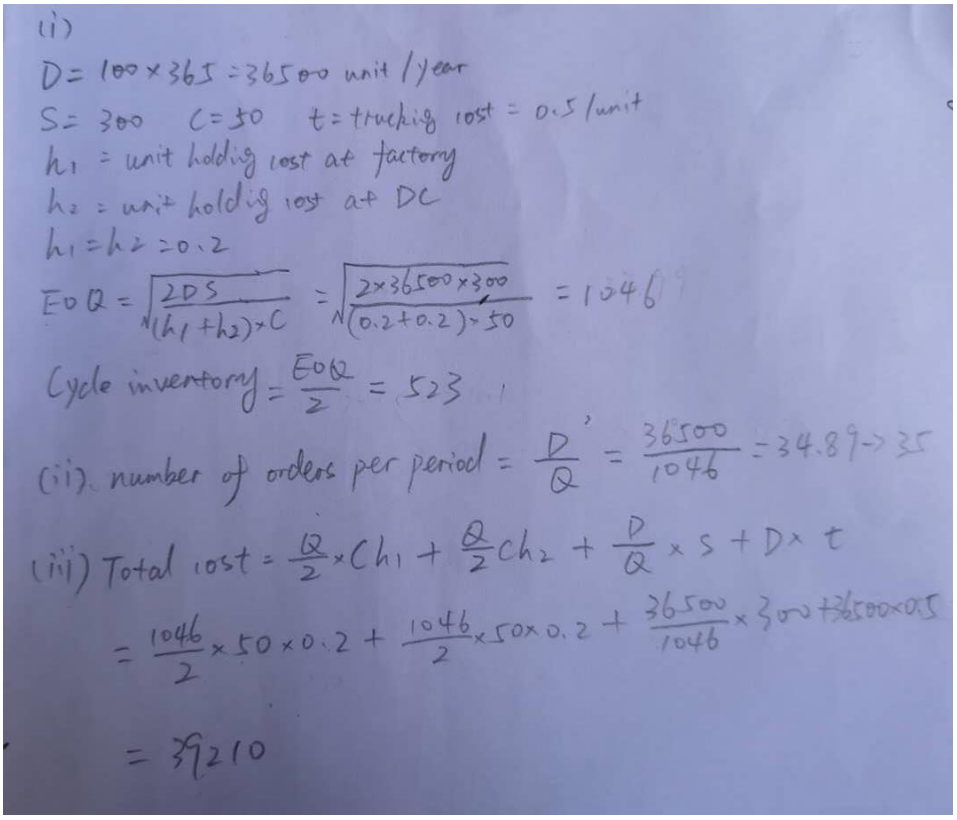
Signature : Li Qingyao

Q1.



Q2.

(a)

1. Two-Part Tariff: Supplier sells to retailer at cost $C_R = C_S$ but charges its entire profits P as a flat upfront fee
   - C_R= retailer's cost (price manufacturer charges retailer)
   - C_S= production cost of manufacturer

2. Revenue Sharing Agreement:
   1) Supplier set lower wholesale price
   2) Given lower price, retailer orders more since cost of overstock gets lower which also increase in unexpected supply chain profits

3) Supplier gains back by (i) selling more and (ii) sharing a fraction of each unit sold (revenue sharing)

3. Similarity:
   1) Both realized the coordination of supply chain activity between supplier and seller to achieve better supply chain efficiency, therefore improve the profit of both seller and buyer.
   2) Both tend to set optimal selling price to final customer to induce more demand from customers→more sell
   3) Each party is expected not to be worse off than before; at least one party is expected to be better off than before

4. Difference:
   1) The earning for the supplier in Two-Part Tariff is a flat upfront fee (one sum), while in Revenue Sharing Agreement is depend on the earnings of each units.
   2) Two-Part Tariff achieve supply chain efficiency by reduce double-marginalization while Revenue Sharing Agreement by sharing revenue.
   3) Revenue Sharing Agreement shall be more focus on information transparency

(b) No,

"Industrial clock speed" increases in downstream direction

1. As we move closer to consumers, there are more pressures to churn out new product offerings and advance its technologies to keep up with competition to fulfill evolving customer preferences
2. Companies rise and fall rapidly (e.g., Nokia) due to fast changing environment.

(c) no

1. As a manufacturer, Bullwhip Effect impact on its supplier: Larger variability at supplier

1) Downsizing and layoffs of skilled workforce in times of depressed demand. Some may not even survive downturns

2) Downsizing makes it more difficult to meet manufactuerer's demand when upturn comes.

2. Technological dependency on suppliers

Upstream suppliers may hold critical capability for supply chain

1) failure of a critical supplier results in loss of competitive advantage of chain

2) e.g., loss of technological capabilities, skilled workforce

3. Therefore, it's crucial to "protect" such suppliers

Example of reducing impact in times of downturns

Boeing and Milacron (machine tool supplier): In downturns, Boeing offers Milacron special projects in R&D in producing more efficient machines

(d)

1. There exist market segments in this scenario because customers perceive value of product/service differently in different segments. Prices must be set with presence of barriers such that the segment willing to pay more is not able to pay at lower price. The trucking company can artificially create barriers between segments, such as make service level low for cheap service
2. Demand is specific month has Seasonal high demand. To cater for lack of capacity, Managerial tactics could be lower price in off-peak periods to shifts some demand from peak period such as transport service providers practice differential pricing for different months.
3. As there are always last-minute cancellation, it is wasted of resource if not used. RM tactic: could be Overbooking and determine how much allowed for overbooking by reviewing historical data; if there is no cancellation sometimes, the company could compensate the customer or apply expedite transportation. Overbooking Accept orders more than capacity to account for cancellations. While not directly related to price, it can be an important part of RM it involves capacity allocation (setting capacity limits for each booking class)

4. As the truck company is more likely to have fixed capacity, it can apply two kinds of market contract: Bulk Contract (Opt for long-term contract) and Spot Market (Purchase smaller quantities at higher price). This means one option is transportation service contracted for long term for large volume at a discount, as the customer book early to receive a lower price or get space. Another option is customer prefer flexibility to book with short notice, then they will receive immediate service to transport smaller amounts at higher price. The company needs to decide on Price for each segment and Amount of trucks reserved for spot market to avoid "Spoilage" and "Spill".

Q3.

(a) what is push-pull system:

1. Push/pull view: processes in a supply chain are divided into two categories depending on whether they are executed in response to a customer order (pull) or in anticipation of a customer order (push)
2. Combined approach: a system that has the advantages of both systems

    1) For a combined approach, it is a shift from a Push System, of which decisions are based on forecast, to a Push-Pull System, of which initial portion of the supply chain is replenished based on forecasts (For example: parts inventory may be replenished based on anticipation of parts order), and Final supply chain stages based on actual customer demand (For example: assembly may base on actual orders)

3. Example: Consider Two PC Manufacturers
    a) Build to Stock: A traditional push system
        a. Forecast demand
        b. Buys components
        c. Assembles computers
        d. Observes demand and meets demand if possible.
    b) Build to order: A push-pull system.

a. Forecast demand

b. Buys components

c. Observes demand

d. Assembles computers

e. Meets demand

(b) Benefit of push-pull system:

1. Pull system
   1) Execution is demand driven
   2) Production and distribution coordinated with known demand
   3) Firms respond to specific orders
   4) The problems with pull system?
      a) Harder to leverage economies of scale
      b) Doesn't work in all cases
2. The push-pull system takes advantage of the rules of forecasting:
   1) Forecasts are always wrong
   2) The longer the forecast horizon the worst is the forecast

Q4. (a)

(i)

1) Customer service
2) Demand forecasting
3) Order processing

4) Procurement

5) Material handling

6) Inventory management (control)

7) Plant and warehouse site selection

8) Warehousing and storage

9) Packaging

10) Traffic and transportation

11) Logistics (Distribution) communications

12) Parts and service support

13) Reverse logistics.

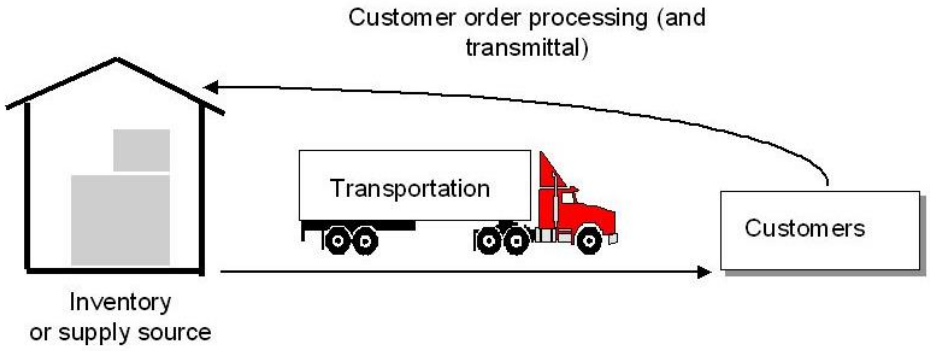
14) Return goods handling

(ii)

(1) Discuss what are the critical customer service activities?

(A) The critical loop

1. The critical loop
   1) either contribute most to the total cost of logistics
   2) or are essential to the effective coordination and completion of the logistics task.
   Critical customer service loop:
2. Customer service is the output of the logistics system.
3. It involves getting the right product to the right customer at the right place, in the right condition and at the right time, at the lowest total cost possible. 5 rights
4. Key activities are on the critical loop



(B) Key Activities/Processes: Customer service. (critical customer service activities) *

1) Customer service has been defined as a customer-oriented philosophy which integrates and manages all elements of the customer interface within a predetermined optimum cost-service mix.
2) Customer service is the output of the logistics system.
3) It involves getting the right product to the right customer at the right place, in the right condition and at the right time, at the lowest total cost possible. 6
4) Good customer service supports customer satisfaction, which is the output of the entire marketing process
5) Customer service standards:
    a) Set the level of output and degree of readiness to which the logistics system must respond.
    b) Logistics costs increase in proportion to the level of customer service provided, such that setting the standards for service also affects the logistics costs to support that level of service.
    c) Setting very high service requirements can force logistics costs to exceedingly high levels.

(b)

What are three ways in which Lean and quality are related?*

Jit quality: Strong relationship

1. Quality relates to JIT:

1) JIT cuts the cost of obtaining good quality because JIT exposes poor quality.
2) This saving occurs because scrap, rework, inventory investment, and damage costs are buried in inventory.
3) JIT forces down inventory; therefore, fewer bad units are produced and fewer units must be reworked. Rework is more expensive. One of Jit method is when there's problem, fix it immediately, this is the theory but may not be very practical
4) In short, whereas inventory hides bad quality, JIT immediately exposes it

2. JIT improves quality:
    1) Because lead times are shorter, quality problems are exposed sooner
    2) As JIT shrinks queues and lead time, it keeps evidence of error fresh and limits the number of potential sources of error.
    3) In effect, JIT creates an early warning system for quality problems so that fewer bad units are produced and feedback is immediate
    4) This advantage can accrue both within the firm and with goods received from outside vendors
3. better, easier-to-use:
    1) Better quality means fewer buffers and allows simpler JIT systems to be used, therefore a better, easier-to-use JIT system Fewer buffer, less quality problem
    2) Often the purpose of keeping inventory is to protect against unreliable quality.
    3) If consistent quality exists, JIT allows firms to reduce all costs associated with inventory

4. JIT Quality Tactics
    1) Use statistical process control Empower employees
    2) Build fail-safe methods (poka-yoke, checklists, etc.)
    3) Expose poor quality with small lot JIT
    4) Provide immediate feedback

Q5. (a)

Benefits of Effective Sourcing Decisions

1. Better economies of scale
2. Higher quality and lower cost
3. Reduced the overall cost of purchasing
4. Lower purchase price through the use of auctions
5. Design collaboration resulting in easier manufacturing and distribution, lower overall costs
6. Facilitate coordination with the supplier and improve forecasting and planning, lower inventories, improved matching of supply and demand
7. Appropriate sharing of risk and benefits can result in higher profits for both the supplier and the buyer

(b)

1. Tier 1:
    1) Container line offers comprehensive Global Logistics Services
    2) Acquire logistics companies in key markets/sectors in order to more rapidly grow this part of their business, plus develop IT capabilities.
    3) Characteristic:
        a) Carrier provides almost any logistics service demanded
        b) Logistics services provided virtually anywhere in the world
        c) Logistics service revenues exceed $3 billion per annum
        d) Logistics income amounts to 20-40 per cent of ocean transport income
    4) Carriers: Maersk Line; APL; NYK

2. Tier 2:
    1) Container line offers Comprehensive Regional Logistics Services
    2) Service Characteristics/ Scope:
        a) Carrier provides wide range of logistics services

b) Logistics services provided mainly in major regions
c) Logistics service revenues between $1-3 billion per annum
d) Logistics income between 10-20 per cent of ocean transport income

3) Carriers: Cosco, OOCL MOL; K Line:

3. Tier 3 Service:
   1) Container line offers Restricted/Limited Logistics Service
   2) Characteristics/ Scope:
      a) Carrier provides restricted/basic logistics services
      b) Logistics service turnover under $1 billion per annum
      c) Logistics income below 10 per cent of ocean transport income
   3) Carrier: Evergreen, CMA-CGM, Hanjin, Yang Ming, Hamburg Sud; PIL; MSC, CSCL, CSAV, UASC, HMM; HLCL, Zim
4. Tier 2 and Tier 3:
   a) may have follow a similar strategy;
   b) organic growth from a low base will take much longer to reach a given level, with the necessary supply chain management expertise within the line.