

INDIAN MARITIME UNIVERSITY
(A Central University, Govt. of India)
End Semester Examinations –June/July 2019
Semester-IV

M.B.A
(International Transportation & Logistics Management)
Transport Economics and Optimisation (PG22T2401)

Date: 10.06.2019
Time: 3 Hrs

Max Marks :60
Pass Marks: 30

PART-A

(Answer all the questions)

12 X 1 = 12

1. The effect of a change in the fares or rates of one operator on the demand for the services of the other
 - a. Price elasticity of demand
 - b. Income elasticity of demand
 - c. Cross price elasticity of demand
 - d. Elasticity of supply
2. An increase on transportation fare from Rs.6 to Rs 8 led to a reduction in the no. of passengers from 8000 to 4000. Find the ep
 - a. -1.5
 - b. -2
 - c. -.5
 - d. -2.5
3. _____ are the amounts of money expenditure incurred by individuals and operators in the provision of different services demanded by the market.
 - a. Public cost
 - b. Private cost
 - c. Marginal cost
 - d. Total cost
4. Which among the following is a fixed cost of operating bus transport?
 - a. Rent
 - b. Fuel cost
 - c. Cost of tyres
 - d. Vehicle servicing cost
5. Which among the following is not a factor under the quality of service of a mode of transportation?
 - a. Reliability
 - b. Comfort
 - c. safety
 - d. Income of the consumer

6. The product of passengers carried and the distance over which they are carried
 - a. Revenue tonne kms
 - b. Revenue passenger kms
 - c. Available seat kms
 - d. Average daily utilization
7. Knapsack problem are solved with
 - a. Linear programming approach
 - b. Vogel's approximation method
 - c. Big M method
 - d. Dynamic programming model
8. Travelling sales man problem is
 - a. A special case of assignment problem
 - b. Used for allocating different salesman to different territories
 - c. Used for selecting salesman for different products
 - d. Used to maximize distance travelled by salesman
9. At EOQ level of ordering inventory
 - a. Inventory holding cost < ordering cost
 - b. Inventory holding cost > ordering cost
 - c. Inventory holding cost = ordering cost
 - d. Inventory holding cost + ordering cost = cost of the item
10. Bin packing problems are used
 - a. In sequencing many jobs at job shop
 - b. In deciding number of work stations in job shop
 - c. In loading trucks based on weight constraint
 - d. In sequencing a single job in many machines
11. Transportation model is a special case of
 - a. Inventory model
 - b. Linear programming model
 - c. Replacement analysis
 - d. None of the above
12. A company consumes a particular product at an average of 3000 units/year. It costs 450 to place an order and holding cost is 30 per unit per year, then EOQ is
 - a. 100
 - b. 300
 - c. 150
 - d. 300

PART-B

(Answer any five questions out of seven)

5 X 4 = 20

13. How price discrimination is different from product differentiation?
14. Explain solutions for low profitability and loss of market share in transportation
15. What are the important variables to be considered while measuring the efficiency and performance of bus operations?

16. Explain different methods of storing inventory. Indicate how JIT concept evolved from single bin method.
17. Determine the optimum replacement period of an equipment which costs Rs.10,000. Operating cost of Rs.1500 for first year increases by Rs.500 every year and resale value is Rs. 6000 for the first year decreasing by Rs.1000 every year.
18. How do we measure the productivity and efficiency under the airline industry?
19. What do you mean by the cost based pricing followed in transportation sector?

PART-C

(Question No 20 is compulsory and any three questions to be answered from the remaining) 4 x 7 = 28

20. Why does one say that the peak demand is one of the serious issues in transportation? What strategies are to be adopted by operators to address this critical issue?
21. A retailer has to supply 400 units of products every Friday to his customers. He gets the product at Rs 50/ unit from manufacturer. The cost of ordering and transportation is Rs75/order the cost of carrying inventory is 7.5% /year of the cost of the product. Calculate a) economic batch size b) total optimum cost including the cost of purchase /week c) total weekly profit if the item is sold for Rs55/unit
22. What measures are to be adopted to address the major bottlenecks of transport sector in urban India?
23. A firm owns facilities at 7 places. It has factories at A, B and C with daily output of 600, 400 and 300 units respectively. It has warehouses at places P, Q, R and S with daily requirements 230, 200, 450 and 420 units respectively. Per unit shipping costs on different route combinations are given below. Derive an optimal strategy of transportation of goods from factories to warehouse at optimal cost.

From	To warehouse (Freight cost /unit)			
	P	Q	R	S
A	12	10	12	13
B	7	11	8	14
C	6	16	11	7

24. A trip from Chandigarh to Delhi takes 6 hours by bus. Buses starting from Chandigarh are C1, C2, C3, C4, at 6 a.m., 8 a.m., 2 p.m. and 6 p.m. respectively and buses starting from Delhi are D1, D2, D3, D4, at 7 a.m., 9 a.m., 3 p.m. and 7 p.m. respectively.

There is a constraint that every crew should be provided at least 4 hours of rest before commencing return trip. The crew should be based either in Delhi or Chandigarh so that waiting time away from home is minimum. Find an optimal pair.

25. Explain the important factors determining demand for transportation. Define price elasticity of demand and cross elasticity of demand in the transport sector with appropriate examples.