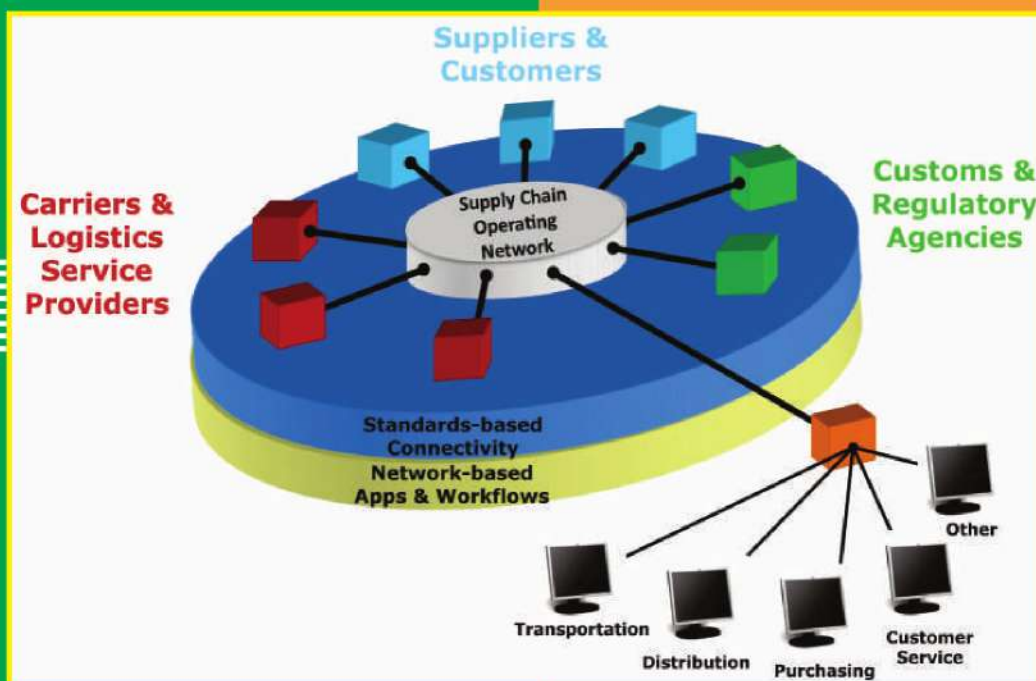




Logistics, Operation & Supply Chain Management



Class - XI



CENTRAL BOARD OF SECONDARY EDUCATION

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110092

नया आगाज़

आज समय की माँग पर
आगाज़ नया इक होगा
निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।

परिवर्तन नियम जीवन का
नियम अब नया बनेगा
अब परिणामों के भय से
नहीं बालक कोई डरेगा

निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।

बदले शिक्षा का स्वरूप
नई खिले आशा की धूप
अब किसी कोमल-से मन पर
कोई बोझ न होगा

निरंतर योग्यता के निर्णय से
परिणाम आकलन होगा।
नई राह पर चलकर मंज़िल को हमें पाना है
इस नए प्रयास को हमने सफल बनाना है
बेहतर शिक्षा से बदले देश, ऐसे इसे अपनाए
शिक्षक, शिक्षा और शिक्षित
बस आगे बढ़ते जाएँ
बस आगे बढ़ते जाएँ
बस आगे बढ़ते जाएँ.....





LOGISTICS, OPERATIONS & SUPPLY CHAIN MANAGEMENT-I

FOR
CLASS - XI



CENTRAL BOARD OF SECONDARY EDUCATION

2, Community Centre, Preet Vihar, Delhi-110092

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भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण 'प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

सामाजिक, आर्थिक और राजनैतिक न्याय,
विचार, अभिव्यक्ति, विश्वास, धर्म

और उपासना की स्वतंत्रता,
प्रतिष्ठा और अवसर की समता

प्राप्त कराने के लिए

तथा उन सब में व्यक्ति की गरिमा

¹और राष्ट्र की एकता और अखंडता

सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई० को एतद्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

1. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य” के स्थान पर प्रतिस्थापित।
2. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से “राष्ट्र की एकता” के स्थान पर प्रतिस्थापित।

भाग 4 क

मूल कर्तव्य

51 क. मूल कर्तव्य - भारत के प्रत्येक नागरिक का यह कर्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आह्वान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परीक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणिमात्र के प्रति दयाभाव रखे;
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- ¹(ट) यदि माता-पिता या संरक्षक हैं, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।

1. संविधान (छयासीवां संशोधन) अधिनियम, 2002 द्वारा प्रतिस्थापित।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a ¹**SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC** and to secure to all its citizens :

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the² unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do **HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.**

1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

THE CONSTITUTION OF INDIA

Chapter IV A

FUNDAMENTAL DUTIES

ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- ¹(k) to provide opportunities for education to his/her child or, as the case may be, ward between age of 6 and 14 years.

1. Subs, by the Constitution (Eighty-Sixth Amendment) Act. 2002.

Preface



With the ever changing world, the Transport Systems & Logistics Management industry has transformed from conventional transportation concept to as efficient managers using advanced technologies that can enhance the safety, security, sustainability and efficiency of their operations. The Transport Systems & Logistics Management in India has been receiving greater attention in the last few years with sustained growth of India's GDP.

Indian logistics industry is expected to grow at 15 to 20% per annum, reaching revenues of \$385 billion by 2015. Demand for focused supply chain services have been fueled by industries with a high propensity to outsource: automobiles, consumer packaged goods, hi tech, telecom and retail amongst others. Movement of basic commodities for both domestic consumption and export/import has led to increase in multi modal and bulk transportation and proliferation of ports and related services.

To address the problem of unskilled manpower across various industrial sectors, CBSE has undertaken the ambitious project of introducing competency based Vocational Education in its affiliated schools. Taking cue from this need, a new course on Transport Systems & Logistics Management is being launched that will help students to join the industry after Class XII or they can pursue higher education in this field.

The Board is grateful to the members of the Committee of Course for their advice, guidance and total commitment towards development of this course. We are indeed indebted to these academic advisors who have lent us the benefit of their rich and insightful experience. I would like to appreciate Vocational Education Cell, CBSE; for coordinating and successfully completing the work.

Vineet Joshi
Chairman, CBSE





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GENERAL INSTRUCTIONS TO THE STUDENTS

1. As the paper Logistics, Operations and Supply Chain Management – I provides the basic introductory information, the students should understand the concepts clearly, failing which, it would be difficult to follow the paper of Logistics, Operations and Supply Chain Management – II.
2. The students are expected to keep in mind the concepts discussed in Unit – I of this paper, while studying the Unit – II of Logistics, Operations and Supply Chain Management – II. Further, Unit – III of this paper forms basis for better understanding of Unit – III of Logistics, operations and supply chain management – II.
3. The students are expected to attend the field visits to different types of warehouses as explained so as to understand practically the fine distinctions. Further, the students are advised to visit different transport offices, so as to understand the concepts of freight movement, freight costs, network planning, vehicle scheduling. Moreover, students are advised to visit various firms/companies and understand about pragmatic approach to inventory management and supply chain management aspects.
4. Before proceeding to field visits, each student is advised to go through the relevant concepts discussed in the Guide Book, so that it would be easy to grasp the ongoing practical aspects. While, practically observing the day to day operations relating to transport, warehousing, inventory and supply chain management issues, the students are advised to interact with the concerned officials/executives relating to working of the system.
5. During the field visits, each student is advised to note down the important points of observation and discussion, so that the same can be shared in the classroom for better exposure and common benefit.

MODULE OBJECTIVES

LOGISTICS, OPERATIONS AND SUPPLY CHAIN MANAGEMENT - I

S. No.	Unit/Chapter Name	Theory	Key Learning Objectives
1	Elements of Logistics, Operations and Supply Chain Management	20 hrs	● Concept and evolution of logistics, logistics functions ● Distinction between IBL and OBL ● Concept of warehouse and distinction between types and functions ● Concept of inventory management ● Supply chain management concept ● Refrigerator and cold chain container movement
2	Multimodal modal Transport System	20 hrs	● Meaning of multimodal transport system ● Features and advantages of multimodal transport system ● Distinction between various types of intermodal movements and intermodal relationships ● About multimodal carriers ● Importance of international movements
3	Freight Management and Material Handling	30 hrs	● Concept of network planning, route management and vehicle scheduling ● About hub and spoke model ● Distinction between fixed costs and variable costs and costs involved in various means of transportation. ● Usages of storage facility and functions of storage ● Safety methods to be followed while storing goods ● Staking of goods and distinction between unloading and handling of goods

4	Safety in Transportation & Traffic Regulation	30 hrs	● Importance of safety in transportation ● Factors responsible for air accidents ● Equipment used in navigation & their significance, various landing categories ● Classification of railway accidents, causes of accidents and reasons for derailments ● Safety measures to be adopted & method of accident management ● Causes of road accidents and steps to be taken in case of accidents ● Safe shifting and storage of Cargo ● Four phases of disaster management ● Accident Management, traffic management and regulation
5	ISO in Logistics and Occupational Hazards	30 hrs	● Concept of ISO in logistics ● Nature, formulation and quality control cycle. ● Meaning of green logistics and paradoxical aspects green logistics. ● Government intervention and legislation and other aspects to improve environment. ● Various health hazards and safety measures to be taken