PIMPRI CHINCHWAD UNIVERSITY

Established Under Govt. of Maharashtra Act No. V of 2023

Sate, Maval (PMRDA). Dist-Pune, Maharashtra-412106 www. pcu.edu.in

Name. Akanksha Jharia

Student Enrollment number. No.: SoE 2320 1010 003

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School of Engineering

Unit Test-II (UT-II)
[Programme: B.Tech] -

Semester-: Odd 2023,
[Sem- I]

Month- Oct/Nov
[Batch: A-J]

Course Title: Applied Technical Communication
Course Code: CENG101

Max Marks: 30
Time:(1 Hrs)

Instructions:
1. *All questions are compulsory.*
2. *Assume missing data suitably, if any.*

SECTION-A

Note: This section consists of multiple-choice questions (10*1 mark) or Short answer (05 *2 marks)
(Attempt all question)

S.No	QUESTION	BTL	CO	Max Marks(5 marks)
1	Explain two types of sentences.	KL2	CO1	1
2	Identify the correct answer. **a. DEFICIT** (A) surplus (B) superfluous (C) explicit (D) implicit **b. EVOLVE** (A) suspend (B) stop (C) withdraw (D) withhold	KL3	CO2	1
3	Carryout the originated word of communication.	KL3	CO3	1
4	What is inter-operational level of communication?	KL1	CO3	1
5	What is grapevine communication?	KL1	CO3	1

SECTION-B - (Max Marks : 9)

This section consists of Descriptive questions.   (Attempt any 3 questions)

	QUESTION	BTL	CO	Marks
1	Express the given homophones in each sentence. Alter, altar; bear, bare; lead, led	KL2	CO2	3
2	Write a detailed note on the important features of technical communication.	KL3	CO3	3
3	Illustrate the one type of processes of communication with schematic diagram.	KL3	CO3	3
4	Write the difference between the various levels of communication. Give one example of each level.	KL3	CO3	3

SECTION-C

Marks (16 marks)
(Attempt any two questions/one Case study)

This section consists of Case Study/Experiential learning based Questions

	QUESTION	BTL	CO	Marks
1	"Effective technical writing is essential for business success"- Classify the statement.	KL4	CO3	8
2	Analyze importance of Technical communication	KL4	CO3	8
3	Examine how language is a tool of communication. Explain its various characteristics that exhibit in language.	KL4	CO3	8
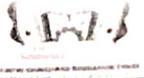
Student Name. Akanksha Jharia

Enrollment No.: Sof 23201010003

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School of Engineering and Technology

Unit Test – II (UT-II)

ODD Semester Month- November 2023

Programme: First Year B. Tech. (All)

[Semester-I] [Batch:2023-2 ?]

Course Title: Problem Solving Using C

Course Code: CSE 101

Max Marks. ?

Time: 1hour

Instructions:

1. *All questions are compulsory.*
2. *Assume missing data suitably, if any.*

(Attempt all question)

Q.No	QUESTION	BTL	CO	Max Marks
1	**Answer any two questions of the following:**			6
	a. Explain the basic structure of C program and significance of each Section.	KL3	CO2	
	b. Discuss in detail various sized integer data types supported by C. Give their storage and value ranges.	KL3	CO2	
	c. Explain any four types of operators that are available in C language with examples.	KL3	CO2	6
2	**Answer any two questions of the following:**	KL1/KL2	CO2	5
	a. Define compiler and explain phases of compilation and linking.			
	b. Define error. Explain the flowing:	KL1/KL2	CO2	5
	i. Syntax error			
	ii. Logical error			
	c. Define an Expression. Write the priority of different arithmetic operators in C. Evaluate 2+4*5/2-2/4+2%5.	KL1/KL3	CO2	5
3	**Answer any two questions of the following:**			
	a. Justify the following:	KL2	CO2	4
	i. C Programming is structured programming language.			
	ii. C programming is portable.			
	b. Explain implicit and explicit type conversion with an example.	KL2	CO2	4
	c. Explain formatting input/output functions supported by C with syntax.	KL2	CO2	4

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School of Engineering and Technology

Unit Test – II (UT-II)	ODD Semester	Month- November 2023
Programme: First Year B. Tech. (All)	**[Semester-I]**	**[Batch:2023-24]**

Course Title: Basic Electrical Engineering **Course Code: ELE 101**	**Max Marks: 30** **Time: 1 hour**

Instructions:	1. *All questions are compulsory.* 2. *Assume missing data suitably, if any.*

| QUESTION	BTL	CO	Max Marks
Q 01 **Attempt *ANY THREE***			
1. Define following terms. Write their units a) Flux Density, b) Magnetic Field Strength, c) Permeability, d) Reluctance, e) MMF	KL1	CO3	[05]
2. Compare Electric Circuit and Magnetic Circuit with similarities and differences	KL2	CO3	[05]
3. Derive the equation of coefficient of coupling and hence define it. What is the maximum value of coefficient of coupling? What is its unit?	KL2	CO3	[05]
4. A coil of **500 turns** closely wound on an iro ring with mean diameter **0.25 m** and cross section of **700 mm²**. If the coil carries current of **1.5 A**, find MMF, Magnetizing force (H), Reluctance (S), Flux (ϕ) and Flux density (B). $\mu_r = 550$	KL3	CO3	[05]
5. Two coils having **150 & 200 turns** respectively are wound side-by-side on a closed magnetic ckt. of cross-section **1.5x10⁻² m²** and mean length **3m**. The relative permeability is **2000**. Calculate reluctance, self-inductances and mutual inductance. Calculate the voltage induced in the second coil when the current in the first coil changes from **0 to 10 Amp in 20 ms.**	KL3	CO3	[05]
Q 02 **Attempt *ANY THREE***			
1. Define the following terms for a sinusoidal quantity. a) Peak value, b) Time Period, c) Waveform, d) Peak factor, e) Form factor	KL1	CO4	[05]
2. Define Average value and hence derive the relation **Iavg= 0.637*Imax**	KL2	CO4	[05]
3. Prove that current leads the voltage by **90⁰** for purely capacitive circuit. Derive the equation of instantaneous power. Draw ckt diagram, waveforms and phasor diagram.	KL2	CO4	[05]
4. Voltage, **V= 230 V**, and current, **I=5 Amp**. Current lags the voltage by **30⁰**. Frequency is **50 Hz**. Write down the equations of voltage and current Write down polar form and rectangular form of voltage and current Draw phasor diagram showing V & I with magnitude and angle Calculate the resistance, reactance and impedance for this circuit	KL3	CO4	[05]
5. An alternating current varying sinusoidally with a frequency of **50 c/s** has an rms value of **20 A**. Write down the equation for the instantaneous value and find this value at i) **0.0025 s**, and (ii) **0.0125 s** after passing through zero and increasing positively (iii) At what time, measured from zero, will the value of the instantaneous current be **14.14 A?**	KL3	CO4	[05]
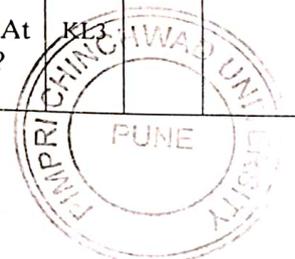
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School of Engineering and Technology

Unit Test – II (UT-II)   ODD Semester   Month- November 2023

Programme: First Year B. Tech. (All)   [Semester-I]   [Batch:2023-24]

Course Title: Linear Algebra and Differential Calculus
Course Code: MTH 101

Max Marks: 30
Time: 1 hour

Instructions:

1. *All questions are compulsory.*
2. *Assume missing data suitably, if any.*

(Attempt all question)

Q. No	QUESTION	BTL	CO	Max Marks
Q. 1.	**Solve any Three**			
a)	Verify the Lagrange's Mean Value theorem for the function $f(x)= e^x$ in $[0, 1]$	BTL3	CO3	5
b)	Expand $x^3 - 2x^2 + 3x + 1$ in ascending power of $(x-1)$	BTL3	CO3	5
c)	Evaluate $\lim_{x \to \frac{\pi}{2}} (\sec x)^{\cot x}$	BTL3	CO3	5
d)	Find the values of a, b if $\lim_{x \to 0} \dfrac{\sin(3x) + ax + bx^3}{x^3} = 0$	BTL3	CO3	5
Q. 2.	**Solve any Three**			
a)	Test the convergence of the series $1 + \dfrac{2^2}{2!} + \dfrac{3^2}{3!} + \dfrac{4^2}{4!} + \cdots$	BTL3	CO4	5
b)	Test the convergence of the series $i)$ $\dfrac{1}{\sqrt{2}} - \dfrac{1}{\sqrt{9}} + \dfrac{1}{\sqrt{28}} - \dfrac{1}{\sqrt{65}} + \cdots$ $\quad ii)$ $1 + \dfrac{1}{2} + \dfrac{1}{3} + \dfrac{1}{4} + \cdots$	BTL3	CO4	5
c)	Find the Fourier series of $f(x) = x$, $-\pi \le x \le \pi$	BTL3	CO4	5
d)	Find the half range Fourier cosine series for the function $f(x) = 1 - x$, $0 \le x \le 1$	BTL3	CO4	5