

7/7/23 160



END TERM EXAMINATION
School of Engineering & IT

Branch	Mechanical Engineering	Program	Diploma
Subject Name	Fundamentals of Electrical and Electronics Engineering	Semester	II
		Year	2023/ Even
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 Graf Paper / Drawing Sheet/ Log Book/ Ledger (please Mention if any) 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

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

CO1	Remembering the basic terminology/ definitions of electrical component & Signals
CO2	Understanding the Analog electronic Specially Op-Amp & Digital Electronics and their applications
CO3	Applying the knowledge of theorems/laws for Predict the behavior of any electrical and magnetic circuits and Use the principles of electromagnetic induction in electrical applications
CO4	Analyzing the formulation and solution of simple and complex AC, Dc circuits
CO5	Evaluating the requirement of transformers and the type of electrical machine used for that particular application

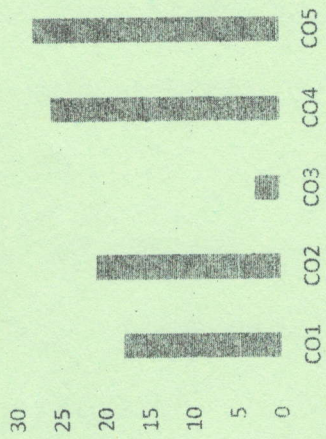
GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

Course Outcome Wise Marks Distribution



Q. N	QUESTIONS	Marks	COs	KL	PO
1					
i	What are the functions of pole shoe and pole core?	2	CO1	K2	PO2
ii	Draw the symbol of enhancement type N-channel and P-channel MOSFET	2	CO2	K1	PO3
iii	Write down the full form of BJT and FET with symbolic Diagram	2	CO5	K4	PO4
iv	Define MMF and EMF.	2	CO2	K1	PO3
v	Define Diode and what is the main function of pn diode	2	CO1	K4	PO2
vi	Draw the symbol of enhancement type N-channel and P-channel MOSFET.	2	CO3	K3	PO1
vii	Define conductor, insulator and semiconductor.	2	CO3	K1	PO3
viii	What is doping?	2	CO3	K2	PO4
ix	What is function of commutator and brush?	2	CO5	K5	PO2
x	What do you mean by forward and reverse biased?	2	CO4	K1	PO4

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

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

(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Derive the relationship between voltage and current for a pure inductive load.	5	CO1	K2	PO5
3	Write down the working of PNP transistor.	5	CO3		PO3
4	Derive the emf equation of transformer.	5	CO2	K4	PO1
5	Derive the relationship between line current and phase current of a delta connection	5	CO5	K4	PO4
6	A shunt generator delivers 450 A at 230 V and the resistance of the shunt field and armature are 50Ω and 0.03Ω respectively. Calculate the generated EMF?	5	CO2	K5	PO5
7	Write down the difference between MOSFET and BJT.	5	CO5	K5	PO2

Section C (Answer any TWO out of FOUR) – 20 Marks-

(Each question Carry 10 Marks)

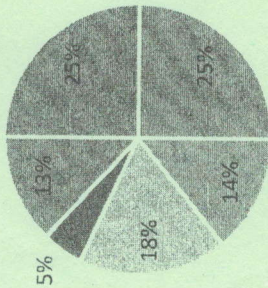
Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Explain Boolean Laws.	10	CO5	K4	PO4
9	A single phase 50Hz 200KVA 11000/440V has 80 turns on secondary. Find the (i) rated secondary and primary current (ii)turn ration (iii) transformation ratio	10	CO1	K5	PO2
10	Explain briefly VI characteristics if diode?	10	CO1	K5	PO4
11	Explain construction and working of enhanced type MOSFETs	10	CO2	K4	PO2
12	A 240 V, 50 Hz AC supply is applied a coil of 0.08 H inductance and 4Ω resistance connected in series with a capacitor of $8 \mu\text{F}$. Calculate the following – (i) Impedance, (ii) Circuit current, (iii) Phase angle between voltage and current, (iv) Power factor,	10	CO1	K5	PO3

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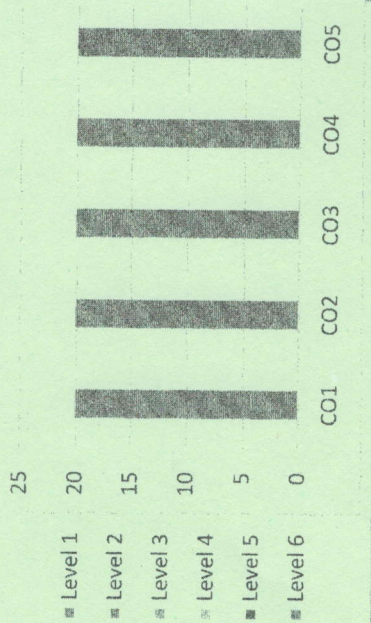
CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Understand the ecosystem and terminology and solve various engineering problems applying	
CO2	Ecosystem knowledge to produce eco – friendly products.	
CO3	Understand the suitable air, extent of noise pollution, and control measures and acts.	
CO4	Understand the water and soil pollution, and control measures and acts.	
CO5	Understand different renewable energy resources and efficient process of harvesting.	

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome wise Marks Distribution



14/7/23

150



END TERM EXAMINATION
School of Engineering & IT

Branch	Mechanical Engineering	Program	Diploma
Subject Name	Environmental Science	Semester	II
		Year	2023/ Even

- 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
- Graf Paper / Drawing Sheet/ Log Book/ Ledger (please Mention if any)
- Possession of Mobile Phones or any kind of Written Material, Arguments with the Invigilator or Discussing with Co-Student will come under Unfair Means and will Result in the Cancellation of the Papers.

Time: 3 Hour Max.
Marks : 70

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	QUESTIONS	Marks	COs	KL	PO
1					
i	What is ecosystem??	2	CO1	K1	PO2
ii	Define biotic and abiotic components??	2	CO1	KL2	PO1
iii	Define food chain with example??	2	CO2	KL1	PO3
iv	What are the causes of air pollution?	2	CO2	KL1	PO4
v	What is solar energy?	2	CO3	KL2	PO3
vi	What is the p_H of water?	2	CO4	KL2	PO2
vii	What do you mean by aquatic and terrestrial ecosystem	2	CO3	KL3	PO4
viii	Examples of non-metallic wastes?	2	CO3	KL1	PO2
ix	Define soil pollution with example??	2	CO3	KL2	PO2
x	What is biomedical waste?	2	CO2	KL2	PO2

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

(Each question 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Explain green-house effect?	5	CO1	KL1	PO1
3	What are the sources of noise pollution??	5	CO3	KL4	PO3
4	Role of central and state pollution control board?	5	CO2	KL2	PO1
5	What are the sources and control of water pollution?	5	CO3	KL4	PO4
6	Explain in details about food web and food pyramid?	5	CO4	KL1	PO4
7.	Explain ozone layer depletion?	5	CO3	KL4	PO4

Section C (Answer any TWO out of FOUR) – 20 Marks-

(Each question Carry 10 Marks)

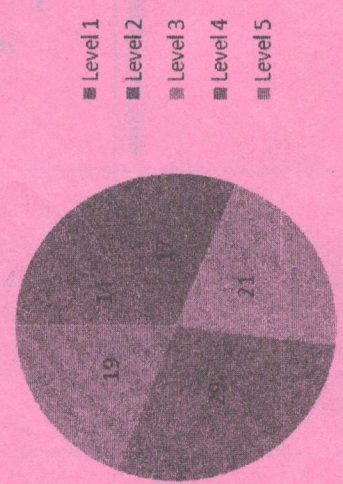
Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Explain global warming with example?	10	CO1	KL2	PO1
9	What is the definition of pollution? Explain the effects of air pollution? Write the advantages and disadvantages of bio gas production and give short note on wind energy?	10	CO3	KL1	PO4
10	What do you mean by renewable sources of energy? Write in details about its examples?	10	CO2	KL5	PO1
11	Write down the major role of municipal solid waste? Explain how harmful E- waste and biomedical waste are??	10	CO4	KL6	PO4
12		10	CO5	KL3	PO1

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

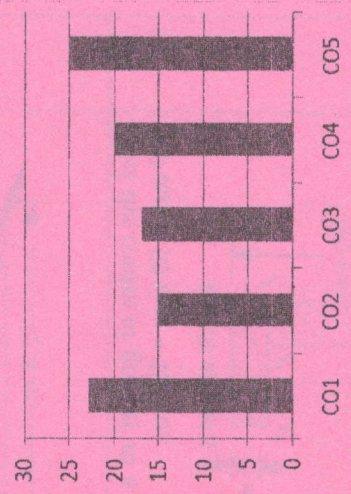
CO1	Identify the force systems for given conditions by applying the basics of mechanics.
CO2	Determine unknown force(s) of different engineering systems.
CO3	Apply the principles of friction in various conditions for useful purposes.
CO4	Find the centroid and centre of gravity of various components in engineering systems.
CO5	Select the relevant simple lifting machine(s) for given purposes.

GRAPHICAL REPRESENTATION

Bloom's Level Wise Mark Distribution



Course Outcome Wise Mark Distribution



Branch	Mechanical Engineering	Programme	Diploma
Subject Name	Engineering Mechanics	Semester	2nd
		Year	2023/EVEN

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 • 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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Time: 3 Hour
 Max. Marks: 70

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

Section A (Each question Carry 02 Marks) - 20 Marks

Q. N	QUESTIONS	Marks	COs	KL	PO
1	Define Mechanical Advantage.	2	CO1	K1	PO1
ii	Write its SI and CGS unit of Force.	2	CO1	K2	PO3
iii	What is an ideal machine?	2	CO2	K3	PO5
iv	Define Lifting machine?	2	CO4	K1	PO1
v	What is Efficiency of a machine?	2	CO5	K4	PO2
vi	What are the different types of Equilibrium Condition?	2	CO1	K1	PO1
vii	Highlight the disadvantages of Friction.	2	CO1	K4	PO5
viii	Define angle of friction.	2	CO1	K1	PO1
ix	What is a vector quantity?	2	CO1	K3	PO1
x	Define Free Body Diagram.	2	CO1	K2	PO2

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

(Each question Carry 5 Marks)

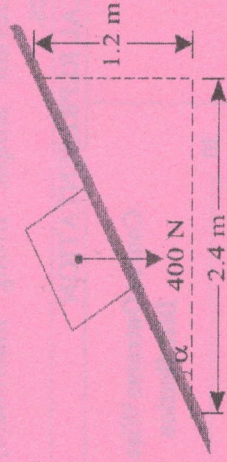
Q. No.	QUESTIONS	Marks	COs	KL	PO
1	Distinguish between Simple Machine and Compound Machine with examples.	5	CO4	K3	PO1
2	Explain difference between resolution and composition of forces with examples.	5	CO2	K1	PO2
3	What are the winch crabs? Sketch a Single purchase winch crab and set up expression for its velocity ratio.	5	CO1	K2	PO3
4	Differentiate between beam and column. Explain different types of beam.	5	CO3	K1	PO2
5	The magnitude of two forces is such that when acting at right angles their resultant is $\sqrt{20}$ N and when acting at 60° their resultant is $\sqrt{28}$ N. Find the magnitude of the two forces.	5	CO5	K1	PO5
6	Two forces of 100 N and 150 N are acting simultaneously at a point. What is the resultant of these two forces, if the angle between them is 45° ?	5	CO4	K2	PO4

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

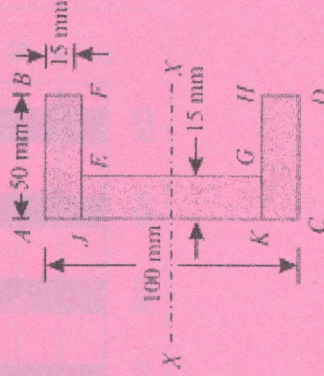
(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
1	Elaborate the following. a) Varignon's principle of moments b) Co-efficient of Friction c) Lami's Theorem	10	CO1	K3	PO1
2	a) State and prove triangle law of forces. b) Define Couple and moment. Explain clearly the difference between clockwise moments and anticlockwise moments.	10	CO1	K4	PO1
3	In a certain weight lifting machine, a weight of 1 kN is lifted by an effort of 25 N. While the weight moves up by 100 mm, the point of application of effort moves by 8 m. Find mechanical advantage, velocity ratio and efficiency of the machine.	10	CO2	K5	PO3

4 An inclined plane as shown in Fig. is used to unload slowly a body weighing 400 N from a truck 1.2 m high into the ground. The coefficient of friction between the underside of the body and the plank is 0.30. State whether it is necessary to push the body down the plane or hold it back from sliding down. What minimum force is required parallel to the plane for this purpose?



5 Find the centre of gravity of a channel section $100 \text{ mm} \times 50 \text{ mm} \times 15 \text{ mm}$.



10

CO2

K5

PO5

10

CO2

K1

PO3

Branch	Mechanical Engineering	Program	Diploma
Subject Name	Introduction to IT System	Semester	II
		Year	2023/ Even

• Start writing from 2nd page onwards; don't Write on the 1st Page Backside
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Time: 3 Hour
Max. Marks : 70

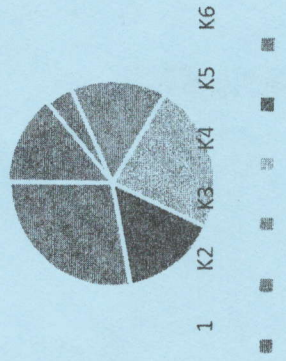
Knowledge Level (KL)	K1 : Remembering	K3 : Applying	K5 : Evaluating
	K2 : Understanding	K4 : Analysing	K6 : Creating

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

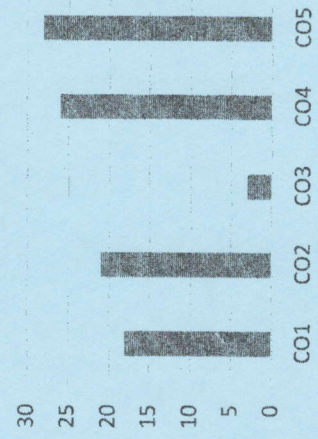
CO1	Comfortably work on computer, install and configure OS
CO2	Assemble a PC
CO3	Connect it to external devices, write documents,
CO4	Create worksheets, prepare presentations
CO5	Protect information and computers from basic abuses/ attacks.

GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



Course Outcome Wise Marks Distribution



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 Software with example.	2	CO1	K1	PO3
ii	Explain RAM and ROM.	2	CO1	K3	PO2
iii	Write about My Computer and Recycle Bin.	2	CO2	K2	PO1
iv	Write the uses of internet.	2	CO2	K4	PO2
v	What do you understand by Computer Memory?	2	CO2	K4	PO3
vi	What is Spreadsheet? Write the list of activities that can be done within a spreadsheet.	2	CO2	K1	PO4
vii	What is computer network?	2	CO3	K1	PO4
viii	What is difference Between HTML and CSS?	2	CO4	K2	PO3
ix	What is Cyber security?	2	CO5	K4	PO2
x	What is WWW?	2	CO1	K5	PO2

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Write about the operating system?	5	CO2	K5	PO2
3	Explain DOS and DOS commands?	5	CO3	K3	PO4
4	Explain about generations of computer.	5	CO4	K2	PO5
5	Write the difference between hardware and software?	5	CO4	K2	PO1
6	What is Cryptography and its application?	5	CO5	K4	PO2
7	What is the difference between PowerPoint and Document?	5	CO2	K4	PO3

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

Q. No.	QUESTIONS	Marks	COs	KL	PO
8	Explain about the advantages and disadvantages of Computer.	10	CO4	K5	PO3
9	Explain how the computer system is different from Human?	10	CO3	K3	PO2
10	Explain about the advantages and disadvantages of Internet?	10	CO5	K4	PO2
11	What is hacking and its types?	10	CO2	K5	PO1
12	What is Shell Script? Write it's. Advantages and Disadvantage?	10	CO5	K6	PO5