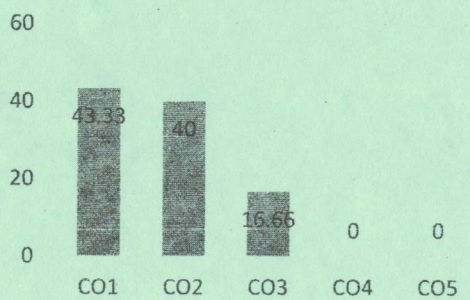
CO- Course Outcomes, KL- Knowledge Level, PO – Program Outcome

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.

GRAFICAL REPRESENTATION





JGI ARKAJAIN University Jharkhand			END TERM EXAMINATION School of Engineering & IT	
Branch	ME /CSE /EEE /CL		Program	B.Tech
Subject Name	Engineering Mathematics-II		Semester	II
			Year	2023/ Even
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 Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will comes under Unfair Means and will Result in the Cancellation of the Papers.			
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 Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Evaluate $\int_2^4 \int_0^x \int_0^{x+y} zdzdydx.$	2	CO1	K1	PO2
ii	Write Standard form of Clairauts equation.	2	CO2	K1	PO2
iii	Change the order of integration $\int_0^\infty \int_0^x xe^{\frac{-x^2}{4}} dxdy$	2	CO1	K2	PO1
iv	Solve $\frac{d^2x}{dt^2}+2\frac{dx}{dt}=0$	2	CO2	K2	PO2
v	Define Harmonic Function Function.	2	CO2	K2	PO2
vi	Find out The locus of the point satisfying the condition $\|Z-1\| \leq 4$.	2	CO1	K1	PO1
vii	In 2nd order linear differential equation with variable coefficient If 1-P+Q=0 what will be the known integral.	2	CO3	K5	PO2
viii	Solve sin y cospx - cosy sin px –p=0	2	CO1	K1	PO2
ix	Find the integration of $\int_0^1 \int_0^2 (x^2 + 3xy^2)\, dxdy.$	2	CO1	K2	PO1
x	Write down the Cartesian form of the Cauchy Riemann-equation.	2	CO3	K2	PO1

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Show that an analytic function with constant modulus is constant.	5	CO2	K5	PO2
3	Evaluate $\iint r^3 dr d\theta$ over the area bounded between the circles r=2cosθ *and* $r = 4cos\theta$.	5	CO2	K5	PO3
4	Evaluate of $\int_c \vec{F}.d\vec{r}$ where $\vec{F}$=x2y2$\hat{\imath} + y\hat{\jmath}$ and the curve C is y2=4x in the XY plane from (0,0) to (4,4.)	5	CO2	K3	PO2
5	Find the mass of an elliptic plate $\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1$. If the density at point (x,y) on it is μxy.	5	CO1	K3	PO1
6	Solve $(D^3-D)y=2x+1+4\cos x+2ex$	5	CO1	K4	PO2
7	*Solve* $\frac{dy}{dx} + e^{3x-2y} = x^2e^{-2y}$	5	CO1	K2	PO1

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Solve by power series $(1-x^2)\frac{d^2y}{dx^2} - x\frac{dy}{dx} + 4y = 0$.	10	CO1	K4	PO4
9	Evaluate $\iint_G \sqrt{x^2+y^2}\,dx\,dy$ Where G={(x,y)$\in$ $R^2, x \le x^2 + y^2 \le 2x$}.	10	CO1	K5	PO1
10	Using Cauchy's Residue theorem evaluate the integral along the given Curve $\int_C \frac{z^2}{(z-1)^2(z-2)}dz$ Where C|Z|$\le$ 2.5	10	CO1	K5	PO2
11	Solve $x^2\frac{d^2y}{dx^2} - (x^2+2x)\frac{dy}{dx} + (x+2)y = x^3e^x$ by one known Integral Method.	10	CO3	K3	PO2
12	verify the stoke's theorem Evaluate for F= $(x^2 + y^2)\hat{\imath}$ -2xy$\hat{\jmath}$ taken around the rectangle bounded by the the lines x=$\pm$ a,y=0,y=b.	10	CO2	K5	PO1

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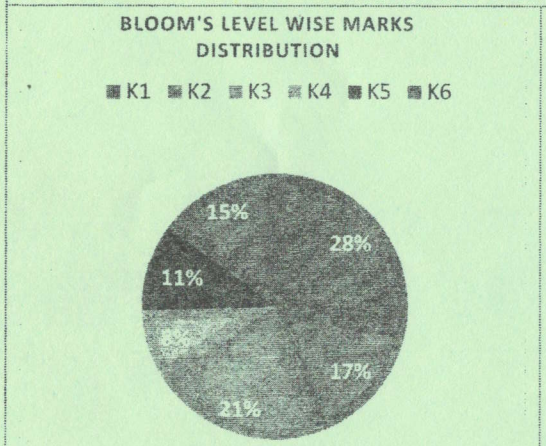
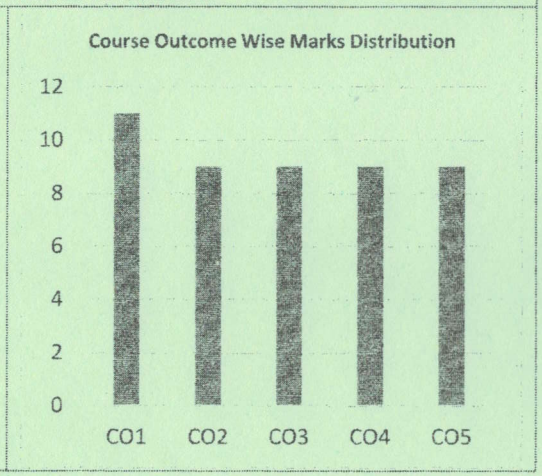
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	Describe historical background of the constitution making and its importance for building a democratic India
	CO2	Explain the functioning of three wings of the government i.e., executive, legislative and judiciary
	CO3	Explain the value of the fundamental rights and duties for becoming good citizen of India
	CO4	Analyze the decentralization of power between central, state and local self-government
	CO5	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.

GRAFICAL REPRESENTATION





ARKAJAIN University Jharkhand

END TERM EXAMINATION
School of Engineering & IT

Branch	CSE /ME /EEE /CL	Program	B.Tech
Subject Name	Constitution of India	Semester	II
		Year	2023/ Even

Time: 1.5 Hour
Max. Marks : 35

- 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 Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers.**

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

Section A (Each question Carry 01 Marks from Q1-i to Q1-x) – 10 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	What is a constitution?	1	CO1	K1	PO2
ii	When was Objective Resolution moved and by whom?	1	CO1	K2	PO1
iii	Who chairs Rajya Sabha?	1	CO2	K1	PO2
iv	What is the aim of PIL?	1	CO2	K2	PO3
v	What do you mean by Acts of parliament?	1	CO3	K3	PO1
vi	What is the need of Tribunal?	1	CO3	K1	PO2
vii	What is patent?	1	CO4	K3	PO2
viii	What is copyright infringement?	1	CO4	K1	PO3
ix	What are the advantages of partnership?	1	CO5	K2	PO2
x	What is Companies Act, 2013?	1	CO5	K3	PO1

Section B (Answer any FIVE out of SIX) – 10 Marks
(Each question 2 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Why are they called Fundamental Rights?	2	CO1	K4	PO2
3	What is a Preamble?	2	CO1	K3	PO3
4	What are the powers of Indian Parliament?	2	CO2	K6	PO1
5	Describe the powers and function of the Prime minister of India.	2	CO3	K1	PO3
6	Describes rights and duties of arbitrators.	2	CO4	K1	PO1
7	What is Intellectual Property & Intellectual Property rights?	2	CO5	K4	PO2

Section C (Answer any THREE out of FIVE) – 15 Marks-
(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	What is Article 368? Describe the procedure of amendments of the constitution of Indian under Article 368.	5	CO1	K5	PO1
9	What are the Executives, Legislatives, Judicial & Financials powers of the Governors?	5	CO2	K6	PO3
10	What is the general court structure and hierarchy in India?	5	CO3	K2	PO2
11	Explain right to Information (RTI) Act,2005. What type of information can be requested through RTI?	5	CO4	K3	PO2
12	Explain the uses of technology in judicial process and role of IT professionals in Judiciary.	5	CO5	K1	PO1

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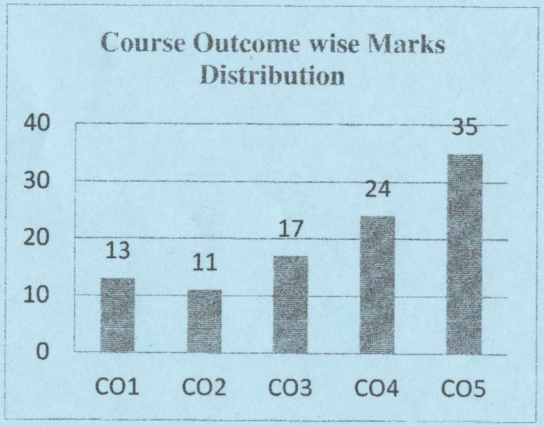
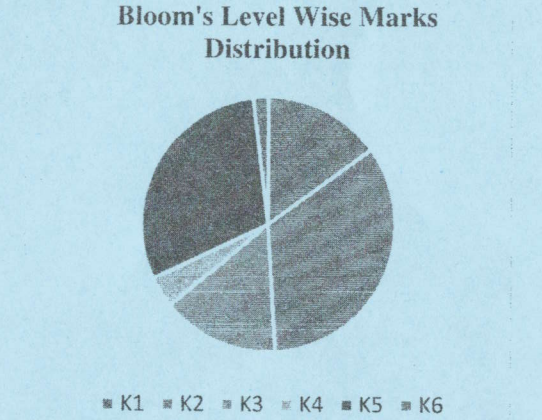
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

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





ARKAJAIN University
Jharkhand

END TERM EXAMINATION
School of Engineering & IT

Branch	CSE/ EEE/	**Program**	B.Tech
Subject Name	Programming for Problem Solving	**Semester**	II
		Year	2023/Even

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 Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means** and will **Result** in the **Cancellation of the Papers**.

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 Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	With reference to memory unit, what is SSD?	2	CO2	K1	PO2
ii	Create a flowchart to check a number is even or odd.	2	CO1	K2	PO3
iii	What is a recursive function?	2	CO1	K4	PO4
iv	Name any two primary and secondary data type in C.	2	CO2	K1	PO2
v	Write down the syntax of if else-if, and nested if.	2	CO1	K4	PO1
vi	What are the rules for naming a variable?	2	CO2	K1	PO3
vii	What is the significance of the term void main()?	2	CO1	K1	PO2
viii	Compare gets() and puts().	2	CO3	K4	PO2
ix	Write down the syntax of struct data type.	2	CO4	K1	PO1
x	Explain the use of strcpy() and strcat().	2	CO4	K2	PO4

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Write a program to print Fibonacci series upto 8th term using recursion.	5	CO1	K2	PO2
3	Write a program to find largest and 2nd largest element in an array.	5	CO5	K3	PO1
4	Explain the difference between fscanf() and fprintf() with an example.	5	CO3	K1	PO3
5	What is conditional compilation? Explain how can the size of a structure be defined?	5	CO4	K2	PO2
6	Compare static and extern storage classes. Also give any 2 applications of Union.	5	CO4	K2	PO4
7	Write a program to swap two numbers using call by value method.	5	CO2	K2	PO1

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	What is an Array? Give its advantage and disadvantage. Write a program to perform Linear search.	10	CO5	K2	PO1
9	Explain the dynamic memory management functions with examples.	10	CO4	K3	PO2
10	What is dangling memory problem? How to solve it? Write a program to show the use of switch statement.	10	CO3	K3	PO3
11	What is a pointer? Write a program to swap two numbers using pointer.	10	CO5	K5	PO1
12	Write a program to perform matrix addition on two 3x3 matrices.	10	CO5	K5	PO4

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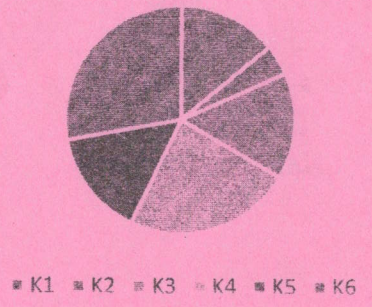
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

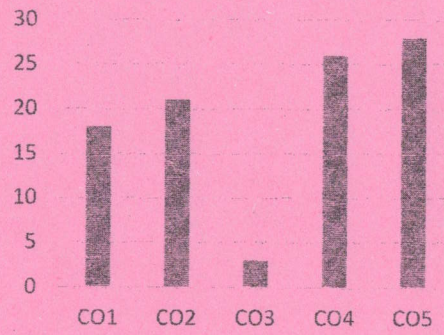
Course Outcomes	CO1	Remembering the basic of the communication process and to know the practical implementations in the work place.
	CO2	Understanding verbal and non-verbal modes of communication effectively in practical situations
	CO3	Analysing vocalises and basic grammar.
	CO4	Creating competence in reading and writing
	CO5	Evaluation of speaking process.

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



12/7/23 185

ARKAJAIN University Jharkhand

END TERM EXAMINATION
School of Engineering & IT

Branch	ME /CSE /EEE /CL	Program	B. Tech
Subject Name	English for Communication	Semester	II
		Year	2023/ EVEN

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 Phones** or any kind of **Written Material, Arguments with the Invigilator or Discussing with Co-Student** will comes under **Unfair Means**and will **Result** in the **Cancellation of the Papers**.

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 Q1-x) – 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	Define Lexical Words.	2	CO1	K1	PO2
ii	What is a Newsletter?	2	CO1	K2	PO1
iii	Write the antonym of words: busy and cease.	2	CO2	K1	PO3
iv	Fill in the correct prepositions: He climbed .....the ladder to get ..... the roof.	2	CO1	K1	PO1
v	Remove the redundant word in the sentence: He ordered for a cup of tea.	2	CO4	K1	PO1
vi	Remove the redundant word in the sentence: as the road traffic increases, elevated highways are built to solve the problem of traffic jam.	2	CO6	K3	PO4
vii	Define Misplaced Modifiers.	2	CO5	K2	PO6
viii	The teacher served cookies to the children wrapped in aluminium foil. Identify misplaced modifier & rewrite the sentence.	2	CO2	K4	PO7
ix	What do you mean by self – assessment?	2	CO3	K3	PO3

x	Give one difference between Sanguine and Melancholic Personality temperament.	2	CO6	K3	PO5

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	TAQUESTIONS	Marks	COs	KL	PO
2	What is the purpose of writing a Newsletter?	5	CO6	K3	PO2
3	Name the types of Pronoun and give atleast one example of each.	5	CO4	K5	PO5
4	How many types of self – assessment are there? Name them.	5	CO3	K2	PO4
5	Define Personality Development. Name its four types of temperament theory.	5	CO3	K3	PO6
6	Describe the architecture of Mahabalipuram Temple.	5	CO2	K6	PO7
7	What is public speaking? Explain the skills of public speaking.	5	CO4	K6	PO9

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Write the summary of Ancient Architecture in India.	10	CO1	K1	PO3
9	Write your views on the Group Discussion topic: Measures to stop Food Wastage.	10	CO5	K3	PO3
10	What is Self – Esteem? Give four signs of low and high Self – Esteem.	10	CO2	K3	PO7
11	Make an event report on a Sports Day held at your college.	10	CO2	K3	PO8
12	You are Mr. Yash Gupta. Write a letter to the National Electronics Shop to purchase six air conditioners for your office.	10	CO4	K4	PO9

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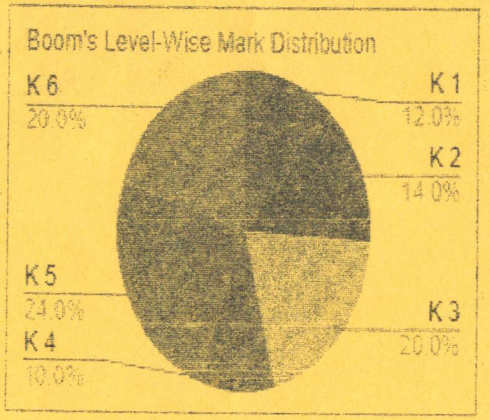
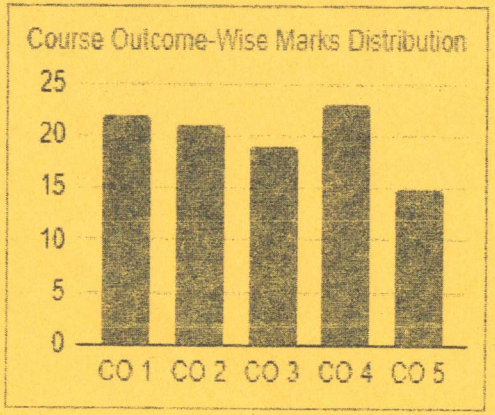
CO- Course Outcomes, **KL**- Knowledge Level, **PO** – Program Outcome

Course Outcomes	CO1	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.
	CO2	Use basic concepts to analyze and design a wide range of semiconductor devices.
	CO3	Understand & solve different types of wave equations.
	CO4	Use the principles of optics to solve various complex engineering problems.
	CO5	Use fundamental laws and relations to solve problems in electricity, electromagnetism

GRAFICAL REPRESENTATION





ARKAJAIN University Jharkhand

END TERM EXAMINATION
School of Engineering & IT

Branch	ME /EEE /CSE /CL	Program	B.Tech.
Subject Name	Engineering Physics	Semester	II
		Year	2023/ Even

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**
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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 Q1-x) - 20 Marks

Q. N 1	QUESTIONS	Marks	COs	KL	PO
i	What is a simple harmonic motion ?	2	CO1	K1	PO2
ii	What is diffraction ?	2	CO4	K2	PO 1
iii	Explain what is a Fermi Level ?	2	CO3	K2	PO 1
iv	Explain De Broglie hypothesis.	2	CO3	K2	PO 3
v	What is direct band gap ?	2	CO4	K2	PO 1
vi	What is stimulated absorption ?	2	CO1	K1	PO2
vii	Explain what is meant by population inversion.	2	CO2	K1	PO 1
viii	What is the condition for dark fringe ?	2	CO1	K1	PO 1
ix	What is a metastable state ?	2	CO4	K2	PO 1
x	State two types of pumping mechanisms in LASER.	2	CO1	K1	PO2

Section B (Answer any FOUR out of SIX) – 20 Marks
(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain spontaneous & stimulated emission.	5	CO3	K2	PO 1
.3	What is constructive interference ? Explain.	5	CO3	K2	PO 3
4	What is displacement current ?	5	CO4	K2	PO 1
5	Explain Faraday's Law of electromagnetic induction.	5	CO1	K1	PO2
6	Explain Uncertainty Principle.	5	CO2	K1	PO 1
7	State the differences between intrinsic & extrinsic semiconductors.	5	CO1	K1	PO 1

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Derive the expression for resultant amplitude of a wave , when two waves meet at a point.	10	CO4	K2	PO 1
9	Derive the equation for diffusion current density of a semiconductor.	10	CO4	K2	PO 1
10	Derive Einstein's A & B coefficients.	10	CO1	K1	PO2
11	Derive the time independent Schrodinger's wave equation.	10	CO2	K1	PO 1
12	Derive the expression for Maxwell's fourth equation.	10	CO1	K1	PO 1