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ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. /B.Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, APR / MAY 2025

INDUSTRIAL ENGINEERING
Semester VII (Honors Degree)
IE5021 & Supply Chain Risk & Resilience
(Regulation 2019)

Time:3hrs

Max.Marks: 100

CO1	To give exposure on risk management basics.
CO2	To introduce the risk management concepts related to supply chain
CO3	To identify and analyze the risk assessment in supply chain
CO4	To give awareness on resilient supply chain
CO5	To give acquaintance on business continuity management

BL – Bloom's Taxonomy Levels

(L1-Remembering, L2-Understanding, L3-Applying, L4-Analysing, L5-Evaluating, L6-Cr.eating)

PART- A(10x2=20Marks)
(Answer all Questions)

Q.No.	Questions	Marks	CO	BL
1	Define risk and list any two features of risk.	2	CO1	L1
2	Differentiate between risk and uncertainty with an example.	2	CO1	L2
3	What are the key steps involved in risk management in a supply chain?	2	CO2	L1
4	Explain how globalization contributes to supply chain risks.	2	CO2	L2
5	List any four types of risks in a supply chain.	2	CO3	L1
6	How can analyzing past events help in risk identification?	2	CO3	L2
7	What are the physical features of a resilient supply chain?	2	CO4	L1
8	Describe the principle of risk compensation in a resilient supply chain.	2	CO4	L2
9	What is Business Continuity Management (BCM)?	2	CO5	L1
10	Explain any two steps in Business Continuity Management.	2	CO5	L2

PART- B(5x 13=65Marks)
(Restrict to a maximum of 2 subdivisions)

Q.No.	Questions	Marks	CO	BL
11 (a)	Discuss the importance of risk management in decision-making with examples from manufacturing.	13	CO1	L3
OR				
11 (b)	Analyze a situation where decisions under risk, certainty, and uncertainty affect supply outcomes.	13	CO1	L4
OR				
12 (a)	Examine how emerging trends like e-business and outsourcing contribute to supply chain risks.	13	CO2	L4
12 (b)	Develop a framework to incorporate risk management principles in a globalized supply chain.	13	CO2	L4

13 (a)	Classify different types of supply chain risks and propose tools to measure and respond to them.	13	CO3	L4
OR				
13 (b)	Analyze a case of a real-life supply chain disruption and explain how risk identification could have minimized the impact.	13	CO3	L4
OR				
14 (a)	Design a resilient supply chain network for an FMCG company and explain the principles used.	13	CO4	L4
OR				
14 (b)	Critically evaluate how inter-organizational relationships influence resilience in supply chains.	13	CO4	L4
15 (a)	Explain the steps in Business Continuity Management and apply them to a crisis scenario in a logistics company.	13	CO5	L4
OR				
15 (b)	Evaluate the effectiveness of BCM practices during recent global supply chain disruptions (e.g., pandemic, geopolitical crisis).	13	CO5	L4

PART- C(1x 15=15Marks)
(Q.No.16 is compulsory)

Q.No.	Questions	Marks	CO	BL
16.	<p><i>GlobalTech Pvt. Ltd.</i> is a consumer electronics manufacturing company based in Chennai, India. It has grown rapidly over the last five years, thanks to its agile product designs and aggressive market expansion. To reduce costs and improve responsiveness, GlobalTech adopted global sourcing, outsourced logistics, and digitalized its procurement processes.</p> <p>In late 2023, the company faced multiple disruptions:</p> <ul style="list-style-type: none"> ● Port strikes in Europe delayed key electronic component shipments. ● A cyber-attack on their supplier's ERP system led to order processing failures. ● A geopolitical conflict increased raw material costs and led to demand forecasting errors. ● Internal communication gaps caused duplicated orders and stock-outs in certain markets. <p>The management is now concerned about the overall risk exposure and wants to adopt a more resilient supply chain strategy with a proper risk management framework.</p> <p>a) Identify and classify at least five types of risks that GlobalTech is facing. Indicate whether each is a strategic, operational, or financial risk. (5 Marks)</p> <p>b) Explain how the concepts of risk, uncertainty, and ignorance apply to this case. (5 Marks)</p> <p>c) Suggest two practical risk mitigation strategies aligned with those trends. (5 Marks)</p>	15	CO1	L6