



ARKA JAIN
University
Jharkhand



END SEM EXAMINATION
School of Engineering & IT

Branch	Mechanical Engineering	Program	B.TECH
Subject Name:-	Cyber Security Laws, Standards & IPR	Semester	VIII
		Year	April 2024

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 come 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

CO- Course Outcomes,	KL- Knowledge Level,	PO – Program Outcome
CO1	Conduct a cyber security risk assessment	
CO2	Measure the performance and troubleshoot cyber security systems.	
CO3	Implement cyber security solutions.	
CO4	Students able to	
CO5	Understand the Freedom of speech in cyber space & human right issue Investigation of Cyber Crimes	

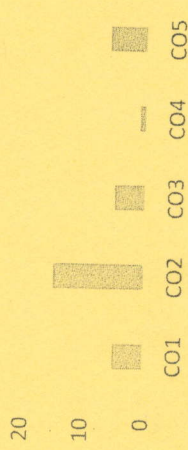
GRAFICAL REPRESENTATION

Bloom's Level wise Marks Distribution



■ K1 ■ K2 ■ K3 ■ K4 ■ K5 ■ K6

Course Outcome Wise Marks Distribution



■ Course Outcome Wise Marks Distribution

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

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	What is cyber security?	2	CO1	K1	PO1
ii	Why is cyber security important?	2	CO2	K1	PO2
iii	What are the different Types of computers Attacks.	2	CO2	K1	PO2
iv	What is System-based attacks.	2	CO2	K1	PO2
v	Define Categories of vulnerabilities.	2	CO2	K1	PO2
vi	Discuss importance of cyber security laws?	2	CO2	K1	PO2
vii	Justify the need of cyber security laws for data preservation.	2	CO 2	K1	PO2
viii	Write down the name of different Types of Cyber Attacks.	2	CO 2	K1	PO2
ix	What type of System-based attacks occurs in computers?	2	CO3	K1	PO3
x	Write down the name of different Categories of vulnerabilities.	2	CO3	K1	PO3

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


(Each question carry 5 Marks)

Q.No.	QUESTIONS	Marks	COs	KL	PO
2	Elaborate types of active Cyber attacks.	5	CO1	K2	PO1
3	Elaborate Need of Security policies.	5	CO2	K4	PO2
4	Write a short note of different Types of system based Attacks.	5	CO2	K4	PO2
5	What are the different of cyber security laws in India discuss in brief.	5	CO2	K2	PO2
6	Explain role of Mobile And Wireless in Cybercrimes.	5	CO4	K2	PO4
7	Explain the role of Attackers in data preservation.	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
8	What is cyber security? Explain Cyber security Fundamental Confidentiality.	10	CO1	K2	PO1
9	Elaborate 7 layers of Cyber security.	10	CO1	K2	PO1
10	Explain Security Vulnerabilities, Threats And Attacks.	10	CO2	K2	PO2
11	Write a short note on Attackers Motive.	10	CO5	K6	PO5
12	Explain Cyberspace And The Law & amp; Cyber Forensics	10	CO5	K5	PO5

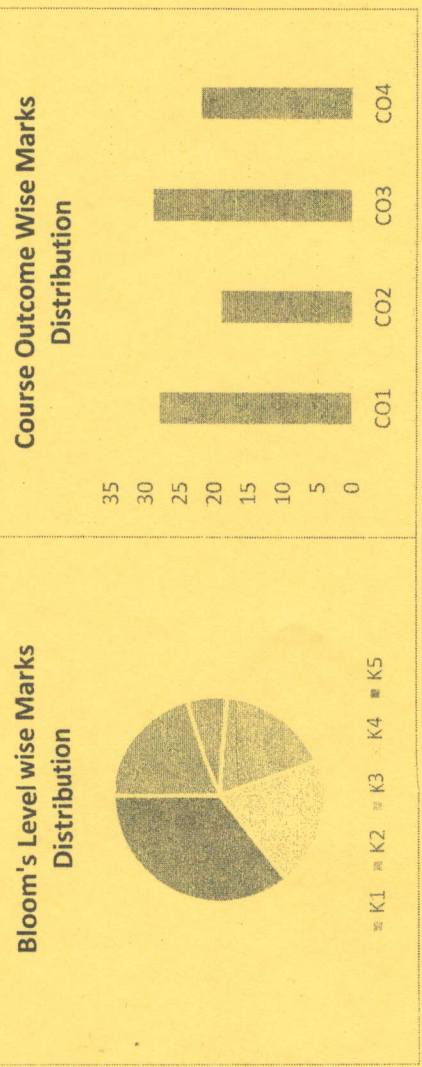
		END SEM EXAMINATION School of Engineering & IT	
Branch	Mechanical Engineering	Program	B.Tech
Subject Name	Process Planning & Cost Estimation	Semester	VIII
		Year	April 2024
Time: 3 Hour	• Start writing from 2nd page onwards; don't write on the 1st Page Backside • Answer all Questions of Section A (Compulsory) • 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 <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>		
Max. Marks : 70			
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. N1	QUESTIONS	Marks	COs
i	What are the functions of process planning?	2	CO1
ii	Write the approaches of process planning.	2	CO1
iii	What are the main process parameters that can influence the success of the machining?	2	CO2
iv	What do you understand by break-even Analysis?	2	CO2
v	List a few objectives of the cost estimation?	2	CO3
vi	What is meant by overhead expenses?	2	CO3
vii	A butt joint between two square metal plates of 250 x 250 cm is made using electric arc welding. If the rate of welding is 5metre/hr, calculate the time required to complete ten such welding operations. What are the various losses considered while calculating direct material cost for a casting?	2	CO4
viii	What is grinding? Differentiate between surface grinding and cylindrical grinding	2	CO1
x	What are the Purpose of chamfering and chamfering operations?	2	CO1

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

CO1	Upon completion of this course, the students will be able to use the concepts of process planning and cost estimation for various products
CO2	Describe the functions of production control, various production system, differe nt aspects of product development and break-even analysis.
CO3	Perform the analysis of problems in lack of product planning, quantity determination in batch production and analysis of process capabilities in a multi-product system.
CO4	Calculate the economic order quantity & economic lot size in inventory control.

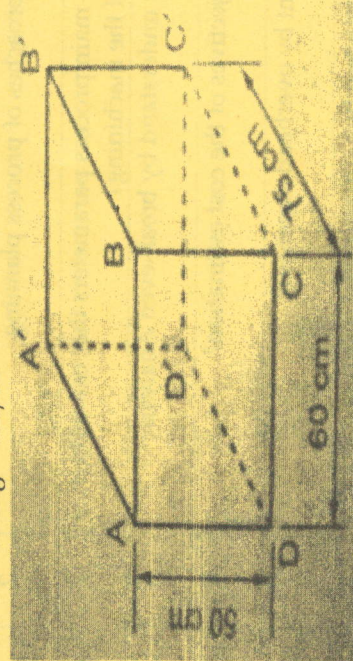
GRAFICAL REPRESENTATION



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

(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
2	Explain process planning activities in detail and documentation involved in preparation of process plan.	5	CO1	K4
3	What do you understand by CAPP? Explain in detail about the types CAPP and mention the benefits of CAPP.	5	CO1	K5
4	A 25 cm x 10 cm C.I surface is to be faced on a milling machine with a cutter of diameter of 15 cm and 16 teeth. If the cutting speed and feed are 55 m/min and 6 cm/min. respectively, determine the rpm of the cutter, feed/tooth and the milling time.	5	CO2	K5
5	List and explain in detail about the components of a job estimate?	5	CO3	K4
6	Difference between drilling, boring and reaming.	5	CO4	K3
7	An open water tank of size 75cm x 60cm x 50cm is made by gas welding from a 4 mm thick metallic sheet. Estimate the time require for welding a tank. Neglect other factors. Rate of welding = 5m/hr	5	CO4	K5





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

(Each question Carry 10 Marks)

Q. No.	QUESTIONS	Marks	COs	KL
8	Explain the various Process Selection Methods and general guide lines for process sequencing.	10	CO1	K4
9	Explain the marginal costing in detail.	10	CO2	K3
10	Name the various elements of cost. Explain each element in detail with examples.	10	CO1	K5

11	Find the time required for doing rough grinding of a 15cm long steel shaft to reduce its dia from 4 to 3.8 cm with the grinding wheel of 2cm face width. Assume cutting speed as 15 m/min and the depth of cut as 0.25 min.	10	CO4	K5
12	A square bar of 3 cm side and 25 cm length is to be hand forged into a hexagonal bar of side of 1.5 cm. Find length of the hexagonal bar ignoring metal losses. Density remains same.	10	CO3	K5

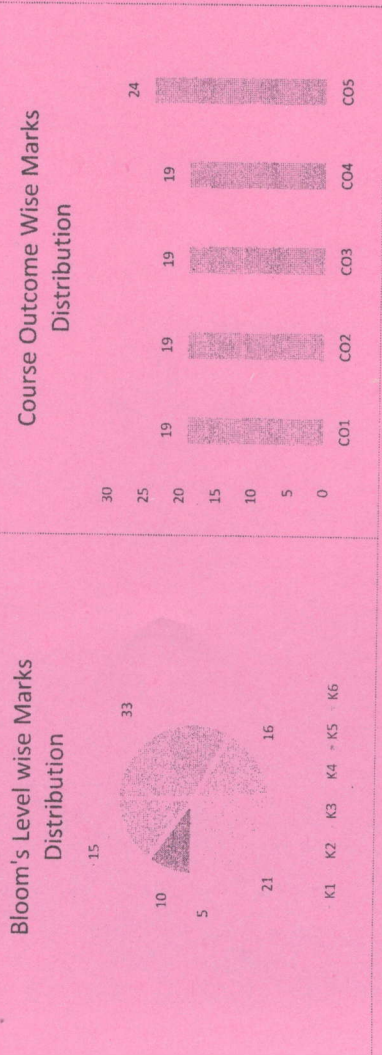
21/5/24 M SD

 ARKA JAIN University <small>Jharkhand</small>		 NAAC GRADE A <small>NATIONAL ASSOCIATION OF AMERICAN COLLEGES AND UNIVERSITIES</small>		END SEM EXAMINATION School of Engineering & IT	
Branch	Mechanical Engineering	Program	B. Tech	Semester	VIII
Subject Name	Automobile Engineering	Year	April 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 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>. 				
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]	Evaluate the suitability of different automobile chassis designs.
[CO2]	Understand efficient engine systems through advanced electronic and mechanical integration.
[CO3]	Analyse emission control with 3-way catalytic converters adhering to global standards.
[CO4]	Understand transmission mechanisms for diverse vehicle propulsion and operation systems.
[CO5]	Analyse steering mechanisms and braking systems for optimal vehicle control.

GRAFICAL REPRESENTATION



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

Q. N1	QUESTIONS	Marks	COs	KL	PO
i	Describe the various types of frames?	2	CO1	K1	PO2
ii	What are the benefits of four-wheel drives?	2	CO1	K2	PO1
iii	What are the advantages of CRDI system?	2	CO2	K1	PO2
iv	Define catalytic converter with its uses.	2	CO2	K2	PO3
v	State the role and importance of differential unit.	2	CO3	K3	PO1
vi	What are the classification of a clutch?	2	CO3	K1	PO2
vii	Describe the significance of Toe-In and Toe-Out Adjustments.	2	CO4	K3	PO2
viii	What are the Advantages of anti -lock brake system?	2	CO4	K1	PO3
ix	Define Necessity and Advantages of Compressed Natural Gas (CNG)?	2	CO5	K2	PO2
x	Explain the hybrid vehicle.	2	CO5	K3	PO1

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

(Each question Carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Describe BoF and UNI body construction of a Vehicle.	5	CO1	K4	PO2
3	Explain the working of Solex carburetor.	5	CO2	K3	PO3
4	Explain the working of centrifugal clutch with neat sketch.	5	CO3	K6	PO1
5	Sketch and explain various steering geometries.	5	CO4	K1	PO3
6	How methanol is produced? Explain and its usage in automobiles.	5	CO5	K1	PO1
7	How bio diesel is produced? Explain and its usage in automobiles.	5	CO5	K1	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 front engine rear wheel drive's salient features, advantage and disadvantages.	10	CO1	K5	PO1
9	Explain the key features and working principle of electronic ignition system.	10	CO2	K6	PO3
10	Explain the working of sliding mesh gear box with neat sketch.	10	CO3	K2	PO2
11	Explain the working principles of hydraulic brake with neat sketch.	10	CO4	K3	PO2
12	Explain the operation of hydrogen fuelled vehicle with neat sketch.	10	CO5	K1	PO1

04/05/2024 M 55

Branch	Mechanical Engineering	Program	B.Tech
Subject Name	Renewable Energy Technologies	Semester	VIII
		Year	April 2024

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 come 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

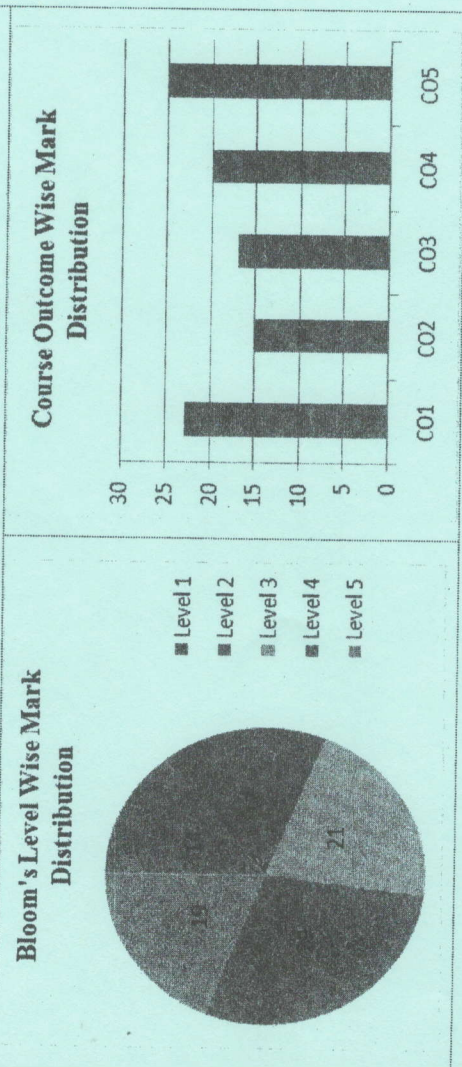
Section A (Each question Carry 02 Marks Q1-i to x) – 20 Marks

Q. N1	QUESTIONS	Mark s	COs	KL	PO
i	What do you mean by Biogas?	2	CO1	K1	PO1
ii	Define Tidal Energy.	2	CO5	K2	PO3
iii	What are the different types of current?	2	CO5	K3	PO5
iv	Define Geothermal Energy?	2	CO4	K1	PO1
v	List the types of wind turbines.	2	CO1	K4	PO2
vi	Define Energy.	2	CO1	K1	PO1
vii	Highlight the advantages of wind power.	2	CO1	K4	PO5
viii	What is the function of inverter?	2	CO1	K1	PO1
ix	What is a solar radiation?	2	CO1	K3	PO1
x	Coal is the example ofsources of energy.	2	CO1	K2	PO2

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

CO1	Maintain ocean thermal energy technologies
CO2	Maintain the optimised working of solar PV and CS power plants.
CO3	Maintain the optimised working of large wind power plants
CO4	Maintain the optimised working of small wind turbines.
CO5	Maintain the optimised working of biomass-based power plants.

GRAPHICAL REPRESENTATION



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

(Each question carry 5 Marks)

Q. No.	QUESTIONS	Marks	COs	KL	PO
2	Define Solar Panel. Classify them briefly.	5	CO4	K3	PO1
3	Explain the setup for wind mills with neat sketch.	5	CO2	K1	PO2
4	Elaborate the future prospects of solar energy in Indian market.	5	CO1	K2	PO3
5	Explain solar pond with diagram.	5	CO3	K1	PO2
6	What is difference between beam radiation and diffused radiation?	5	CO5	K1	PO5
7	Differentiate between impulse and reaction turbine.	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
8	Differentiate between conventional and non-conventional sources of energy. Discuss the advantages and disadvantages of renewable energy sources	10	CO1	K3	PO1
9	Explain the working principle, applications, advantages and disadvantages of solar dryers with neat diagram.	10	CO1	K4	PO1
10	Explain the process of generating power from Biomass. Draw the schematic diagram.	10	CO2	K5	PO3
11	Explain the different types of instruments used for solar radiation measurement.	10	CO2	K5	PO5
12	Describe the factors for site selection for wind power plant. Also explain the problem associated with it.	10	CO2	K1	PO3