KUMARAGURU
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Register Number:……

M.E DEGREE EXAMINATIONS: JUNE 2018

(Regulation 2015)

Second Semester

INDUSTRIAL ENGINEERING

P15IET201**:** Supply Chain Management

COURSE OUTCOMES

CO1: Define logistics and identify the factors affecting logistics and basic tasks of SC.

CO2: Outline PLC grid and its importance and describe the functional roles in SC.

CO3: Describe economies of scale in SC and compute optimal level of product availability.

CO4: Identify factors affecting transportation decisions and discuss transportation models.

CO5: Express factors influencing SC coordination and indicate the impact of e business.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. **Assertion (A):** Supply chain is used to describe the collaboration of various entities to help move products and services from suppliers to customers often including suppliers of raw materials, producers of final products and the end-user, or customer. CO1 [K_4]

   Reason (R): Purchasing is that part of supply chain with the objective of determining which department is to arrange the supply of materials, spare parts and services or semi-finished goods, required by the organisation to produce the desired product, from some agency or source outside the organisation.

   a) Both A and R are Individually true and R is the correct explanation of A
   b) Both A and R are Individually true but R is not the correct explanation of A
   c) A is true but R is false
   d) A is false but R is true

2. ___ process are initiated by a customer order, whereas ____ process are initiated and performed in anticipation of customer CO1 [K_1]

   a) Supply, Purchase
   b) Pull, Push
   c) Purchase, Supply
   d) Push, Pull

3. Project sponsor is a part of CO2 [K_1]

   a) Steering committee
   b) Design team
   c) Front line team
   d) Back line team

4. Match List I with List II CO4 [K_4]

List I	List II
A. Logistics	i. 2000
B. Inventory Management	ii. 1990
C. Supply Chain Management	iii. 1945
D. e business	iv.1980

	A	B	C	D
a)	ii	I	iii	iv
b)	iii	iv	ii	i
c)	ii	Iv	iii	i
d)	iii	I	ii	Iv

5. **Assertion (A):** Distribution occurs between every pain in the supply chain and is the key driver of supply chain profitability CO4 [K_L]

Reason (R): Distribution accounts to about 80% of manufacturing cost

a) Both A and R are Individually true and R is the correct explanation of A
b) Both A and R are Individually true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

6. PDCA stands for Plan Do Check Act and was developed by CO2 [K_1]

a) Poirier
b) Feigenbaum
c) Robert Hughes
d) Edwards Deming

7. Given following modes of building trust and cooperation, series of interactions over a period based contracting and formal signing contracting will fall under CO5 [K_3]

1.Process based 2.Product based 3.Deterrence based 4. System based

a) 1,3
b) 1,4
c) 1,2
d) 2,3

8. Sharing control charts across the Supply chain builds CO5 [K_4]

a) Inventory
b) Trust
c) Technology
d) Infrastructure

9. Sales force incentives and lack of information sharing can be classified under CO5 [K_1]

a) Operational and Behavioural obstacles
b) Pricing and Operational obstacles
c) Incentive and Information processing obstacles
d) Pricing and Information processing obstacles

10. Consider the following managerial levers to achieve coordination. CO5 [K_2]

1. Improving information accuracy.
2. Improving operational performance.
3. Designing pricing strategies to stabilize orders.
4. Aligning of goals and incentives.
5. Building strategic partnerships and trust.

Which of the sequence is correct?

a) 5-2-3-4-1 b) 1-3-5-2-4

c) 3-5-4-2-1 d) 4-1-2-3-5

PART B (10 x 2 = 20 Marks)

11.	Spell basic tasks of a supply chain.	CO1	[K_1]
12.	What are core skills?	CO1	[K_1]
13.	Which companies can be termed as also ran companies?	CO2	[K_1]
14.	Summarize the benefits of CPC.	CO2	[K_2]
15.	Recall the mathematical model for EOQ.	CO3	[K_1]
16.	Distinguish product fill rate and order fill rate.	CO3	[K_4]
17.	Define cross docking.	CO4	[K_1]
18.	List the various costs associated in logistics.	CO4	[K_4]
19.	Explain Bull whip effect.	CO5	[K_2]
20.	Categorize B2B and B2C.	CO5	[K_4]

PART C (6 x 5 = 30 Marks)

21.	Rephrase characteristics of a modular company.	CO1	[K_1]
22.	Build the stages involved in manufacturing strategy.	CO2	[K_3]
23.	Recognize the importance of economies of scale to exploit quantity discounts and categorize the prominent models.	CO3	[K_3]
24.	What is cycle inventory? Given the batch size of an order as 1000 and demand per unit time as 100 units/day, calculate cycle inventory and Average flow time.	CO3	[K_2]
25.	Outline the various transportation modes with suitable cases.	CO4	[K_2]
26.	Organize the major obstacles to Supply chain coordination.	CO5	[K_3]

Answer any FOUR Questions
PART D (4 x 10 = 40 Marks)

27. Examine the various factors affecting supply process. CO1 [K_4]

28. Model PLC curve and correlate the curve with respect to products market position. CO2 [K_3]

29. What is product availability? Comment on factors affecting the same. CO3 [K_1]

30. Hapag Loyd transportation has orders from 13 different customers. The location with respect to various customers on the grid and their order size is shown in table. The transportation company has 4 trucks each capable of carrying 200 units. Using savings matrix method, analyze suitable delivery schedules and find the minimum distance travelled. CO4 [K_4]

	X coordinate	Y coordinate	Order size
Warehouse	0	0	-
Customer 1	0	12	48
Customer 2	6	5	36
Customer 3	7	15	43
Customer 4	9	12	92
Customer 5	15	3	57
Customer 6	20	0	16
Customer 7	17	-2	56
Customer 8	7	-4	30
Customer 9	1	-6	57
Customer 10	15	-6	47
Customer 11	20	-7	91
Customer 12	7	-9	55
Customer 13	2	-15	38

31. Cite examples of e-business firms and survey the impact of e-business on responsiveness and efficiency. CO5 [K_4]

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