CODE: A10201 | R23 | H.T.No:

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

B.Tech I Year I Semester Regular Examinations February 2024
Subject Name: **Basic CIVIL & MECHNICAL ENGINEERING**

Branch: **CSE**

Time: 3 Hours | **SET-1** | **Max. Marks: 70**

Note: Part A must be answered from page no 3-18 and Part B must be answered from 19-36 pages

PART-A (CIVIL)					
Answer all 5 questions from Part-A. Each question carries one marks					
1	a	Mention the disciplines of civil engineering?	1M	CO1	BTL1
	b	Describe the modes of transport in civil engineering.	1M	CO3	BTL2
	c	Define surveying.	1M	CO2	BTL1
	d	Describe functions of a dam.	1M	CO3	BTL2
	e	Define bearing of a line.	1M	CO2	BTL1
Answer one full question from each unit. Each full question carries 10 marks					
UNIT-I					
2	a	Explain briefly the role of civil engineers in the development of the nation	10M	CO1	BTL1
OR					
3	a	Explain the prefabricated construction technique.	10M	CO1	BTL2
UNIT-II					
4	a	The following staff readings were observed successively with a level, the instrument have been moved after third, sixth and eighth readings: 3.150, 1.605,0.920,2.600,2.900, 1.125, 0.605, 2.265 m. calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 110.0 m carryout the arithmetic check?	8M	CO2	BTL3
	b	List the objectives of Surveying?	2M	CO2	BTL2
OR					
5	a	Explain the characteristics of Contour Mapping.	5M	CO2	BTL2
	b	Classify the various types of surveying and explain any two in detail?	5M	CO2	BTL3
UNIT-III					
6	a	Define the highway. What is the importance of Transportation in the Nation's economic development	5M	CO3	BTL1
	b	Write short notes on Airport and Railway Engineering.	5M	CO3	BTL2
OR					
7	a	Explain the various sources of water	5M	CO3	BTL2
	b	Explain the water quality parameters.	5M	CO3	BTL2

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		PART-B (MECHANICAL) **Answer all 5 questions from Part-A. Each question carries one marks**			
1	a	Name two marine sectors.	1M	CO1	BL1
	b	What is ferrous materials	1M	CO1	BL1
	c	Write down the working principle of boiler	1M	CO2	BL1
	d	What is power transmission	1M	CO3	BL1
	e	Any four applications of Gas turbine power plant	1M	CO3	BL1
Answer one full question from each unit. Each full question carries 10 marks					
		UNIT-I			
2	a	Write a short note on 1. Extrusion 2. Rolling 3. Drawing	5M	CO1	BL2
	b	What is metal casting. Describe different methods of metal casting	5M	CO1	BL2
		OR			
3	a	What is the role of Mechanical engineer in the role of Automotive industry?	5M	CO1	BL2
	b	Differentiate between ferrous and non-ferrous materials	5M	CO1	BL2
		UNIT-II			
4	a	What is meant by refrigeration system? Describe vapour compression refrigeration system	5M	CO2	BL3
	b	Explain Otto cycle with a neat sketch	5M	CO2	BL3
		OR			
5	a	Discuss different types of Machining process	5M	CO1	BL2
	b	Differentiate between two stroke and four stroke engine	5M	CO2	BL2
		UNIT-III			
6	a	Describe with the neat sketch of different types of belt drive	7M	CO3	BL2
	b	What is gear transmission. Explain different types of gear	3M	CO3	BL3
		OR			
7	a	What are applications of robots	5M	CO4	BL2
	b	Discuss different types of power plants?	5M	CO2	BL2

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CODE: A10004 | **R23** | **H.T.No:**

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

I B. Tech I Semester Regular Examinations Feb 2024
Subject: **Chemistry**
Branch: CSE

Time: 3 Hours | **SET-2** | **Max. Marks: 70**

Instructions:
1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	Define the Heisenberg uncertainty principle.	2M	CO1	L1
	b	Calculate the bond order and magnetic nature of the O_2 molecule.	2M	CO1	L3
	c	What is a superconductor? Name one superconductive material.	2M	CO2	L1
	d	Define Fullerenes. Write two major applications of fullerenes.	2M	CO2	L1
	e	What are potentiometric titrations?	2M	CO3	L1
	f	Differentiate between primary cells and secondary cells.	2M	CO3	L2
	g	Define the functionality of monomers with an example.	2M	CO4	L1
	h	Why PVC used in chemical industries?	2M	CO4	L1
	i	Write important section rules of IR spectroscopy.	2M	CO5	L2
	j	Mention a few advantages of chromatography.	2M	CO5	L1
PART-B					
UNIT-I					
2	a	Explain the postulates of molecular orbital theory.	5M	CO1	L2
	b	Describe the π-molecular orbitals of benzene with a neat diagram.	5M	CO1	L2
OR					
3	a	Derive the Schrodinger wave equation.	7M	CO1	L3
	b	Draw the molecular energy level diagram of carbon monoxide.	3M	CO1	L2
UNIT-II					
4	a	Classify super capacitors based on type of electrodes.	5M	CO2	L4
	b	Define Superconductors and explain the basic concept of Super conductors.	5M	CO2	L2
OR					
5	a	Describe any five properties of graphene nanoparticles.	5M	CO2	L2
	b	List any five major applications of nanomaterials in various fields, such as electronics, medicine, and materials science.	5M	CO2	L1
UNIT-III					
6	a	Describe the working principle and cell reactions of the zinc-air	5M	CO3	L2

		UNIT-III			
6	a	Categorize magnetic materials.	5M	CO3	BTL I
	b	Explain the domain concept in Ferromagnetism	5M	CO3	BTL I
		OR			
7	a	Derive Clausius-Mosotti equation	8M	CO3	BTL I
	b	Explain the physical significance of the Clausius-Mosotti equation.	2M	CO3	BTL I
		UNIT-IV			
8	a	Deduce time-independent Schrodinger wave equation for a free particle	7M	CO4	BTL II
	b	An electron is confined to an infinite potential well of width 10 nm. Calculate the minimum uncertainty in velocity	3M	CO4	BTL V
		OR			
9	a	Explain the Heisenberg uncertainty principle	5M	CO4	BTL I
	b	Explain the merits and demerits of classical free electron theory briefly	5M	CO4	BTL I
		UNIT-V			
10	a	Describe the Hall effect in a semiconductor along with its applications.	6M	CO5	BTL I
	b	Explain drift and diffusion current	4M	CO5	BTL I
		OR			
11	a	Define extrinsic semiconductors and intrinsic semiconductors and give two examples	5M	CO5	BTL I
	b	Explain the temperature-dependent energy band diagram for *n*-type and *p*-type semiconductors with a neat sketch diagram	5M	CO5	BTL I

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CODE: A10001 | **R23** | **H.T.No:** | | | | | | | | | | |

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)
B.Tech I Year I Semester Regular Examinations February 2024

Subject Name: **Communicative English**

Branch: **CSE**

SET-2

Time: 3 Hours **Max. Marks: 70**

Instructions:

1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	Punctuate the following 1. However strange however grotesque may be the appearance which Dante under takes to describe he never shrinks from describing it he gives us the shape the colour the sound the smell the taste. 2. Modern ideas of government date back to the 1960s when for the first time people began to question a kings right to rule once through to be god given.	2M	CO	L1
	b	Insert commas, where necessary, in the following sentences:- My orchard was often robbed by schoolboys and my wife's custards plundered by the cats. Whenever I approached a peasant's house towards night-fall I played one of the most merry tunes. By conscience and courage by deeds of devotion and daring he soon commended himself to his fellows and his officers. Wealth may seek us but wisdom must be sought. Beware lest thou be led into temptation.	2M		L1
	c	Choose the correct word 1. Can I go to the party (to, too, two)? 2. This is my favorite (pare, pair, pear) of jeans.	2M		L1
	d	Fill in the blank spaces with the correct article a) The university is on ____ George Street. b) I go into ___ library three times ___ week.	2M		L1
	e	Fill in the blank spaces with the correct preposition. 1. All the students will work ___ a collaborative environment. 2. They need to concentrate ___ their studies.	2M		L1
	f	Fill in the blanks using cohesive devices.	2M		L1

		1. ----- I would like to thank all of you for coming 2. Answer only if you re sure. ----- you will lose marks as there is a negative marking for wrong answers.			
	g	Form Compound Words 1) Noun+Noun 2) Gerund+Noun	2M		L1
	h	Question Tag 1) He is drunk. 2) You are joking.	2M		L1
	i	Put the following in Indirect Speech:- 1) "Bring me a drink of milk," said the swami to the villagers. 2) "Sit down, boys," said the teacher.	2M		L1
	j	Put the following in Direct Speech:- 1) Rama asked me what had become of Hari. 2) I told him that I had not seen him for months.	2M		
PART-B					
UNIT-I					
2	a	Synonyms:- 1. Hate 2. Have 3. Help 4. Hide 5. Idea	5M	CO	BTL
	b	Antonyms:- 1. Withdraw 2. Secret 3. Awe 4. Impartial 5. Luminous	5M	CO	BTL
OR					
3	a	Synonyms:- 1. Little 2. Love 3. Make 4. Move 5. Neat	5M	CO	BTL
	b	Antonyms:- 1. Pit 2.Talent 3. Pique 4. Heartfelt 5. Common	5M	CO	BTL
UNIT-II					
4	a	Write short paragraph on the topic **"A Rainy Day"**	5M	CO	BTL
	b	What is the moral of the poem The Brook?	5M	CO	BTL
OR					
5	a	Write short paragraph on the topic **"Politeness"**	5M	CO	BTL
	b	Write a paragraph about the importance of non-verbal communication	5M	CO	BTL
UNIT-III					
6	a	Who is Elon Musk write a short note?	5M	CO	BTL
	b	Note Making:- Nature seems to have taken a particular care to disseminate her blessings among the different regions of	5M	CO	BTL

		the world with an eye to this mutual intercourse and traffic among mankind, that the natives of the several parts of the globe might have a kind of dependence upon one another, and be united together by their common interest. Almost every degree produces something peculiar to it. The food often grows in one country, and the sauce in another. The fruits of Portugal are corrected by the products of Barbadoes, and the infusion of a China plant is sweetened by the pith of an Indian cane. The Philippine islands give a flavour to our European bowls. The single dress of a woman of quality is often the product of a hundred climates. The muff and the fan come together from the different ends of the earth. The scarf is sent from Jie torrid zone, and the tippet from beneath the pole. The brocade petticoat rises out of the mines of Peru, and the diamond necklace out of the bowels of Indostan.			
OR					
7	a	Write summary of the following passages of about one-third of the original length:- The man who is perpetually hesitating which of the two things he will do first, will do neither. The man who resolves, but suffers his resolution to be changed by the first counter-suggestions of a friend, - who fluctuates from opinion to opinion, from plan to plan, and veers like a weather-cock to every point of the compass, with every breath of caprice that blows - can never accomplish any thing great or useful. Instead of being progressive in any thing, he will be at best stationary, and more probably retrograde in all. It is only the man who first consults wisely, then resolves firmly, and then executes his purpose with flexible perseverance, undismayed by those petty difficulties which daunt a weaker spirit, that can advance to eminence in any line. Take your course wisely, but firmly; and having taken it, hold upon it with heroic resolution, and the Alps and Pyrenees will sink before you.	5M	CO	BTL
	b	What are the 5 steps to summarizing?	5M	CO	BTL
UNIT-IV					
8	a	Write to the Director of Education, applying for appointment as a teacher in the Educational Service.	5M	CO	BTL
	b	Write a resume for the post of manager.	5M	CO	BTL
OR					

9	a	Write to the local Gas or Electric Company, saying that you need the light, etc., on your premises, and asking them to forward the lowest estimate. Do not forget to supply full particulars of your requirements.	5M	CO	BTL
	b	Write a resume for the post of Assistant professor.	5M	CO	BTL
UNIT-V					
10	a	It is often said that governments spend too much money on projects to protect wildlife, while there are other problems that are more important? Do you agree or disagree?	5M	CO	BTL
	b	Correct the following passage: On cold, wet morning, my class was filled with excitement. Someone have discover that the next day was our teacher's birthday. Our teacher was the kindest person that ever exist. Thus it is no surprise she was the favourite teacher to the pupils. Everyone want to get her a present. I, very much wanted to shown any appreciation too. That afternoon, I spends the whole afternoon shop for a present. After a long search, I finally made on my mind. The next day I gived her a bouquet of beautiful roses and she exclaimed with pleasure.	5M	CO	BTL
OR					
11	a	Many things that used to be done in the home by hands are now being done by machines. Does this development bring more advantages or disadvantages?	5M	CO	BTL
	b	Read the following sentences and identify and correct the errors. 1. Many peoples attended the funeral of the great man. 2. The shepherd took the cattles to the field. 3. Sita could not understands what the teacher was saying. 4. Do you know the importance for clean water? 5. Laugh is the best medicines.	5M	CO	BTL

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CODE: A10501	R23	H.T.No:									

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN
(AUTONOMOUS)

B. Tech I Year I Semester Regular Examinations February 2024
Subject Name: **INTRODUCTION TO PROGRAMMING**
Branch: CSE and ECE

Time: 3 Hours **SET-2** **Max. Marks: 70**

Instructions:
1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	What is the difference between a local variable and a global variable in C?	2M	CO.1	Remember
	b	Name any 2 basic data types and 2 user defined data types.	2M	CO.1	Remember
	c	How do you use the "printf()" function to print formatted output in C?	2M	CO.2	Remember
	d	Describe the syntax for declaring a multi-dimensional array in C	2M	CO.2	Understand
	e	Write a C program to find the largest number among three numbers entered by the user.	2M	CO.3	Apply
	f	What is the purpose of the "break" statement in a loop in C?	2M	CO.3	Remember
	g	How do you declare and define a structure in C?	2M	CO.4	Apply
	h	Explain the role of the "const" keyword in C variable declarations.	2M	CO.4	Understand
	i	What is the purpose of the "malloc()" function in C dynamic memory allocation?	2M	CO.5	Remember
	j	Write a C program to calculate the n^{th} Fibonacci number using a recursive function.	2M	CO.5	Apply
PART-B					
UNIT-I					
2	a	Define the basic organization of a computer as consisting of the central processing unit (CPU), memory, input/output devices, and storage components, all interconnected to execute instructions and store data.	5M	CO.1	Apply
	b	What are relational operators? Explain different relational operators in C	5 M	CO.1	Remember
OR					
3	a	Describe the purpose and syntax of the scanf() function in C programming, providing an example of its usage.	5M	CO.1	Analysis
	b	Write an algorithm and flow chart to find a number is even or not	5 M	CO.1	Apply
UNIT-II					
4	a	Explain the concept of loops in C programming and provide an example program demonstrating the usage of a for loop.	5M	CO.2	Understand
	b	Write a C program using switch cases to implement a simple calculator capable of performing Multiplication and division operations on two numbers.	5 M	CO.2	Apply

		OR			
5	a	Describe the purpose of conditional statements in C programming and provide an example program utilizing if-else statements to determine whether a given year is a leap year or not.	5M	CO.2	Apply
	b	Write a C program that utilizes a loop to calculate the factorial of a given number.	5M	CO.4	Apply
		UNIT-III			
6	a	Write a C program that implements a function to search for a specific element in a 1-dimensional array, demonstrating efficient traversal techniques	5M	CO. 2	Apply
	b	Define and compare string manipulation functions in C, such as strcpy(), strlen(), and strcmp(), by discussing their respective functionalities, input parameters, and return values	5M	CO. 3	Evaluate
		OR			
7	a	Write a C program for multiplication of two matrices	5M	CO.2	Apply
	b	Compare and contrast the implementation of one-dimensional arrays and two-dimensional arrays in C programming	5 M	CO.3	Understand
		UNIT-IV			
8	a	Explain the concept of typedef in C programming, outlining its role in defining user-defined data types and providing examples to demonstrate its usage for creating aliases for existing data types or complex structures.	5M	CO.4	Apply
	b	Compare and contrast the concept of encapsulation in structures with arrays in C programming	5 M	CO.4	Understand
		OR			
9	a	Discuss the concept of pointer indirection in C programming, explaining how dereferencing a pointer allows access to the value stored at the memory address it points to, and provide examples to illustrate its usage.	5M	CO.4	Evaluate
	b	Write a C program that dynamically allocates memory for an array of integers using pointer notation, and demonstrate how to access and manipulate the elements of the array.	5 M	CO.4	Apply
		UNIT-V			
10	a	Write a Simple C function that checks whether the number is divisible by 3 or not?	5M	CO.5	Apply
	b	Explain the concept of function pointers in C programming, discussing how they enable dynamic function invocation and provide examples to demonstrate their usage in scenarios such as callback functions and function swapping.	5 M	CO.5	Evaluate
		OR			
11	a	Discuss about the various types of file streams in C programming with examples.	5M	CO.5	Creating
	b	Discuss the advantages and limitations of using pointers as function parameters in C programming.	5 M	CO.5	Analysis

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CODE: A10002	**R23**	**H.T.No:**									

RAVINDRA COLLEGE OF ENGINEERING FOR WOMEN

(AUTONOMOUS)

B.Tech I Year I Semester Regular Examinations JANUARY 2024

Subject Name: Linear Algebra and Calculus

Branch: CSE and ECE

SET-1

Time: 3 Hours **Max. Marks: 70**

Instructions:

1. Answer all 10 questions from Part-A. Each question carries two marks
2. Answer one full question from each unit in Part-B. Each full question carries 10 marks

PART-A					
1	a	Find the rank of the matrix $\begin{bmatrix} 2 & -1 & 1 \\ 1 & 2 & 3 \\ 1 & 3 & 2 \end{bmatrix}$	2M	CO1	LI
	b	Explain the system of equations consistent and inconsistent.	2M	CO1	
	c	If $A=\begin{bmatrix} 1 & 2 \\ 0 & 6 \end{bmatrix}$ then find the Eigen values of A^3.	2M	CO2	LI
	d	Find the quadratic form of the matrix $A=\begin{bmatrix} 1 & 2 \\ 2 & -3 \end{bmatrix}$	2M	CO2	LI
	e	Find the value of C in Rolle's theorem for the function $f(x)=x^3-3x$ in the interval $\left[0, \sqrt{3}\right]$.	2M	CO3	LI
	f	Find the coefficient of $(x-1)^2$ in the Talor's series expansion of e^{2x} about $x=1$.	2M	CO3	LI
	g	If $u=x^2+y^2$, where $x=at^2, y=2at$, then find $\frac{du}{dt}$	2M	CO4	LI
	h	If $u=e^{2x}\cos y$ and $v=e^{2x}\sin y$, then find $\frac{\partial(u,v)}{\partial(x,y)}$.	2M	CO4	LI
	i	Find the value of the integral $\int_0^2\int_0^y x^2 y\,dxdy$	2M	CO5	LI
	j	Find the value of the integral $\int_0^1\int_0^2\int_0^3 x^2 yz\,dxdydz$	2M	CO5	LI
PART-B					
UNIT-I					
2	a	Reduce the matrix $A=\begin{bmatrix} 1 & 1 & 3 & 1 \\ 1 & 2 & 0 & -1 \\ 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}$ to Echelon form and hence find its rank.	5M	CO1	LI
	b	Apply Gauss Jordan method to solve the equations $x+y+z=9;\ 2x-3y+4z=13;\ 3x+4y+5z=40.$	5M	CO1	LIII
OR					

3	a	Determine b such that the system homogeneous equations $2x+y+2z=0;\ x+y+3z=0;\ 4x+3y+bz=0.$ has trivial and non-trivial solutions. Find the non-trivial solution	5M	CO1	LV
	b	Solve the following equations, by Jacobi's iteration method $20x+y-2z=17;\ 3x+20y-z=-18;\ 2x-3y+20z=25$	5M	CO1	LIII
		UNIT-II			
4		Diagonalize the matrix A, where A= $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 3 & -1 \\ 0 & -1 & 3 \end{bmatrix}$	10 M	CO2	LIV
		OR			
5		Reduce the quadratic form $6x^2+3y^2+3z^2-4xy-2yz+zx$ to the canonical form also find rank, index, and signature of the quadratic form.	10 M	CO2	LIV
		UNIT-III			
6	a	If the function $f(x)=x^4+ax^3+bx$ verify Rolle's theorem in the interval $[-1,1]$	5M	CO3	LI
	b	Verify Cauchy's mean value theorem for $f(x)=\sqrt{x}$ and $g(x)=\frac{1}{\sqrt{x}}$ in $[a,b]$, where $0<a<b.$	5M	CO3	LVI
		OR			
7		Verify the Taylors theorem $f(x)=(1-x)^{\frac{5}{2}}$ with Lagrange's form of remainder upto 2 terms in the interval $[0,1]$.	10 M	CO3	LVI
		UNIT-IV			
8	a	If $x=r\sin\theta\cos\phi,\ y=\sin\theta\sin\phi$ and $z=r\cos\theta,$ show that $J\left(\frac{x,y,z}{r,\theta,\phi}\right)=r^2\sin\theta.$	10 M	CO4	LII
		OR			
9	a	Prove that the functions $u=2x-y+3z,\ v=2x-y-z$ and $w=2x-y+z$ are functionally related and find the functionally relation between them.	5M	CO4	LV
	b	Discuss the maxima and minima of $u(x,y)=\sin x\sin y\sin(x+y),$ where $0<x<\pi$ and $0<y<\pi.$	5M	CO4	LI
		UNIT-V			
10	a	By changing the order of integration, evaluate the integral $\int_0^a\int_x^a\left(x^2+y^2\right)dydx.$	5M	CO5	LV
	b	Evaluate $\int_{-1}^{1}\int_{0}^{z}\int_{x-z}^{x+z}(x+y+z)\,dxdydz$	5M	CO5	LV
		OR			
11		Find the volume of the sphere $x^2+y^2+z^2=a^2$ by triple integral in spherical polar coordinates.	10 M	CO5	LI

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