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PAST PAPERS

Faculty	Department / Section/Division
Not Applicable	Learning Resource Centre

Past Papers

Faculty of Management, Humanities & social Sciences
Department of Management and Business Studies

BMgt. (Hons) in Supply Chain Management
(Year 2 – Semester II)

2019 - 2022

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Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II

REPEAT EXAMINATION

Procurement Management – BSCM2409

- This paper consists of EIGHT questions on FOUR (04) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.08.22 Pass mark: 40% Time: 03 Hours

Question 01 (Compulsory)

"A" is the process of conducting research on a company and its operating environment to formulate a strategy. "A" involves several common factors. They are identifying and evaluating data relevant to the company's strategy, defining the internal and external environments to be analyzed & using several analytical methods such as Porter's five forces analysis, SWOT analysis & Value Chain Analysis.

(a) Name the process "A". (05 Marks)

(b) Explain how to develop a procurement strategy. (15 Marks)

Question 02

Procurement is a complex discipline spanning many interrelated activities. And also, it is an umbrella term that includes several core business functions and should form a key role in corporate strategy.

(a) Briefly explain the difference of procurement & purchasing in four or five sentences. (05 Marks)

(b) Explain any three of the '5 rights of procurement' including how each might be achieved. (15 Marks)

Question 03

Public procurement creates opportunities and challenges equally the programmes and projects. Usually, when launching an acquisition, we deal with questions such as which elements of the public contracts we need to handle carefully to avoid errors.

(a) Define the term "public procurement". (05 Marks)

(b) Illustrate Firm-Fixed-Price contract (FFP), Time and Material contract (T&M) & Costs Plus Incentive Fee contract (CPIF). (15 Marks)

Question 04

Procurement isn't just about delivering materials on-time, with less risk and at less cost. Social responsibility is now an integral part of the procurement landscape.

(a) Briefly explain the scope of Corporate Social Responsibility (CSR). (05 Marks)

(b) Discuss of the drivers for Socially Responsible Procurement. (15 Marks)

Question 05

Speed is vital to global sourcing and shipping operations, but it requires planning and preparation. Inadequate preparation is the most preventable and costly cause of shipping inefficiency. Planning for all the contingencies that impact global sourcing, particularly contract terms, is essential. INCOTERMS help avoid the confusion created by varied interpretations of the rules in different countries. They specify the exporting seller's and

importing buyer's obligations regarding carriage, risk, and costs, and establish basic transport and delivery terms.

(a) INCOTERMS can be segregated into two different types based on method of freight payment. Name them and give two examples per each. (05 Marks)

(b) Explain why international sourcing is needed. (15 Marks)

Question 06

Capital equipment has been defined as one of the sub classes of the fixed asset category that includes industrial and office machinery and tools, transportation equipment, furniture and others.

(a) Name three important characteristics of capital equipment. (05 Marks)

(b) Discuss the risks facing when acquiring capital equipment. (15 Marks)

Question 07

The buyer doesn't look at the price the same way the seller does. To a buyer price is an element in the total cost of ownership.

(a) What is a right price as per a buyer's point of view? (05 Marks)

(b) Illustrate price analysis and cost analysis separately. (15 Marks)

Question 08

Write short notes for selected four topics.

(a) Problems in International Sourcing

(b) Types of Capital Equipment

(c) Negotiation Strategies

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(d) Procurement Auction

(e) Why does commodity prices fluctuate?

(f) Attributes of a Good Supplier

(5*4 Marks)

----------END OF THE QUESTION PAPER----------

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Year 2 Semester II
REPEAT EXAMINATION
Marketing Management – BSCM2311

- This paper consists of EIGHT questions on FIVE (05) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.08.19 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

Bembridge Airport

Bembridge Airport is on the eastern end of the Isle of Wight, a small island located off the south coast of England near the large towns of Portsmouth and Southampton. The Isle of Wight has been designated an Area of Outstanding Natural Beauty. It has agricultural and tourism industries, but tourism is its main business activity.

Bembridge Airport's Importance to the Island's Economy

Bembridge Airport is one of two airfields functioning on the island, the other being a grass airstrip at nearby Sandown. Bembridge has a tarmac runway, but this is not large enough to handle commercial passenger aircraft, so the airport's main trade comes from light aircraft. The airfield also has a gliding club on its south side and offers facilities for groups of pilots. Pilots fly into Bembridge to sample the local seafood, enjoy walks along the cliffs, and to see the island from the air. Relatively few pilots stay overnight, but the airfield can accommodate visiting aircraft and provide parking space if necessary.

In common with other small airfields, Bembridge has a wide variety of different enterprises on-site. It has a cafe (which is popular with non-flying visitors as well as pilots), it offers hangar space for private aircraft, and it encourages private pilots to fly in to visit the picturesque island itself. Fuel sales offer another source of revenue. Bembridge also promotes local events such as the Isle of Wight Festival.

Local Competition

Competition can be strong, with pilots having a lot of choices of where to fly to, and even though the cost of the flight might run into hundreds of pounds, a five-pound difference in the landing fee might be enough to make a pilot choose another airfield.

Rival airfield Sandown represents direct competition. Sandown has a grass runway and can therefore be adversely affected by heavy rain. It also has fewer facilities, especially after a disastrous fire destroyed its restaurant and clubroom in 2007. However, Sandown hosts the annual Spamfield Fly-in for microlight aircraft, a major event in the UK aviation calendar. Microlights are cheap to buy and operate, so the sport attracts many people with relatively low incomes. Spamfield charges around £10 per aircraft to land, so Bembridge competes by charging microlights only £7.50. Larger aircraft pay progressively greater amounts, but fees remain relatively low.

Sources of Potential Problems

People living near airfields often complain about the noise from aircraft, and some airfields have been forced to close because of this. Flying is seasonal and extremely weather-dependent. Bad weather means that there will be no visiting aircraft, consequently no landing fees and few people using the restaurant. Civil Aviation safety regulations are often onerous. Despite this, Bembridge still manages to be a popular and successful destination.

The above data has been based on a real-life situation, but details have been changed for assessment purposes and may not be an accurate reflection of reported news.

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Source – CIM Past papers – Marketing Essentials – March 2011

You are required to produce a SWOT analysis for Bembridge Airport using the information in the given case study. (20 Marks)

Question 02

a) With reference to the consumer buyer decision process, explain the five (05) stages a consumer may go through in buying an apartment (10 Marks)
b) Explain two (02) buyer characteristics that could influence their behavior in buying an apartment. (10 Marks)

Question 03

As a Marketing Manager you might expect to have a well-resourced and managed Marketing Information System (MIS). Though, some information is available but neither the form nor the accessibility of the data is entirely suitable for marketing purposes. Using a company of your choice, prepare a brief report for the IT Manager that;

a) Explain the importance of Marketing Intelligence as a source of gathering data for MIS and list four (04) different sources for gathering marketing intelligence. (08 Marks)
b) Briefly explain the process for undertaking marketing research to collect customer information. (12 Marks)

Question 04

Segmentation is fundamental to marketing and implies that distinct groups of customers should be managed in different ways. Using examples, for organisations of your choice,

a) Explain three suitable bases that can be used to segment the market (15 Marks)

b) Finding point of differentiation (Value differences) is very important to position the company products in consumer's mind. Explain a suitable point of differentiation for the organization that you have selected.

(05 Marks)

Question 05

You work in the marketing department of a small and local shipping line. You have been asked by your manager to provide a briefing paper, that explain the elements of extended marketing mix (7Ss) in the context of the shipping line.

(20 Marks)

Question 06

You work for a local manufacturer of confectionery and the company planning to enter the business of dairy production. You have been asked by the director to produce a report, that:

a) Explain the brand elements they need to consider when developing a brand.

(10 Marks)

b) Using examples, discuss two strategic alternatives that the company can consider for brand development. (10 Marks)

Question 07

You are the Marketing Director of a manufacturer of high quality bathroom equipment, but sales and profits have been declining for some time. You have been asked to draw up a marketing plan that enable the company to identify and develop into new growth sectors. (20 Marks)

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Question 08

a) "Unlike physical products, intangible products cannot be seen, tasted, felt, heard, or smelled before they are purchased. Therefore, almost all services contain some physical elements". Explain this statement using examples of your choice.

(10 Marks)

b) "Virtually all services are reliant on people to perform them, very often dealing directly with the consumer". Explain this statement using examples of your choice.

(10 Marks)

----------END OF THE QUESTION PAPER----------

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Year 2 Semester II
REPEAT EXAMINATION
Inventory and Warehouse Management – BSCM2412

- This paper consists of EIGHT questions on ELEVEN (11) pages.
- Answer FIVE Questions including Question 01.
- Only non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write Legibly.

Date: 2022.08.18 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

SELECT MOST APPROPRIATE ANSWER OUT OF THE GIVEN CHOICES.

1. Select the correct explanation about Global Trends
   (a) Currently global trend in competition in between supply chains
   (b) Cost is the main global trend of competition
   (c) Flexibility is a traditional global trend in competition
   (d) None of above

2. Inventory Control can be used;
   (a) To avoid only overstocking of items
   (b) To achieve satisfactory levels of customer service while keeping inventory costs within reasonable bounds
   (c) To achieve maximum levels of customer service while keeping inventory costs within reasonable bounds

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(d) To avoid only understocking of items

3. Considers the distribution and handling patterns of items from stores
   (a) SOS
   (b) SDE
   (c) FSN
   (d) ABC

4. Reorder point is
   (a) the quantity on hand when items to be reordered
   (b) the quantity on hand when items dropped
   (c) the odder quantity when items to be reordered
   (d) the order quantity when items dropped

5. Why organizations need to hold inventory?
   (a) Physically difficult and economically impractical for each item to arrive to where it is needed at the exact time of need
   (b) Physically impossible and economically impractical for each item to arrive to where it is needed at the exact time of need
   (c) Physically impossible and costly very high for each item to arrive to where it is needed at the exact time of need
   (d) Systematically impossible and economically impractical for each item to arrive to where it is needed at the exact time of need

6. Objective of Inventory Control
   (a) Achieve satisfactory levels of customer service while keeping inventory costs within least level
   (b) Achieve maximum levels of customer service while keeping inventory costs within reasonable bounds
   (c) Achieve best levels of customer service while keeping inventory costs within reasonable bounds
   (d) Achieve satisfactory levels of customer service while keeping inventory costs within reasonable bounds

7. Extra inventory carried to serve as insurance against fluctuations in demand is called:
   (a) EOQ
   (b) Wastage Inventory
   (c) Safety Stock
   (d) Ordering Point

8. Means of "V", "E" and "D" in VED classification
   (a) Vital, Essential, and Desirable
   (b) Very important, Essential, and Desirable
   (c) Vital, Expected, and Desirable
   (d) Vital, Essential, and Design

9. Inventory Turn Over Means
   (a) Ratio of average cost of goods sold to average inventory investment

(b) Ratio of cost of goods sold to inventory investment

(c) Ratio of optimum cost of goods sold to optimum inventory investment

(d) Ratio of maximum cost of goods sold to maximum inventory investment

10. Three inventory counting systems;

(a) Time Based System, Perpetual Inventory System, Two-bin System

(b) Periodic System, Perpetual Inventory System, Two-bin System

(c) Periodic System, Time Based Inventory System, Two-bin System

(d) Periodic System, Perpetual Inventory System, Time Based System

11. In what form does warehouses store products in the facilities?

(a) Raw Material

(b) Work in Progresses/ Semi finished products

(c) Finished Products.

(d) All of the above.

12. What's NOT a warehouse operating principle?

(a) Stock location

(b) Physical control and security

(c) Single story facility

(d) Order picking and assembly.

13. What are the two major categories that warehouses can be classified into?

(a) Public and private.

(b) Contract and multi-client.

(c) Ownership and Operations

(d) Consolidation and break-bulk.

14. What's NOT an objective of a warehouse?

(a) Providing a timely customer service.

(b) Providing communication links.

(c) To keep track of items.

(d) To share the storage space.

15. How does warehousing allows firms to use customer service as a value adding competitive tool?

(a) Through storing.

(b) Through short haul transportation.

(c) Through time and place utility.

(d) Through providing communicational links.

16. What's a cost based benefit of warehousing.

(a) Postponement.

(b) Spot stocking.

(c) Full line stocking.

(d) Production support.

17. What's the material handling equipment which is utilized for both horizontal and vertical movements?

(a) Tow tractor.

(b) Power Pallet truck.

(c) Pallet stacker.

(d) Hand pallet truck

18. Not a difference between contract and Public warehouses.

(a) Difference in contract.

(b) Difference in space availability.

(c) Difference in space availability.

(d) Difference in ownership.

19. What's the type of warehouse which comes under operations?

(a) Fulfillment centers.

(b) Public warehouses.

(c) Private warehouses.

(d) Multi client warehouses.

20. What's not a basic function of a warehouse?

(a) Transport Consolidation.

(b) Product mixing.

(c) Docking.

(d) Break bulk

(01 Mark*20 = 20 Marks)

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Question 02

(a) The maintenance department of a small logistics company uses about 946 cases of liquid cleanser annually. Ordering costs are Rs. 13, carrying costs are Rs. 6 per case a year, and the new price schedule indicates that orders of less than 100 cases will cost Rs. 25 per case, 101 to 150 cases will cost Rs. 20 per case, 151 to 200 cases will cost Rs. 18 per case, and larger orders will cost Rs. 15 per case. Determine the optimal order quantity and the total cost. (06 Marks)

(b) Pidding manufacturing assembles security monitors. It purchases 3600 black and white cathode ray tubes a year at $65 each. Ordering costs are $31,and annual carrying costs are 20 percent of the purchase price. Compute the optimal quantity and the total annual cost of ordering and carrying the inventory. (07 Marks)

(c) Surge Electric uses 4,000 toggle switches a year. Switches are priced as follows: 1 to 499, 90 cents each; 500 to 999, 85 cents each; and 1,000 or more, 80 cents each. It costs approximately $30 to prepare an order and receive it, and carrying costs are 40 percent of purchase price per unit on an annual basis. Determine the optimal order quantity and the total annual cost. (07 Marks)

Question 03

(a) A bag manufacturer uses 48000 zippers per year for its popular hand bag series.The firm makes its own zippers, which it can produce at a rate of 800 per day. The bags are made uniformly over the entire year. Carrying cost is $1 per

zipper a year. Setup cost for a production run of zippers is $45. The firm operates 240 days peryear. Determine the

a. Optimal run size (02 Marks)
b. Minimum total annual cost for carrying and setup (02 Marks)
c. Cycle for the optimal runsize (03 Marks)
d. Runtime (03 Marks)

(b) A drugstore uses fixed-order cycles for many of the items it stocks. The manager wants a service level of .98. The order interval is 14 days, and lead time is 2 days. Average demand for one item is 40 units per day, and the standard deviation of demand is 3 units per day. Given the on-hand inventory at the reorder time for each order cycle shown in the following table, determine the order quantities for cycles 2, 3, and 4: (10 Marks)

Table 3.1 - On hand Quantities

Cycle	On Hand
1	42
2	8
3	103

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Question 04

(a) A restaurant uses an average of 50 jars of a special source each week. Weekly usage of sauce has a standard deviation of 3 jars. The manager is willing to accept no more than a 10% risk of stockout during lead time, which is two weeks. Assume the distribution of usage is normal.

(i) Which of the ROP formula is appropriate for this situation? Why? (03 Marks)

(ii) Determine the value of z. (03 Marks)

(iii) Determine the ROP. (04 Marks)

(b) The housekeeping department of a motel uses approximately 600 bars of soap each day, and this tends to be fairly constant. Lead time for soap delivery is normally distributed with a mean of 6 days and a standard deviation of two days. A service level 90% is desired.

(i) Find the ROP. (05 Marks)

(ii) How many days of supply are on hand at the ROP? (05 Marks)

Question 05

One unit of A is made of two units of B and one unit of C. B is made of three units of D and one unit of F. C is composed of three units of B, one unit of D, and four units of E. D is made of one unit of E. Item C has a lead time of one week; Items A, B, E, and F have two-week lead times; and Item D has a lead time of three weeks.

Lot-far-lot lot sizing is used for Items C, E, and F; lots of size 20, 40, and 160 are used for items A, B, and D, respectively. Items A, B, D, and E have on-hand (beginning)

inventories of 5, 10, 100, and 100, respectively; all other items have zero beginning inventories. We are scheduled to receive 10 units of A in Week 3, 20 units of B in Week 7, 40 units of F in week 5 and 60 units of E in Week 2; there are no other schedule receipts. If 20 units of A are required in Week 10, use the low-level-coded bill of materials (product structure tree) to find the necessary planned order releases for all components.

(20 Marks)

Question 06

(a) Benefits of strategic warehousing can be categorized into two major groups as cost based and service based. Explain in detail, the service based benefits of warehousing. (10 marks)

(b) What are the strategies that are used in the modern day warehouses to improve the cube utilization and accessibility in the available space? (05 marks)

(c) Describe two basic functions of a warehouse. (05 marks)

Question 07

(a) There're several factors which are considered when designing a warehouse. However product flow is a crucial designing criteria to be considered when designing a warehouse. Elaborate why in your own words. (06 Marks)

(b) Most often warehouse design principles suggest that warehouses should be built as one story facilities. Explain why building single story facilities are not practical in the modern warehouses. (08 Marks)

(c) Briefly describe the major types of packaging. (06 Marks)

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Question 08

Write short notes on below topics (04*05 Marks)

(a) Fulfillment centers.

(b) Public Warehousing.

(c) Role of packaging.

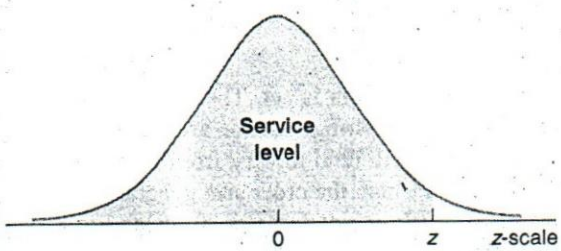
(d) Transport Consolidation.

----------END OF THE QUESTION PAPER----------

Model	Formula		Symbols
1. Basic EOQ	$Q_0 = \sqrt{\frac{2DS}{H}}$	(12–2)	Q_o = Economic order quantity D = Annual demand S = Order cost H = Annual carrying cost per unit Q = Order quantity
	$TC = \frac{Q}{2}H + \frac{D}{Q}S$	(12–1)	
	Length of order cycle $= \frac{Q}{D}$	(12–3)	
2. Economic production quantity	$Q_o = \sqrt{\frac{2DS}{H}}\sqrt{\frac{p}{p-u}}$	(12–5)	Q_o = Optimal run or order size p = Production or delivery rate u = Usage rate I_{MAX} = Maximum inventory level
	$TC = \frac{I_{max}}{2}H + \frac{D}{Q}S$	(12–4)	
	Cycle time $= \frac{Q}{u}$	(12–6)	
	Run time $= \frac{Q}{p}$	(12–7)	
	$I_{max} = \frac{Q_0}{p}(p-u)$	(12–8)	
3. Quantity discounts	$TC = \frac{Q}{2}H + \frac{D}{Q}S + PD$	(12–9)	P = Unit price
4. Reorder point under: a. Constant demand and lead time b. Variable demand rate c. Variable lead time d. Variable lead time and demand	$ROP = d(LT)$	(12–10)	ROP = Quantity on hand at reorder point d = Demand rate LT = Lead time $\bar{d}$ = Average demand rate σ_d = Standard deviation of demand rate z = Standard normal deviation $\overline{LT}$ = Average lead time σ_{LT} = Standard deviation of lead time
	$ROP = \bar{d}\,LT + z(\sigma_d)\sqrt{LT}$	(12–13)	
	$ROP = d\overline{LT} + z(\sigma_{LT})d$	(12–14)	
	$ROP = \bar{d}\,\overline{LT} + z\sqrt{\overline{LT}\sigma_d^2 + \bar{d}^2\sigma_{LT}^2}$	(12–15)	
5. ROP shortages a. Units short per cycle b. Units short per year c. Annual service level	$E(n) = E(z)\sigma_{dLT}$	(12–16)	$E(n)$ = Expected number short per cycle $E(z)$ = Standardized number short σ_{dLT} = Standard deviation of lead time demand $E(N)$ = Expected number short per year SL_{annual} = Annual service level
	$E(N) = E(n)\frac{D}{Q}$	(12–17)	
	$SL_{annual} = 1 - \frac{E(z)\sigma_{dLT}}{Q}$	(12–19)	
6. Fixed interval	$Q = \bar{d}(OI + LT) + z\sigma_d\sqrt{OI + LT} - A$	(12–20)	OI = Time between orders A = Amount on hand at order time
7. Single period	$SL = \frac{C_s}{C_s + C_e}$	(12–21)	SL = Service level C_s = Shortage cost per unit C_e = Excess cost per unit

TABLE 12.3 Normal distribution service levels and unit normal loss function

z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$
−2.40	.0082	2.403	−.80	.2119	.920	0.80	.7881	.120	2.40	.9918	.0030
−2.36	.0091	2.363	−.76	.2236	.889	0.84	.7995	.112	2.44	.9927	.0020
−2.32	.0102	2.323	−.72	.2358	.858	0.88	.8106	.104	2.48	.9934	.0020
−2.28	.0113	2.284	−.68	.2483	.828	0.92	.8212	.097	2.52	.9941	.0020
−2.24	.0125	2.244	−.64	.2611	.798	0.96	.8315	.089	2.56	.9948	.0020
−2.20	.0139	2.205	−.60	.2743	.769	1.00	.8413	.083	2.60	.9953	.0010
−2.16	.0154	2.165	−.56	.2877	.740	1.04	.8508	.077	2.64	.9959	.0010
−2.12	.0170	2.126	−.52	.3015	.712	1.08	.8599	.071	2.68	.9963	.0010
−2.08	.0188	2.087	−.48	.3156	.684	1.12	.8686	.066	2.72	.9967	.0010
−2.04	.0207	2.048	−.44	.3300	.657	1.16	.8770	.061	2.76	.9971	.0010
−2.00	.0228	2.008	−.40	.3446	.630	1.20	.8849	.056	2.80	.9974	.0008
−1.96	.0250	1.969	−.36	.3594	.597	1.24	.8925	.052	2.84	.9977	.0007
−1.92	.0274	1.930	−.32	.3745	.576	1.28	.8997	.048	2.88	.9980	.0006
−1.88	.0301	1.892	−.28	.3897	.555	1.32	.9066	.044	2.92	.9982	.0005
−1.84	.0329	1.853	−.24	.4052	.530	1.36	.9131	.040	2.96	.9985	.0004
−1.80	.0359	1.814	−.20	.4207	.507	1.40	.9192	.037	3.00	.9987	.0004
−1.76	.0392	1.776	−.16	.4364	.484	1.44	.9251	.034	3.04	.9988	.0003
−1.72	.0427	1.737	−.12	.4522	.462	1.48	.9306	.031	3.08	.9990	.0003
−1.68	.0465	1.699	−.08	.4681	.440	1.52	.9357	.028	3.12	.9991	.0002
−1.64	.0505	1.661	−.04	.4840	.419	1.56	.9406	.026	3.16	.9992	.0002
−1.60	.0548	1.623	.00	.5000	.399	1.60	.9452	.023	3.20	.9993	.0002
−1.56	.0594	1.586	.04	.5160	.379	1.64	.9495	.021	3.24	.9994	.0001
−1.52	.0643	1.548	.08	.5319	.360	1.68	.9535	.019	3.28	.9995	.0001
−1.48	.0694	1.511	.12	.5478	.342	1.72	.9573	.017	3.32	.9995	.0001
−1.44	.0749	1.474	.16	.5636	.324	1.76	.9608	.016	3.36	.9996	.0001
−1.40	.0808	1.437	.20	.5793	.307	1.80	.9641	.014	3.40	.9997	.0001
−1.36	.0869	1.400	.24	.5948	.290	1.84	.9671	.013			
−1.32	.0934	1.364	.28	.6103	.275	1.88	.9699	.012			
−1.28	.1003	1.328	.32	.6255	.256	1.92	.9726	.010			
−1.24	.1075	1.292	.36	.6406	.237	1.96	.9750	.009			
−1.20	.1151	1.256	.40	.6554	.230	2.00	.9772	.008			
−1.16	.1230	1.221	.44	.6700	.217	2.04	.9793	.008			
−1.12	.1314	1.186	.48	.6844	.204	2.08	.9812	.007			
−1.08	.1401	1.151	.52	.6985	.192	2.12	.9830	.006			
−1.04	.1492	1.117	.56	.7123	.180	2.16	.9846	.005			
−1.00	.1587	1.083	.60	.7257	.169	2.20	.9861	.005			
−.96	.1685	1.049	.64	.7389	.158	2.24	.9875	.004			
−.92	.1788	1.017	.68	.7517	.148	2.28	.9887	.004			
−.88	.1894	0.984	.72	.7642	.138	2.32	.9898	.003			
−.84	.2005	0.952	.76	.7764	.129	2.36	.9909	.003			



Standard Normal Probabilities

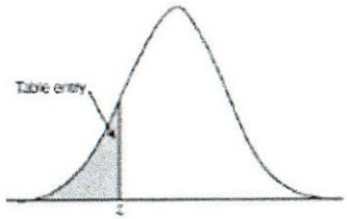


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
-3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
-3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
-3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
-3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
-0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
-0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
-0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
-0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
-0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
-0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
-0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
-0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
-0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
-0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

Standard Normal Probabilities

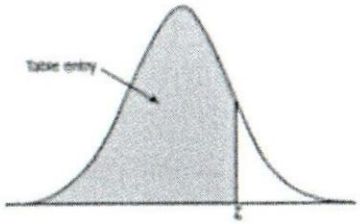


Table entry for z is the area under the standard normal curve to the left of z.

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

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Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II
REPEAT EXAMINATION
Quality Management – BSCM2210

- This paper consists of SEVEN questions on THREE (03) pages.
- Answer FOUR Questions including Question 01.
- Only non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write Legibly.

Date: 2022.08.17 Pass mark: 40% Time: 02 Hours

Question 01: (Compulsory)

Kaizen is a great tool inculcated under the Total Quality Management (TQM) umbrella. Discuss five (05) Kaizen projects that can be implemented at the work environment related to a transport and logistics company and their benefits associated to muda, mura and muri concepts. (25 Marks)

Question 02

Write short notes on the followings quality tools with examples

(a) Kanbanzed systems
(b) History of Six sigma
(c) Benefits of Just in Time method
(d) 5why method (25 Marks)

Question 03

In a warehouse, poor temperature maintenance has been a problem which has affected for products' quality. The warehouse manager had formed a quality circle and asked the employees to manage the matter. As an expert of quality administration, you are required to instruct them on fish-born diagrams and force field analysis.

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You may draw the diagrams by assuming the possible root causes areas and possible solutions and discuss the execution of the quality circle. (25 Marks)

Question 04

(a) Define the word "Quality" (05 Marks)
(b) Service quality is different to a good's quality"

Do you agree with the above statement? Justify your views with examples. (20 Marks)

Question 05

Just in Time (JIT) systems are tended to fail due to many reasons in some organizations. Discuss, five (05) major reasons for such failures. (25 Marks)

Question 06

Draw a process map for the following steps relevant to an online store. you are free enough to add new steps as applicable

(a) Customer inquiry on an electrical item
(b) Providing preliminary product information
(c) Waiting for customer's feedback (24 Hrs)
(d) Customer requests on discounts
(e) Checking his/her loyalty status
(f) Loyal customer/no
(g) Loyal customers will be given 10% discount
(h) Communicating pricing and other related conditions, terms, warranty and etc.
(i) Order confirmation
(j) Recording delivery info.
(k) Pay confirmation
(l) Goods Quality inspection
(m) Item delivery (25 Marks)

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Question 07

"New trends in quality, address the issues and challenges of the modern world"

Do you agree with the above statement? Justify your views referring five (05) new quality trends today. (25 Marks)

----------END OF THE QUESTION PAPER----------

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Year 2 Semester II

SEMESTER END EXAMINATION

Inventory and Warehouse Management – BSCM2412

- This paper consists of EIGHT questions on SEVEN (07) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.
- Supporting document will be provided

Date: 2022.03.24 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

SELECT MOST APPROPRIATE ANSWER OUT OF THE GIVEN CHOICES.

1. Currently global trends in competition based on;
   (a) Quality, Cost, Organization Vs Organization
   (b) Quality, Flexibility, Responsiveness
   (c) Quality, Cost, Supply Chain Vs Supply Chain
   (d) Quality, Cost, Responsiveness

2. Inventory Control can be used;
   (a) To avoid only overstocking of items
   (b) To achieve satisfactory levels of customer service while keeping inventory costs within reasonable bounds
   (c) To achieve maximum levels of customer service while keeping inventory costs within reasonable bounds
   (d) To avoid only understocking of items

3. Not an Assumption of an EOQ
   (a) Only one product is involved
   (b) Annual demand requirements known
   (c) Demand is even throughout the year
   (d) Lead time is not a constant
4. Extra inventory carried to serve as insurance against fluctuations in demand is called:
   (a) EOQ
   (b) Wastage Inventory
   (c) Safety Stock
   (d) Ordering Point
5. Reorder point is
   (a) the quantity on hand when items to be reordered
   (b) the quantity on hand when items dropped
   (c) the odder quantity when items to be reordered
   (d) the order quantity when items dropped
6. In what form does warehouses store products in the facilities?
   (a) Raw Material
   (b) Work in Progresses/ Semi finished products
   (c) Finished Products.
   (d) All of the above.
7. What's NOT an objective of a warehouse?
   (a) Providing a timely customer service.
   (b) Providing communication links.
   (c) To keep track of items.
   (d) To share the storage space.

8. What are the two major categories that warehouses can be classified into?
   (a) Public and private.
   (b) Contract and multi-client.
   (c) Ownership and Operations
   (d) Consolidation and break-bulk.

9. What is NOT a factor to consider when selecting an alternative warehousing facility?
   (a) Cost.
   (b) Technology.
   (c) Geography.
   (d) Long or short distance transportation.

10. What's NOT a warehouse operating principle?
   (a) Stock location
   (b) Physical control and security
   (c) Single story facility
   (d) Order picking and assembly.

(2*10 Marks)

Question 02

(a) A large bakery buys flour in 25-pound bags. The bakery uses an average of 4860 bags a year. Preparing an order and receiving a shipment of flour involves a cost of $10 per order. Annual carrying costs are $75 per bag.

   i. Determine the EOQ. (03 Marks)
   ii. How many orders per year will there be? (02 Marks)
   iii. Compute the total cost of ordering and carrying flour. (03 Marks)
   iv. If ordering costs were to increase by $1 per order, how much would that affect the minimum total annual cost? (03 Marks)

(b) A mail-order house uses 18,000 boxes a year. Carrying costs are 60 cents per box a year, and ordering costs are $96. The following price schedule applies. Determine

i. The optimal order quantity. (06 Marks)

ii. The number of orders per year. (03 Marks)

Number of Boxes	Price per Box ($)
1000-1999	1.25
2000-4999	1.2
5000-9999	1.15
10000 or more	1.1

Question 03

(a) Demand for walnut fudge ice cream at the Sweet Cream Dairy can be approximated by a normal distribution with a mean of 21 gallons per week and a standard deviation of 3.5 gallons per week. The new manager desires a service level of 90 percent. Lead time is two days, and the dairy is open seven days a week. (Hint: Work in terms of weeks.)

i. If an ROP model is used, what ROP would be consistent with the desired service level? How many days of supply are on hand at the ROP, assuming average demand? (05 Marks)

ii. If a fixed-interval model is used instead of an ROP model, what order size would be needed for the 90 percent service level with an order interval of 10 days and a supply of 8 gallons on hand at the order time? What is the probability of experiencing a stockout before this order arrives? (05 Marks)

(b) A drugstore uses fixed-order cycles for many of the items it stocks. The manager wants a service level of .98. The order interval is 14 days, and lead time is 2 days. Average demand for one item is 40 units per day, and the standard deviation of demand is 3 units per day. Given the on-hand inventory at the reorder time for each order cycle shown in the following table, determine the order quantities for cycles 2, 3, and 4: (10 Marks)

Table 3.1 – On hand Quantities

Cycle	On Hand
1	42
2	8
3	103

Question 04

(a) The manager of a store that sells office supplies has decided to set an annual service level of 96% for a certain model of telephone answering equipment. The store sells approximately 300 of this model a year. Holding cost is $5 per unit annually, ordering cost is $25, and standard deviation of lead time demand is 7.

i. What average number of units per year will be consistent with the specified annual service level? (03 Marks)

ii. What average number of units short per cycle will provide the desired annual service level? (03 Marks)

iii. What lead time service level is necessary for the 96% annual service level? (04 Marks)

(b) Famous Albert prides himself on being the cookie kings of the west small, freshly baked cookies are the specialty of his shop. Famous Albert has asked for help to determine the number of cookies he should make each day. From an analysis of past demand he estimates demand for cookics as;

Table 4.1: Probability of Demand

Demand (dozen)	Probability of Demand
1, 800	0.05
2, 000	0.10
2, 200	0.20
2, 400	0.30
2, 600	0.20
2, 800	0.10
3, 000	0.05

Each dozen sells for Rs. 69 and costs Rs. 49, which includes handling and transportation. Cookies that are not sold at the end of the day are reduced to Rs. 0.29 and sold the following day as day old merchandize. What is the optimal number of cookies to make? (10 Marks)

Question 05

(a) End item P is composed of three subassemblies: K, L, and W. K is assembled using 3 Gs and 4 Hs; L is made of 2 Ms and 2 Ns; and W is made of 3 Zs. On-hand inventories are 20 Ls, 40 Gs, and 200Hs. Scheduled receipts are 10 Ks at the start of week 3, 30 Ks at the start of week 6, and 200 Ws at the start of week 3.

One hundred Ps will be shipped at the start of week 6, and another 100 at the start of week 7. Load times are two weeks for subassemblies and one week for components G, H, and M. Final assembly of P requires one week. Include an extra 10 percent scrap allowance in each planned order of G. The minimum order size for H is 200 units. Develop each of the following:

i. A product structure tree. (04 Marks)

ii. A master schedule for P. (04 Marks)

iii. Material requirements plan for K, G, and H using lot-for-lot ordering. (12 Marks)

Question 06

a) Explain the concept "Short haul transportation in warehousing" (04 Marks)

b) Imagine that you work as a warehouse manager and explain the warehousing process in detail. (08 Marks)

c) Even though, warehouse layout design principles suggest that warehouses should possess single story facility, now the trend in most of the Asian countries are to move towards, multi storied warehousing facilities. Discuss in detail, as to why do the Asian countries move towards multi storied warehousing facilities and discuss about its applicability to Sri Lankan context. (08 Marks)

Question 07

a) Explain how modern-day warehouses utilize modern technologies to improve the cube utilization and accessibility. (06 Marks)

b) Elaborate in detail, the basic functions of a warehouse. (06 Marks)

c) There're several factors which are considered when designing a warehouse. However, product flow is a crucial designing criterion to be considered when designing a warehouse. Elaborate why in your own words. (08 Marks)

Question 08

a) Benefits of strategic warehousing can be categorized into two major groups as cost based and service based. Explain in detail, the cost-based benefits of warehousing. (06 Marks)

b) Explain the role of performed by a package of a product in your own words. (04 Marks)

c) Elaborate what cross docking is in your own words. (04 Marks)

d) Distinguish between public and contract warehousing using an example. (06 Marks)

----------END OF THE QUESTION PAPER----------

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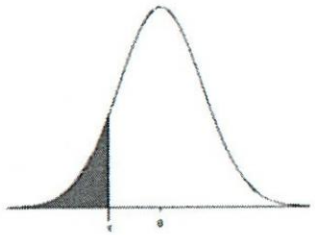
$Q_0 = \sqrt{\frac{2DS}{H}}$ (12–2) $TC = \frac{Q}{2}H + \frac{D}{Q}S$ (12–1) Length of order cycle $= \frac{Q}{D}$ (12–3)	Q_0 = Economic order quantity D = Annual demand S = Order cost H = Annual carrying cost per unit Q = Order quantity
$Q_0 = \sqrt{\frac{2DS}{H}}\sqrt{\frac{p}{p-u}}$ (12–5) $TC = \frac{I_{max}}{2}H + \frac{D}{Q}S$ (12–4) Cycle time $= \frac{Q}{u}$ (12–6) Run time $= \frac{Q}{p}$ (12–7) $I_{max} = \frac{Q_0}{p}(p-u)$ (12–8)	Q_0 = Optimal run or order size p = Production or delivery rate u = Usage rate I_{MAX} = Maximum inventory level
$TC = \frac{Q}{2}H + \frac{D}{Q}S + PD$ (12–9)	P = Unit price
ROP $= d(LT)$ (12–10) ROP $= \bar{d}LT + z(\sigma_d)\sqrt{LT}$ (12–13) ROP $= d\overline{LT} + z(\sigma_{LT})d$ (12–14) ROP $= \bar{d}\overline{LT} + z\sqrt{LT\sigma_d^2 + \bar{d}^2\sigma_{LT}^2}$ (12–15)	ROP = Quantity on hand at reorder point d = Demand rate LT = Lead time $\bar{d}$ = Average demand rate σ_d = Standard deviation of demand rate z = Standard normal deviation $\overline{LT}$ = Average lead time σ_{LT} = Standard deviation of lead time
$E(n) = E(z)\sigma_{dLT}$ (12–16) $E(N) = E(n)\frac{D}{Q}$ (12–17) $SL_{annual} = 1 - \frac{E(z)\sigma_{dLT}}{Q}$ (12–19)	$E(n)$ = Expected number short per cycle $E(z)$ = Standardized number short σ_{dLT} = Standard deviation of lead time demand $E(N)$ = Expected number short per year SL_{annual} = Annual service level
$= \bar{d}(OI + LT)$ $+ z\sigma_d\sqrt{OI + LT} - A$ (12–20)	OI = Time between orders A = Amount on hand at order time
$= \frac{C_s}{C_s + C_e}$ (12–21)	SL = Service level C_s = Shortage cost per unit C_e = Excess cost per unit

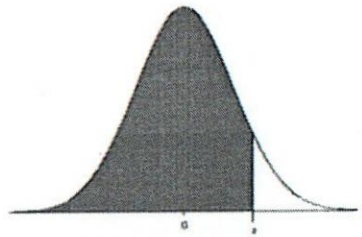
00035

Table of Standard Normal Probabilities for Negative Z-scores



z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

Table of Standard Normal Probabilities for Positive Z-scores

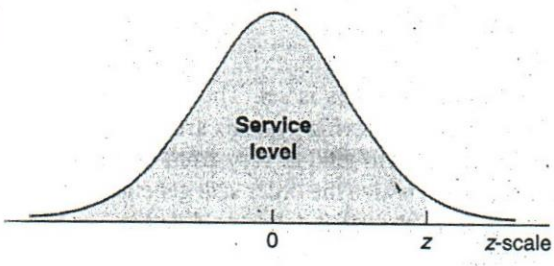


z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998

Note that the probabilities given in this table represent the area to the LEFT of the z-score.
The area to the RIGHT of a z-score = 1 – the area to the LEFT of the z-score

TABLE 12.3 Normal distribution service levels and unit normal loss function

z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$	z	Lead Time Service Level	$E(z)$
−2.40	.0082	2.403	−.80	.2119	.920	0.80	.7881	.120	2.40	.9918	.0030
−2.36	.0091	2.363	−.76	.2236	.889	0.84	.7995	.112	2.44	.9927	.0020
−2.32	.0102	2.323	−.72	.2358	.858	0.88	.8106	.104	2.48	.9934	.0020
−2.28	.0113	2.284	−.68	.2483	.828	0.92	.8212	.097	2.52	.9941	.0020
−2.24	.0125	2.244	−.64	.2611	.798	0.96	.8315	.089	2.56	.9948	.0020
−2.20	.0139	2.205	−.60	.2743	.769	1.00	.8413	.083	2.60	.9953	.0010
−2.16	.0154	2.165	−.56	.2877	.740	1.04	.8508	.077	2.64	.9959	.0010
−2.12	.0170	2.126	−.52	.3015	.712	1.08	.8599	.071	2.68	.9963	.0010
−2.08	.0188	2.087	−.48	.3156	.684	1.12	.8686	.066	2.72	.9967	.0010
−2.04	.0207	2.048	−.44	.3300	.657	1.16	.8770	.061	2.76	.9971	.0010
−2.00	.0228	2.008	−.40	.3446	.630	1.20	.8849	.056	2.80	.9974	.0008
−1.96	.0250	1.969	−.36	.3594	.597	1.24	.8925	.052	2.84	.9977	.0007
−1.92	.0274	1.930	−.32	.3745	.576	1.28	.8997	.048	2.88	.9980	.0006
−1.88	.0301	1.892	−.28	.3897	.555	1.32	.9066	.044	2.92	.9982	.0005
−1.84	.0329	1.853	−.24	.4052	.530	1.36	.9131	.040	2.96	.9985	.0004
−1.80	.0359	1.814	−.20	.4207	.507	1.40	.9192	.037	3.00	.9987	.0004
−1.76	.0392	1.776	−.16	.4364	.484	1.44	.9251	.034	3.04	.9988	.0003
−1.72	.0427	1.737	−.12	.4522	.462	1.48	.9306	.031	3.08	.9990	.0003
−1.68	.0465	1.699	−.08	.4681	.440	1.52	.9357	.028	3.12	.9991	.0002
−1.64	.0505	1.661	−.04	.4840	.419	1.56	.9406	.026	3.16	.9992	.0002
−1.60	.0548	1.623	.00	.5000	.399	1.60	.9452	.023	3.20	.9993	.0002
−1.56	.0594	1.586	.04	.5160	.379	1.64	.9495	.021	3.24	.9994	.0001
−1.52	.0643	1.548	.08	.5319	.360	1.68	.9535	.019	3.28	.9995	.0001
−1.48	.0694	1.511	.12	.5478	.342	1.72	.9573	.017	3.32	.9995	.0001
−1.44	.0749	1.474	.16	.5636	.324	1.76	.9608	.016	3.36	.9996	.0001
−1.40	.0808	1.437	.20	.5793	.307	1.80	.9641	.014	3.40	.9997	.0001
−1.36	.0869	1.400	.24	.5948	.290	1.84	.9671	.013			
−1.32	.0934	1.364	.28	.6103	.275	1.88	.9699	.012			
−1.28	.1003	1.328	.32	.6255	.256	1.92	.9726	.010			
−1.24	.1075	1.292	.36	.6406	.237	1.96	.9750	.009			
−1.20	.1151	1.256	.40	.6554	.230	2.00	.9772	.008			
−1.16	.1230	1.221	.44	.6700	.217	2.04	.9793	.008			
−1.12	.1314	1.186	.48	.6844	.204	2.08	.9812	.007			
−1.08	.1401	1.151	.52	.6985	.192	2.12	.9830	.006			
−1.04	.1492	1.117	.56	.7123	.180	2.16	.9846	.005			
−1.00	.1587	1.083	.60	.7257	.169	2.20	.9861	.005			
−.96	.1685	1.049	.64	.7389	.158	2.24	.9875	.004			
−.92	.1788	1.017	.68	.7517	.148	2.28	.9887	.004			
−.88	.1894	0.984	.72	.7642	.138	2.32	.9898	.003			
−.84	.2005	0.952	.76	.7764	.129	2.36	.9909	.003			



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Beyond A Graduate

Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II

SEMESTER END EXAMINATION

Procurement Management – BSCM2409

- This paper consists of EIGHT questions on FIVE (05) pages.
- Answer FIVE questions including question 01.
- Only non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.03.22 Pass mark: 40% Time: 03 Hours

Question 01 (Compulsory)

Strategic analysis means the process of handling research on a company and its operating environment to formulate a strategy. The definition of strategic analysis may differ from an academic or business perspective, but the process involves several common factors. Strategy is the grand design or an overall 'plan', which an organization selects in order to move or react towards the set objectives by using its resources. Strategic procurement ensures timely supply of goods and services in line with the organization's business goals, while reducing risk within the supply chain.

(a) Companies prefer using strategic procurement for a number of reasons.

(i) Define the term "strategy". (01 Marks)

(ii) What are the common factors involving in strategic analysis? (02 Marks)

(iii) Give three methodologies which are used to study the market efficiently. (02 Marks)

(iv) It is recommended to use SMART goals when setting up your procurement strategy. What does mean by SMART here? (02 Marks)

(v) Name main three types of purchasing systems used in different organizations. (02 Marks)

(vi) What does mean by "purchasing devolution". (01 Mark)

(b) "The Kraljic Portfolio purchasing model was formed by Peter Kraljic and it appeared in the Harvard Business Review in 1983".

(i) Draw a basic matrix diagram of Kraljic portfolio model. (06 Marks)

(ii) Write the characteristics of bottleneck items with appropriate examples. (04 Marks)

Question 02

Acquisition of external resources by the government using public funds, grants & gifts under public procurement rules is the scope of public procurement management. It doesn't mean solely that pubic body - buying something. The purpose of public procurement may be making value for money.

(a) Governments are expected to carry it out efficiently and with high standards of conduct in order to ensure high quality of service delivery and safeguard the public interest.

(i) Point out five major public procurement objectives. (04 Marks)

(ii) Define the term "contract". (01 Marks)

(iii) Name five key contract pricing mechanisms. (05 Marks)

(b) Explain new developments in public sector procurement. (10 Marks)

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Course CODE: COM552

Question 03

It is of high importance to acquire resources of the right quality, delivered at the right quantity, to the right place, at the right time and even more important at the right price. The buyer doesn't look at the price the same way the seller does. To a buyer, price is an element in the total cost of ownership and this will be compared to the value of the product or service which has to offer.

(a) Divide factors affecting pricing decisions into internal & external factors (Five factors per each). (10 Marks)

(b) Illustrate price analysis and cost analysis separately. (10 Marks)

Question 04

International trade is the exchange of goods and services between countries or else economic transactions that are made between countries. Global sourcing is one part of international trade. Sourcing overseas refers to buying materials, products or services from manufacturers or suppliers that are located outside of your home country. Nowadays, a large number of organizations consider sourcing as a viable option for cutting down their expenses. However, the procurement journey of organizations is not so simple as it may seem. Large-size business firms especially MNCs face numerous hardships when they try to customize their cross-border sourcing activities. Incoterms are incorporated in contracts for the delivery of goods worldwide and provide guidance to importers, exporters, lawyers, transporters, insurers and students of international trade.

(a) When global sourcing being practiced, agreeing to correct INCOTERMS is a must.

(i) INCOTERMS are segregated into two different types mainly. What are they? (02 Marks)

(ii) Give four INCOTERMS for the above types given in (i). (08 Marks)

(b) Explain why international sourcing is needed. (10 Marks)

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Question 05

Choose the wrong supplier and you could face shipping delays, poor quality and product returns. But choose the right supplier and you'll be on your way to quality products and satisfied customers. When you're trying to find a manufacturer to produce your consumer products, due diligence is essential. You need to look for a supplier that matches your business needs as closely as possible.

(a) One of procurement's most important duties has been identifying and aligning their organizations with reliable suppliers. These sources not only have to meet shipping timelines, pricing parameters, and quality standards, but the best ones also have to be able to do this over and over again on a long-term basis.

(i) List down five most important attributes to focus on during your supplier search. (05 Marks)

(ii) Give five different types of sourcing. (05 Marks)

(b) Sourcing process is a strategic movement with sequence of steps. Justify the statement using proper examples & knowledge. (10 Marks)

Question 06

You are the procurement manager in a small manufacturing organization. The company is considering moving towards an E-procurement system. Imagine that you are assigned to write a report to be submitted to the CEO of the company, elaborating below mentioned;

(a) Define the term E-procurement. (04 Marks)

(b) Write the benefits of E-procurement using appropriate examples. (09 Marks)

(c) List the barriers for E-procurement in third world countries. (07 Marks)

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Question 07

(a) Define the term 'Outsourcing' with examples. (03 Marks)

(b) Identify the benefits of outsourcing. (05 Marks)

(c) Identify the pitfalls of outsourcing. (05 Marks)

(d) List the precautions which should be taken by the organizations proactively in order to make sure that the concept of outsourcing theory works in their organization. (07 Marks)

Question 08

Write short notes for selected four topics. (5*4 Marks)

(a) Total Cost Ownership

(b) Hedging with Future Contracts

(c) Hard Commodities

(d) Problems in International Sourcing

(e) Types of Capital Equipment

(f) Negotiation Strategies

----------END OF THE QUESTION PAPER----------

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Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II

SEMESTER END EXAMINATION

Port Management and Operations – BSCM 2408

- This paper consists of EIGHT questions on TWO (02) pages.
- Answer FIVE questions including question 01.
- Only non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.03.19 Pass mark: 40% Time:03 Hours

Question 01: (Compulsory)

What are the current facilities & status of the;

a) Port of Colombo (05 Marks)
b) Port of Galle (05 Marks)
c) Port of Hambantota (05 Marks)
d) Port of Trincomalee (05 Marks)

Question 02

a) Describe Navigation Operation (10 Marks)
b) Describe different Cargo Handling Terminal Operation (10 Marks)

Question 03

a) Explain what a Sea Port & Port Business is? (5 Marks)
b) What is Direct & Indirect Operation and give examples? (5 Marks)
c) Explain Port Customer & their Expectations (5 Marks)
d) What are the fundamental observations concerning Ports? (5 Marks)

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Question 04

a) Name & describe Port Administration Models? (5 Marks)
b) Name & describe three modes of Shipping Operation (5 Marks)
c) Explain Import & Export Procedure (10 Marks)

Question 05

a) List out Main Tariff Items of Sri Lanka Ports Authority Tariff? (10 Marks)
b) Name the parties that are interested in Port Charges /Tariff (10 Marks)

Question 06

a) What are the salient features of the SLPA Act? (10 Marks)
b) Describe future development port plans for Colombo & Hambantota (10 Marks)

Question 07

a) Why measure Port Business Performance? (5 Marks)
b) Name different types of ships and cargo they carry (5 Marks)
c) What are the advantages & disadvantage of Containerization? (5 Marks)
d) What are the value added logistics services provided by Mega Transshipment Hubs like Port of Colombo? (5 Marks)

Question 08

"Colombo Port Expansion Project today call as Colombo South Harbour"

a) Why Port of Colombo went for an expansion and give reasons? (10 Marks)
b) What are the salient features of the project? (5 Marks)
c) Explain ECT & WCT (5 Marks)

----------END OF THE QUESTION PAPER----------

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Year 2 Semester II

SEMESTER END EXAMINATION

Management Information Systems for Supply Chains – BSCM2307

- This paper consists of EIGHT questions on SIX (06) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.03.16 Pass mark: 40% Time:03 Hours

Question 01 (Compulsory)

a) Write down four generic strategies for dealing with competitive forces, enabled by using IT. (02 Marks)

b) Give an example business process for each of the following. (02 Marks)
   I. Functional business process
   II. Cross-functional business process

c) Compare and contract TPS and MIS. (02 Marks)

d) Briefly explain two candidate ethical principles. (02 Marks)

e) List down one advantage and one limitation of RFID technology. (02 Marks)

f) Why information systems are vulnerable? Give two reasons. (02 Marks)

g) Write down the four steps of risk assessment. (02 Marks)

h) List down two access control tools/technologies. (02 Marks)

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i) Write down two characteristics of a digital firm. (02 Marks)

j) Write down two responsibilities of ICTA. (02 Marks)

Question 02

a) Explain What a customer relationship Management system is? (04 Marks)

b) Explain Push-Based model and Pull-Based model in Supply Chain Management Systems. (08 Marks)

c) Explain how Supply chain Management systems can add value to business. (08 Marks)

Question 03

a) Explain what is meant by "Knowledge Workers". (04 Marks)

b) Your company wants to do more with knowledge management. Describe the steps it should take to develop a knowledge management program and select knowledge management applications. (06 Marks)

c) Describe various ways that knowledge management systems could help firms with sales and marketing or with manufacturing and production. (10 Marks)

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Question 04

a) "Firms invest heavily in information systems to achieve strategic business objectives". Identify and briefly explain four (04) different business objectives of Information Systems. (08 Marks)

b) Explain a generic strategy for dealing with competitive forces, enabled by using IT using an example. (05 Marks)

c) "Information systems can have a positive economic impact on organizations". Do you agree? Explain your answer. (07 Marks)

Question 05

Read the following case study and answer the question given below.

The introduction of new technology can have a profound effect on human behaviour. New technologies give us capabilities that we did not have before, which in turn create environments and situations that have not been specifically addressed in ethical terms. Those who master new technologies gain new power; those who cannot or do not master them may lose power. For example, the ability to anonymously make perfect copies of digital music has tempted many music fans to download copyrighted music for their own use without making payment to the music's owner. Many of those who would never have walked into a music store and stolen a CD find themselves with dozens of illegally downloaded albums.

One method for navigating new ethical waters is a code of ethics. A code of ethics is a document that outlines a set of acceptable behaviours for a professional or social group; generally, it is agreed to by all members of the group. The document details different actions that are considered appropriate and inappropriate. A good example of a code of ethics is the Code of Ethics and Professional Conduct of the Association for Computing Machinery, an organization of computing professionals that includes academics, researchers, and practitioners. In the ACM's code, you will find many

straightforward ethical instructions, such as the admonition to be honest and trustworthy. But because this is also an organization of professionals that focuses on computing, there are more specific admonitions that relate directly to information technology.

No one should enter or use another's computer system, software, or data files without permission. One must always have appropriate approval before using system resources, including communication ports, file space, other system peripherals, and computer time. Designing or implementing systems that deliberately or inadvertently demean individuals or groups is ethically unacceptable. Organizational leaders are responsible for ensuring that computer systems enhance, not degrade, the quality of working life. When implementing a computer system, organizations must consider the personal and professional development, physical safety, and human dignity of all workers. Appropriate human-computer ergonomic standards should be considered in system design and in the workplace.

a) What do you mean by a computer crime? (02 Mark)

b) Who commits computer crimes? (02 Marks)

c) Explain two ways of committing computer crimes that can be eliminated by strictly following Code of Ethics by ACM. (06 Marks)

d) "Threat from hackers and crackers can be eliminated by strictly following Code of Ethics by ACM." Do you agree? Justify your answer with examples from case. (10 Marks)

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Question 06

Read the following case study and answer the question given below.

Energy consumption is a major concern for businesses and the global population as a whole, and an important part of a bigger IT concern called total cost of ownership (TCO). One way to reduce TCO is to use server-based computing, a computing model in which applications run on a central back-end server and are displayed on desktop devices. A single server can support dozens of devices. Server based computing reduces TCO in several ways. It allows network administrators to maintain applications on a single server or small group of servers instead of on every desktop device. It allows access to application suites from any device connected to the server without having to install the applications on each individual device. Both PCs and thin clients can be used in a server-based computing environment; however thin clients are the preferred desktops for server-based computing. Thin-client devices are simple computers designed to run applications from a central server. For example, both PCs and thin clients display the same commonly used Windows desktop interface to the end-user, and have the same features such as keyboard, mouse, serial and parallel ports and network connectivity. At the same time, thin clients are very different. They have lower microprocessor requirements and lower memory requirements than PCs while providing an identical end-user experience. Thin clients are literally smaller, some the size of a CD case, and most lack removable drives (or any drives), making it impossible for those using them to steal electronic data on floppy disk or introduce viruses to the network. There are many more benefits, but in short, thin-client devices are designed to cost less than PCs to run and maintain. Using thin client devices with server-based computing reduces TCO even more than server-based computing with PCs.

a) According to the case how to reduce the total cost of ownership? (04 Marks)
b) Compare and contrast Personal computer and thin client. (04 Marks)
c) How thin clients helps to reduce energy consumption? (04 Marks)
d) Apart from Green computing discuss one of the contemporary hardware platform trend (features, advantages and disadvantages) (08 Marks)

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Question 07

a) Define the term "IT Infrastructure". (03 Marks)

b) Briefly explain 5 contemporary hardware platform trends use in current industries. (10 Marks)

c) Explain challenges of managing IT infrastructure in organization and how to overcome those challenges. (07 Marks)

Question 08

Briefly describe the followings. (05*4 Marks)

a) Ethical dilemma.

b) Cloud Computing.

c) Executive Support Systems.

d) Transaction Processing System.

----------END OF THE QUESTION PAPER----------

Library

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Year 2 Semester II
SEMESTER END EXAMINATION
Marketing Management – BSCM2311

- This paper consists of EIGHT questions on FIVE (05) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2022.03.10 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

The super market industry in Sri Lanka

The supermarket industry in Sri Lanka is set out for an explosive growth in the recent years, where household penetration of supermarket shopping has more than doubled over the decade, with an average year on year growth rate of 7.3%, clearly indicating a steady but a sustainable growth. This is with the western lifestyle of modern Sri Lankans where convenience is a key benefit sought after (Perera 2006). If we look at the drivers for the evolution of modern supply chains, or "Modern Trade" they have been persistent in increase demand for value added consumer products, convenience food, beverage, and frozen confectioneries.

Though the market is considered to be monopolistic dominated by a few giant chains (such as Cargills Food City, Keels, Arpico, etc), there are more than 30 strong regional stand-alone players who are also substantially contributing to the growth of the sector.

Increasing per capita income and rising urbanisation will make modern grocery retail more affordable and accessible to a larger portion of the population. Customer buying patterns and product preferences tend to change as income levels rise, which should bode

well for modern trade in Sri Lanka. The average monthly basket value has also doubled over the past decade which clearly indicates the increase in the spending power of a supermarket shopper over the past years. The country is on the point of reaching the upper middle-income group. According to Nielsen, convenience is one of the key considerations in the purchasing decisions of customers of that group.

The companies that focus on hypermarket formats with extensive product portfolios are likely to make the most gains in urban areas, where customers prioritise convenience, variety, and quality. Established players are not expected to expand outside of the Western province aggressively in the near term, but provinces such as central, North Central, Northwestern and Uva provide strong growth potential as they are supported by high per capita income growth and low supermarket penetration. Growth in the Western province expected to stagnate in the medium term, especially for companies that focus on FMCG products, as demand for such products tends to be inelastic.

However, a sharp increase in the usage of online shopping can be observed during Covid 19 pandemic in many countries including Sri Lanka. Rising internet penetration, which stood at 50.8% in January 2021, with 10.90 million internet users (which is an additional 800, 000 internet users in 2021 compared to 2020); the availability of 3G and 4G connectivity across the country; growth in credit card use; and a preference for convenience amid rising income levels also provide strong support for online sales. Increasing traffic on the roads and lack of parking facilities will also drive consumers to opt for online shopping.

Regulatory changes in the form of taxes and price controls are the key risk for the industry and regulatory risks expected to remain high. Even a slight change in taxes could have a material impact on profitability, which is already thin.

The above data has been based on a real-life situation, but details have been changed for assessment purposes and may not be an accurate reflection of reported news.

Source; Spotlight: Sri Lankan Modern Grocery Retail by Fitch Rating

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Using the given information in the case study you are required to discuss the impact of **four selected** macro environmental factors for organisations operating in supermarket industry in Sri Lanka. (20 Marks)

Question 02

You are an employed member of ABC Consulting and have been asked to prepare a report to Professional Pharmaceuticals (PP) (A Pharmaceuticals company) addressing the following tasks.

a) Identify **THREE** main sources for developing needed data for marketing information system and discuss the suitability of each identified source. (15 Marks)
b) Recommend **TWO** different contact methods that the PP could use to gather primary data if they wish to undertake marketing research. (05 Marks)

Question 03

You work as a Marketing Assistant for a large, well-known international sports clothing company based in a country of your choice. You have been asked by your manager to produce a briefing paper to be sent to all your global colleagues, that:

a) List out the marketing stimuli that can affect the buyer decisions. (04 Marks)
b) Explain two buyers' characteristics that effect their choice of sport clothing using examples. (16 Marks)

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Question 04

As a Product Manager for a world renown cosmetics company, which offer naturally-inspired beauty products, you believe that the Asian market for cosmetics is growing rapidly and offers considerable potential. You therefore wish to develop your product portfolio to exploit the market opportunities across the region.

a) Assess **THREE** suitable bases on which the Asian market could be segmented (You are required to discuss both main bases and suitable sub criteria). (15 marks)
b) Recommend a targeting strategy suitable for entering to the Asian market. (05 Marks)

Question 05

Your organization, ABC pls, manufacture sport and fashion clothing and is in the process of developing its marketing plan. As part of this process your marketing director has asked you to produce a report that.

a) Critically evaluate the characteristics of traditional product-oriented organisations and the challenges they face in becoming market-oriented in a turbulent environment. (08 Marks)
b) Outline the structure of a marketing a plan and describe the key aspects that need to be included in the marketing plan for your organization (12 Marks)

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Question 06

A renowned brand 'Sela' is a successful and well-established handloom saree retailer in Sri Lanka. Currently 'Sela' offers a wide range of products including sarongs, sarees, and other readymade garments. Company has recently decided to expand it brand.

a) Argue what qualities might have contributed for 'Sela' to become a successful brand? (08 Marks)

b) Advice on strategic options that company consider when developing their brand. (12 Marks)

Question 07

TGI Friday's was one of the first American casual dining chains that recognized that consumers were looking for a dining experience. The restaurants, with wooden floors, Tiffany lamps, bentwood chairs, striped tablecloths, stained glass, and authentic memorabilia, are designed to provide a comfortable and relaxing environment.

Develop an effective communication campaign to promote their business in Sri Lanka. (20 Marks)

Question 08

There is a vital difference between marketing of a goods and that of a service. Explain how it differs using examples. (20 Marks)

----------END OF THE QUESTION PAPER----------

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Course CODE: COM552

Year 2 Semester II
Semester End Examination
Quality Management – BSCM2210

- This paper consists of SEVEN (07) questions on NINE (09) pages.
- Answer FOUR questions including Question 01
- Only non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legible.
- Supporting documents are attached.

Date: 2022.03.08 Pass mark: 40% Time: 02 Hours

Question 01 (Compulsory)

Global Associate is a 3PL service center operated by Merlyn Group, Sri Lanka. They undertake many third party services targeting retail stores island wide. Neo Lanka is a main customer of Global Associate and Neo Lanka currently pays attention on the manufacturing function and all other non-core business operations are undertaken by the Global Associate. One day, Neo Lanka requested Global Associate to send a goody bulk to a leading super market in Malabe. Global Associate promised the company to deliver the goods in three days.

Mr. Namal Gunarathne, the chief of operations at Global Associate met his team to communicate on the order and team mates, consisted of four seemed surprised to get the information. Followings were included in their conversation.

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"We have so many orders to complete during these days, three days are not adequate to fulfill the requirement"

"Anyhow, you four have to do this"

"The thing is; some items are running out and we need time to get them from the manufacturer, some items are obsolete and need to send them back too. Warehouse space is not adequate as well"

"Oh is that so?"

"And also I have kept a note on your table, regarding the same two days back"

"I did not find it. It must have been slipped, what are the other issues that you all face right now?"

"Sir, we have some issues with the current inventory management, no updated information can be obtained on time, when some employees are on leave, there is no one knowing some information. further some of our products are not used for a long time and some perishable items do not have a proper lead time to get. We require a *shramadana* campaign to execute here, things are messed up"

(a) What are the quality issues related to the above scenario? (10 Marks)
(b) What recommendations that you can provide to manage the above situation successfully of this 3PL company? (15 Marks)

Question 02

(a) Explain the term "Gemba Kaizen" briefly (04 Marks)
(b) Distinguish the terms "Muda, Muri and Mura" with examples (06Marks)
(c) Recommend five (05) inspection methods for an automobile company (05 Marks)

(d) Draw a sample "inspection sheet" for a product or a service as per your choice. (10 Marks)

Question 03

(a) Distinguish the terms "Just in time" and "Just in case" (04 Marks)

(b) "Tamagotchi" effect is related to the supplier quality assurance. Do you agree with the statement? Elaborate your views briefly. (06 Marks)

(c) Draw a process map for following steps related to an online retail store

(i) Start
(ii) Existing user/New user
(iii) Sign in / Log in
(iv) Successful-yes/no
(v) If no, Fill information in the data form to register
(vi) Admin page /Customer page
(vii) Admin-order views-add products-manage products-save-logout
(viii) Customer-view products-add to cart-shipping details- payment gateway-save card information in the site-yes/no-
(ix) Final check up on the items and other details
(x) Log out (15 Marks)

Question 04

Supplier quality assurance is an important function, mainly associated to a purchasing department. As a quality expert, explain what supplier quality evaluation criterions can be recommended for a manufacturing organization. (25 Marks)

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Question 05

Write short notes on 05 selected topics mentioned below

(i) Sustainable cities
(ii) System approach to quality
(iii) ISO 14001
(iv) Waiver by different parties
(v) Silver economy
(vi) SERVQUAL model (5*05 Marks)

Question 06

(a) The data below are 20 samples taken from a bottle filling process of a soft-drink manufacturing firm. For each sample the mean and the standard deviation are calculated. Soft drink volume in the bottle is taken as the important quality characteristic.

Table 6.01: Sample data

Sample no.	Sample Values					Mean	Standard Deviation
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5		
1	303	304	298	297	301	300.6	(f)
2	302	305	302	298	296	300.6	3.58
3	305	303	300	302	305	303	(g)
4	302	298	303	296	303	(a)	3.21

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5	295	303	302	302	296	299.6	3.78
6	298	303	297	303	301	300.4	(h)
7	300	295	305	296	302	(b)	4.16
8	300	304	304	298	296	(c)	3.58
9	296	303	300	301	303	300.6	2.88
10	305	300	300	301	298	300.8	2.59
11	295	304	300	296	299	(d)	3.56
12	299	301	296	300	303	299.8	2.59
13	305	295	296	302	296	298.8	(i)
14	302	304	303	302	297	301.6	2.70
15	295	298	304	297	305	299.8	4.44
16	305	301	305	305	300	303.2	2.49
17	295	295	305	305	302	(e)	5.08
18	295	304	298	302	303	300.4	(j)
19	297	298	305	298	295	298.6	3.78
20	305	305	303	302	296	302.2	3.70

(i) Find the unknown values in the above table (i.e. (a), (b), (c), (d), ….., (j))

(05 Marks)

(ii) Calculate $\bar{S}$ for the above data. (02 Marks)

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(iii) Calculate 3σ trial control limits for '*s*' chart. (05 Marks)

(iv) Discuss the validity of the trial control limits for s charts. (02 Marks)

(v) Calculate $\bar{\bar{X}}$ for the above data. (02 Marks)

(vi) Calculate 3σ trial control limits for $\bar{X}$ charts. (05 Marks)

(vii) Discuss the validity of the trial control limits. (02 Marks)

(viii) If trial control limits are invalid explain how to re-calculate it. (02 Marks)

Question 07

Write the Correct answer in your answer book

(20 Marks)

1) Consider following statement.
    1. Statistical Process Control helps determine if assignable causes are disturbing the process
    2. Statistical Process Control helps determine if vendor performance is falling
    3. Statistical Process Control helps determine if customers are happy

    Which of the above statements are true?

    (A) a. only
    (B) b. only
    (C) c. only
    (D) a. and b. only

2) Drawing control charts requires
    (A) Adjusting the machines

(B) Calculation of statistics from data
(C) Teamwork training of workers
(D) Top management involvement

3) An assignable cause is generally known to
   (A) Vendors
   (B) Product designer
   (C) Workers
   (D) Customers

4) A Pareto chart shows
   (A) That the process is in control
   (B) The vital few from the trivial many
   (C) Process capability
   (D) A line drawn as production proceeds

5) Inspection assures that
   (A) The process is in control
   (B) Workers are motivated
   (C) Product meets specification
   (D) Quality problems are solved

6) P Charts are based on
   (A) Binomial Distribution
   (B) Normal Distribution
   (C) Poison Distribution
   (D) Hypergeometric distribution

7) An assignable variation may be due to
   (A) Variation in raw materials

(B) Limitations of the process
(C) Variation in skills of the employees
(D) All of the above

8) Control charts are used to monitor
(A) Random variation
(B) Natural variation
(C) Assignable variation
(D) All of the above

9) Magnificent Seven tools include
(A) Team meetings
(B) Management meeting regularly with workers
(C) Workers' toolkit
(D) Histogram

10) Which of the following chart types would be used to monitor the fraction of a production lot of desktops that had scratches on the surface.
(A) X bar charts
(B) P charts
(C) C harts
(D) S charts

Underline the correct answer (05 Marks)

11) To evaluate the quality performance of operating and management personnel is the objective of attribute charts in production process control
(A) TRUE
(B) FALSE

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12) An X-bar chart uses the count data

(A) TRUE

(B) FALSE

13) Total Quality Management focuses on Supplier, Employee and Customer.

(A) TRUE

(B) FALSE

14) Control limits are driven by the natural variability of the process

(A) TRUE

(B) FALSE

15) Control chart is a process monitoring and process controlling tool

(A) TRUE

(B) FALSE

----------END OF THE QUESTION PAPER----------

APPENDIX VI

Factors for Constructing Variables Control Charts

Observations in Sample, n	Chart for Averages: Factors for Control Limits A	A_2	A_3	Chart for Averages: Factors for Center Line c_4	$1/c_4$	Chart for Standard Deviations: Factors for Control Limits B_3	B_4	B_5	B_6	Factors for Center Line d_2	$1/d_2$	Chart for Ranges: Factors for Control Limits d_3	D_1	D_2	D_3	D_4
2	2.121	1.880	2.659	0.7979	1.2533	0	3.267	0	2.606	1.128	0.8865	0.853	0	3.686	0	3.267
3	1.732	1.023	1.954	0.8862	1.1284	0	2.568	0	2.276	1.693	0.5907	0.888	0	4.358	0	2.574
4	1.500	0.729	1.628	0.9213	1.0854	0	2.266	0	2.088	2.059	0.4857	0.880	0	4.698	0	2.282
5	1.342	0.577	1.427	0.9400	1.0638	0	2.089	0	1.964	2.326	0.4299	0.864	0	4.918	0	2.114
6	1.225	0.483	1.287	0.9515	1.0510	0.030	1.970	0.029	1.874	2.534	0.3946	0.848	0	5.078	0	2.004
7	1.134	0.419	1.182	0.9594	1.0423	0.118	1.882	0.113	1.806	2.704	0.3698	0.833	0.204	5.204	0.076	1.924
8	1.061	0.373	1.099	0.9650	1.0363	0.185	1.815	0.179	1.751	2.847	0.3512	0.820	0.388	5.306	0.136	1.864
9	1.000	0.337	1.032	0.9693	1.0317	0.239	1.761	0.232	1.707	2.970	0.3367	0.808	0.547	5.393	0.184	1.816
10	0.949	0.308	0.975	0.9727	1.0281	0.284	1.716	0.276	1.669	3.078	0.3249	0.797	0.687	5.469	0.223	1.777
11	0.905	0.285	0.927	0.9754	1.0252	0.321	1.679	0.313	1.637	3.173	0.3152	0.787	0.811	5.535	0.256	1.744
12	0.866	0.266	0.886	0.9776	1.0229	0.354	1.646	0.346	1.610	3.258	0.3069	0.778	0.922	5.594	0.283	1.717
13	0.832	0.249	0.850	0.9794	1.0210	0.382	1.618	0.374	1.585	3.336	0.2998	0.770	1.025	5.647	0.307	1.693
14	0.802	0.235	0.817	0.9810	1.0194	0.406	1.594	0.399	1.563	3.407	0.2935	0.763	1.118	5.696	0.328	1.672
15	0.775	0.223	0.789	0.9823	1.0180	0.428	1.572	0.421	1.544	3.472	0.2880	0.756	1.203	5.741	0.347	1.653
16	0.750	0.212	0.763	0.9835	1.0168	0.448	1.552	0.440	1.526	3.532	0.2831	0.750	1.282	5.782	0.363	1.637
17	0.728	0.203	0.739	0.9845	1.0157	0.466	1.534	0.458	1.511	3.588	0.2787	0.744	1.356	5.820	0.378	1.622
18	0.707	0.194	0.718	0.9854	1.0148	0.482	1.518	0.475	1.496	3.640	0.2747	0.739	1.424	5.856	0.391	1.608
19	0.688	0.187	0.698	0.9862	1.0140	0.497	1.503	0.490	1.483	3.689	0.2711	0.734	1.487	5.891	0.403	1.597
20	0.671	0.180	0.680	0.9869	1.0133	0.510	1.490	0.504	1.470	3.735	0.2677	0.729	1.549	5.921	0.415	1.585
21	0.655	0.173	0.663	0.9876	1.0126	0.523	1.477	0.516	1.459	3.778	0.2647	0.724	1.605	5.951	0.425	1.575
22	0.640	0.167	0.647	0.9882	1.0119	0.534	1.466	0.528	1.448	3.819	0.2618	0.720	1.659	5.979	0.434	1.566
23	0.626	0.162	0.633	0.9887	1.0114	0.545	1.455	0.539	1.438	3.858	0.2592	0.716	1.710	6.006	0.443	1.557
24	0.612	0.157	0.619	0.9892	1.0109	0.555	1.445	0.549	1.429	3.895	0.2567	0.712	1.759	6.031	0.451	1.548
25	0.600	0.153	0.606	0.9896	1.0105	0.565	1.435	0.559	1.420	3.931	0.2544	0.708	1.806	6.056	0.459	1.541

For $n > 25$.

$$A = \frac{3}{\sqrt{n}} \qquad A_3 = \frac{3}{c_4\sqrt{n}} \qquad c_4 \cong \frac{4(n-1)}{4n-3}$$

$$B_3 = 1 - \frac{3}{c_4\sqrt{2(n-1)}} \qquad B_4 = 1 + \frac{3}{c_4\sqrt{2(n-1)}}$$

$$B_5 = c_4 - \frac{3}{\sqrt{2(n-1)}} \qquad B_6 = c_4 + \frac{3}{\sqrt{2(n-1)}}$$

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Year 2 Semester II
REPEAT EXAMINATION
Marketing Management – BSCM2311

- This paper consists of EIGHT questions on FIVE (05) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2020.08.02 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

Transport industry – UK

Transport services are at the heart of the UK economy - moving people to work, home and school, and goods to households and businesses. In the 1980s, the government started to privatise bus services in the UK. It believed that allowing private firms to compete to run bus services would keep prices low and ensure companies would try harder to give customers what they wanted. The result has been more efficient, innovative and sustainable bus services.

Another key government policy affecting all transport services relates to the reduction of CO2 emissions. The UK government has signed an international treaty - the Kyoto Protocol. Countries which sign the agreement intend to reduce the emission of harmful gases. This can succeed only through partnership with business. A good example of this is the government initiative to encourage more children to use bus services rather than travelling to school by car.

From 2010, as part of an initiative called Carbon Reduction Commitment, all transportation companies will need to buy carbon credits. These credits will permit companies to generate specific quantities of carbon emissions.

Another important factor affecting transportation business is taxation. High tax on fuel encourages customers to switch from using cars to more economical bus and rail transport. Congestion charges in cities like London also encourage drivers to switch to other forms of transport.

Moreover. the number of older people in the UK is rising. There are more people with bus passes in this country than ever before. The passes mean that users travel free, as the local authority pays companies for providing the service. Many elderly people prefer to travel by bus because it is convenient and safe.

Society's habits and tastes are also changing. People are more aware of the importance of the environment and becoming 'green consumers'. Green consumers prefer goods and services that are 'environmentally-friendly' and which have less impact on the environment. The green consumer, for example, prefers to travel by bus or train than by air or in a large car. Further, people are now more mobile and travel more.

Today the environment changes are perhaps the most important external influence on any transport service. There is overwhelming evidence that human activity is contributing to climate change. Government, consumers and businesses all want to see better environmental management.

The above data has been based on a real-life situation, but details have been changed for assessment purposes and may not be an accurate reflection of reported news.

Adopted from; The times 100

Using the given information in the case study you are required to identify and explain four macro environmental trends that effect transportation industry UK. (20 Marks)

Question 02

You work for a restaurant based in a large city and have been asked by your manager to produce an email to be sent to the management team, that:

a) Explain the ways in which buyers psychological and cultural factors affect their final choice on a restaurant (10 Marks)

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b) Illustrates consumers buyer decision process using examples from the relevant industry. (10 Marks)

(Total 20Marks)

Question 03

You are working in an SME (small or medium sized enterprise) that sells computer consumables, such as printer ink, memory sticks (USB flash drives), software and paper. As a Marketing Assistant and you have been asked by the Marketing Manager to produce a report for the Marketing Director, that:

a) Identify three main sources for developing needed data for Marketing Information System (MIS) and explain them briefly with relevant examples. (09 Marks)
b) Differentiate primary and secondary data sources in marketing research (02 Marks)
c) Explain three sampling plan decisions (09 Marks)

(Total 20Marks)

Question 04

The company you are working for is wishing to enter holiday business. Instead of scattering the company marketing efforts, the management want to identify the parts of the market they can serve best and most profitably. Your managers asked you to prepare a report addressing the followings;

a) Recommend two suitable bases for segmentation that might be appropriate for the holiday business. (You are required to discuss both main bases and suitable sub criteria) (10 Marks)
b) Evaluate three strategic options that the company have for targeting. (10 Marks)

(Total 20Marks)

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Question 05

You work in the marketing department of a large car manufacturing company. You have been asked by your manager to provide a briefing paper for all the other department managers, that:

a) Explain each stage of the new product development (NPD) process relevant for the car manufacturing industry (10 Marks)
b) Discuss TWO strategies that the company could adopt for pricing their new product. (10 Marks)

(Total 20Marks)

Question 06

You are working in a small local business in manufacturing consumer durables and you have been asked by the director to produce a briefing paper for a number of different managers, that:

a) Recommends FOUR marketing communication tools that the organization could use to maintain its competitive position in the market. (12 Marks)
b) Recommend two suitable distribution strategies to the business. (08 Marks)

(Total 20Marks)

Question 07

Working within a national hotel chain, you have been asked to produce a report which will be circulated to the managers of each hotel in your chain. Using examples from the hotel industry, your report should:

a) Explain the importance of the marketing planning process. (05 Marks)
b) Explain the stages of the marketing planning process using a suitable framework (15 Marks)

(Total 20Marks)

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Question 08

You are working for business that engage in manufacturing and selling FMCG products and you have been asked by the director to produce a report, that:

a) Explain the role of branding and qualities that should be considered when selecting a brand name. (08 Marks)

b) Using examples, discuss various strategic alternatives that the company can consider for brand development. (12 Marks)

(Total 20Marks)

----------*END OF THE QUESTION PAPER*----------

Library

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Year 2 Semester II

REPEAT EXAMINATION

Quality Management – BSCM 2210

- This paper consists of SEVEN questions on SIX (06) pages.
- Answer FOUR questions including question 01.
- Only Non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.
- Required documents are attached.

Date: 2020.07.30 Pass mark: 40% Time: 02 Hours

Question 01 (Compulsory)

(a) Define the term "Quality" (05 Marks)

(b) Service quality is different to the product quality. Consider the service of a third party logistics service provider (3PL) and explain five major service characteristics seeking delighted customers. (20 Marks)

Question 02

(a) What do you mean by Environmental management system (EMS)? (01 Mark)

(b) Explain six process affecters that determine the success of a process (24 marks)

Question 03

(a) Identify the below popular standards

(i) ISO 14001 -

(ii) ISO 50001 –

(iii) ISO 22000 –

(iv) ISO 27001 -

(v) ISO 45001 – (05 Marks)

(b) Assume that you have the responsibility of evaluating your company's raw material suppliers. Discuss five supplier evaluation criterions. (20 Marks)

Question 04

(a) Discuss the application of Fish bone diagrams and Force field analysis in quality circles. (10 Marks)

(b) Write short notes on 5 Why method, 5S and Kanban cards. (15 Marks)

Question 05

(a) Employee motivation is a key drive for delighting customers. What motivation tools can be used to enhance employee participation for quality management activities in an organization. (10 Marks)

(b) Supplier collaboration is a strategic management tool today in many industries specially when using JIT or similar systems. Explain 05 supplier collaboration enhancement methods seeking a reliable relationship. (15 Marks)

Question 06

(a) Find the correct answer for following MCQ questions. (05 Marks)

1) Statistical Process Control helps determine
   (A) If assignable causes are disturbing the process
   (B) If vendor performance is falling
   (C) If customers are happy
   (D) If customers are motivated

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2) Drawing control charts requires
   (A) Adjusting the machines
   (B) Calculation of statistics from data
   (C) Teamwork training of workers
   (D) Top management involvement

3) A Pareto chart shows
   (A) That the process is in control
   (B) The vital few from the trivial many
   (C) Process capability
   (D) A line drawn as production proceeds

4) P Charts are based on
   (A) Binomial Distribution
   (B) Normal Distribution
   (C) Poison Distribution
   (D) Hypergeometric distribution

5) An assignable variation may be due to
   (A) Variation in raw materials
   (B) Limitations of the process
   (C) Variation in skills of the employees
   (D) All of the above

(b) Briefly explain the manufacturer's risk and consumer's risk in deciding control limits of the Shewart control charts. (05 Marks)

(c) Discuss what is meant by Trial Control Limits (05 Marks)

(d) Data given below is about number of defective units found in quality inspection process carried out in a manufacturing firm of "glass frames".

Table 6.01

Sample number i	Sample size n_i	Number of defectives D_i
1	50	9
2	50	6
3	50	10
4	50	8
5	50	5
6	50	8
7	50	5
8	50	7
9	50	10
10	50	8
11	50	6
12	50	8
13	50	9
14	50	15
15	50	20
16	50	6
17	50	10
18	50	16
19	50	11
20	50	12
21	50	10
22	50	9
23	50	6
24	50	8
25	50	12

(a) Calculate 3-σ trial control limits for No. of defectives. (08 Marks)

(b) Discuss whether the process is in-control or out of control (02 Marks)

Question 07

In a manufacturing process, gross weight of a JAM bottle is an important quality characteristic. The data given below are 20 such samples, each with 5 bottles.

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Sample No.	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Mean	Standard Deviation
1	298	297	297	297	303	298.4	2.608
2	300	297	297	297	302	.....	.....
3	301	301	303	301	303	301.8	1.095
4	300	300	299	303	299	300.2	1.643
5	303	302	302	298	301	.....	.....
6	302	301	298	301	301	300.6	1.517
7	299	300	300	298	300	299.4	0.894
8	299	300	297	298	298	.....	.....
9	300	297	300	298	299	298.8	1.304
10	302	301	298	299	299	299.8	1.643
11	301	297	300	303	303	.....	.....
12	301	303	301	303	301	301.8	1.095
13	298	302	302	302	303	301.4	1.949
14	300	301	299	298	300	.....	.....
15	301	300	300	302	299	.....	.....
16	301	301	302	301	299	300.8	1.095
17	298	302	301	300	298	299.8	1.789
18	301	303	297	297	299	299.4	2.608
19	297	302	297	303	303	300.4	3.130

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20	300	300	298	301	303	300.4	1.817

(a) Fill the blanks in the above table (06 Marks)

(b) Calculate 3-σ trial control limits for S- Chart. (06 Marks)

(c) Discuss whether the process is in-control or out of control (02 marks)

(d) Discuss the validity of the trial control limits. (02 marks)

(e) Calculate 3-σ trial control limits for $\bar{X}$- Chart. (06 Marks)

(f) Discuss whether the process is in-control or out of control (02 Marks)

(g) Discuss the validity of the trial control limits. (01 Marks)

----------END OF THE QUESTION PAPER----------

APPENDIX VI

Factors for Constructing Variables Control Charts

Observations in Sample, n	Chart for Averages: Factors for Control Limits A	A_2	A_3	Chart for Averages: Factors for Center Line c_4	$1/c_4$	Chart for Standard Deviations: Factors for Control Limits B_3	B_4	B_5	B_6	Factors for Center Line d_2	$1/d_2$	Chart for Ranges: Factors for Control Limits d_3	D_1	D_2	D_3	D_4
2	2.121	1.880	2.659	0.7979	1.2533	0	3.267	0	2.606	1.128	0.8865	0.853	0	3.686	0	3.267
3	1.732	1.023	1.954	0.8862	1.1284	0	2.568	0	2.276	1.693	0.5907	0.888	0	4.358	0	2.574
4	1.500	0.729	1.628	0.9213	1.0854	0	2.266	0	2.088	2.059	0.4857	0.880	0	4.698	0	2.282
5	1.342	0.577	1.427	0.9400	1.0638	0	2.089	0	1.964	2.326	0.4299	0.864	0	4.918	0	2.114
6	1.225	0.483	1.287	0.9515	1.0510	0.030	1.970	0.029	1.874	2.534	0.3946	0.848	0	5.078	0	2.004
7	1.134	0.419	1.182	0.9594	1.0423	0.118	1.882	0.113	1.806	2.704	0.3698	0.833	0.204	5.204	0.076	1.924
8	1.061	0.373	1.099	0.9650	1.0363	0.185	1.815	0.179	1.751	2.847	0.3512	0.820	0.388	5.306	0.136	1.864
9	1.000	0.337	1.032	0.9693	1.0317	0.239	1.761	0.232	1.707	2.970	0.3367	0.808	0.547	5.393	0.184	1.816
10	0.949	0.308	0.975	0.9727	1.0281	0.284	1.716	0.276	1.669	3.078	0.3249	0.797	0.687	5.469	0.223	1.777
11	0.905	0.285	0.927	0.9754	1.0252	0.321	1.679	0.313	1.637	3.173	0.3152	0.787	0.811	5.535	0.256	1.744
12	0.866	0.266	0.886	0.9776	1.0229	0.354	1.646	0.346	1.610	3.258	0.3069	0.778	0.922	5.594	0.283	1.717
13	0.832	0.249	0.850	0.9794	1.0210	0.382	1.618	0.374	1.585	3.336	0.2998	0.770	1.025	5.647	0.307	1.693
14	0.802	0.235	0.817	0.9810	1.0194	0.406	1.594	0.399	1.563	3.407	0.2935	0.763	1.118	5.696	0.328	1.672
15	0.775	0.223	0.789	0.9823	1.0180	0.428	1.572	0.421	1.544	3.472	0.2880	0.756	1.203	5.741	0.347	1.653
16	0.750	0.212	0.763	0.9835	1.0168	0.448	1.552	0.440	1.526	3.532	0.2831	0.750	1.282	5.782	0.363	1.637
17	0.728	0.203	0.739	0.9845	1.0157	0.466	1.534	0.458	1.511	3.588	0.2787	0.744	1.356	5.820	0.378	1.622
18	0.707	0.194	0.718	0.9854	1.0148	0.482	1.518	0.475	1.496	3.640	0.2747	0.739	1.424	5.856	0.391	1.608
19	0.688	0.187	0.698	0.9862	1.0140	0.497	1.503	0.490	1.483	3.689	0.2711	0.734	1.487	5.891	0.403	1.597
20	0.671	0.180	0.680	0.9869	1.0133	0.510	1.490	0.504	1.470	3.735	0.2677	0.729	1.549	5.921	0.415	1.585
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22	0.640	0.167	0.647	0.9882	1.0119	0.534	1.466	0.528	1.448	3.819	0.2618	0.720	1.659	5.979	0.434	1.566
23	0.626	0.162	0.633	0.9887	1.0114	0.545	1.455	0.539	1.438	3.858	0.2592	0.716	1.710	6.006	0.443	1.557
24	0.612	0.157	0.619	0.9892	1.0109	0.555	1.445	0.549	1.429	3.895	0.2567	0.712	1.759	6.031	0.451	1.548
25	0.600	0.153	0.606	0.9896	1.0105	0.565	1.435	0.559	1.420	3.931	0.2544	0.708	1.806	6.056	0.459	1.541

For $n > 25$.

$$A = \frac{3}{\sqrt{n}} \qquad A_3 = \frac{3}{c_4\sqrt{n}} \qquad c_4 \cong \frac{4(n-1)}{4n-3}$$

$$B_3 = 1 - \frac{3}{c_4\sqrt{2(n-1)}} \qquad B_4 = 1 + \frac{3}{c_4\sqrt{2(n-1)}}$$

$$B_5 = c_4 - \frac{3}{\sqrt{2(n-1)}} \qquad B_6 = c_4 + \frac{3}{\sqrt{2(n-1)}}$$

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Year 2 Semester II

SEMESTER END EXAMINATION

Inventory and Warehouse Management – BSCM2412

- This paper consists of EIGHT questions on TEN (10) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2020.03.07 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

SELECT MOST APPROPRIATE ANSWER OUT OF THE GIVEN CHOICES.

1. An order size that minimizes inventory ordering and carrying costs:
   (a) Order point
   (b) Safety Stock
   (c) EOQ
   (d) None of above

2. The meaning of V-E-D in VED classification.
   (a) Vital, Essential, Desirable
   (b) Vital, Emergency, Desirable
   (c) Very Important, Emergency, Demand
   (d) Very important, Essential, Demand

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3. A distributor for a tire company expects to sell 9,600 steel-belted radial tires of a certain size and tread design next year. Annual carrying cost is Rs. 16 per tire, and ordering cost is Rs. 75. The distributor operates 288 days a year. What is the EOQ?
   (a) 301
   (b) 300
   (c) 299
   (d) 299.5

4. Extra inventory carried to serve as insurance against fluctuations in demand is called:
   (a) EOQ
   (b) Wastage Inventory
   (c) Safety Stock
   (d) Ordering Point

5. Three major costs of Inventory are;
   (a) Ordering, Safety, Carrying
   (b) Ordering, Stock-out, Carrying
   (c) Safety, Caring, Stock-out
   (d) Caring, Holding, Ordering

6. A restaurant uses an average of 50 jars of a special sauce each week. Weekly usage of sauce has a standard deviation of 3 jars. The manager is willing to accept no more than a 10 percent risk of stockout during lead time, which is two weeks. Assume the distribution of usage is normal. Determine the value of z.

(a) +1.28

(b) -1.28

(c) +1.24

(d) -1.24

7. As order size increases, total

   (a) inventory costs will increase, reach a maximum and then quickly decrease.

   (b) inventory cost will decrease, reach a minimum and then increase.

   (c) ordering costs will initially increase while total carrying cost will continue to decrease

   (d) carrying cost decreases while the total ordering cost increases

8. Which of the following is true for inventory control?

   (a) EOQ has minimum total cost for order

   (b) Carrying cost increases with the quantity

   (c) Ordering cost decreases with the lot size

   (d) All of the above

9. If EOQ = 40 units, order costs are $2 per order, and carrying costs are $.20 per unit, what is the usage in units?

   (a) 10 units

   (b) 16 units

   (c) 40 units

   (d) 80 units

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10. If EOQ = 1,000 units, order costs are $200 per order, and sales total 5,000 units, what is the carrying cost per unit?

    (a) $2

    (b) $10

    (c) $100

    (d) $1000

11. One of the considerations to determine the design criteria of a warehouse should be:

    a) Height Utilization
    b) Product Storage
    c) Put away
    d) Stock location

12. Which is not a function of a Warehouse?

    a) Transportation consolidation
    b) Docking
    c) Product Mixing
    d) Storage

13. Type of utility which can be obtain through making a good more easily available to potential customers;

    a) Space Utility
    b) Time Utility
    c) Place Utility
    d) Form Utility

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14. Which is not a Warehouse Operating Principle;
    a) Cube Utilization and Accessibility
    b) Stock Location
    c) Transportation Consolidation
    d) Order Picking and Assembly

15. Type of a warehouse which is operated as an independent business offering a range of services such as storage, handling and transportation based on a fixed or variable fee;
    a) Private Warehousing
    b) Public Warehousing
    c) Multiclient Warehousing
    d) Contract Warehousing

16. _____ benefits of warehousing occur when overall logistics cost are reduced, and _____ benefits are justified by sales improvements that more than offset added cost.

    a) Service Benefits and Economic Benefits
    b) Economic Benefits and Service Benefits
    c) Transport Benefits and storage Benefits
    d) Economic Benefits and Storage Benefits

17. Most common measure for Measuring Ontime Shipment of a warehouse;

    a) Order Picking Accuracy
    b) OTIF (On Time In Full)
    c) Stock count
    d) Truck Turnaround Time

18. Which of the following Warehouse Process is correct in order?
    a) Receiving, Put away, Order Picking, Storage and Shipping
    b) Receiving, Order Picking, Put away, Storage and Shipping
    c) Receiving, Storage, Order Picking, Put away and Shipping
    d) Receiving, Put away, Storage, Order Picking and Shipping

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19. Customer Service in terms of warehousing is referred as product availability in terms of;
    a) On shelf availability and Customer Satisfaction
    b) Order confirmation and on shelf availability
    c) Order Fulfillment and on shelf availability
    d) None of the above

20. Which of the following statement is incorrect?
    a) The ideal warehouse design is limited to a single story to have efficient warehouse operation
    b) Straight line product flow minimizes the congestion and confusion
    c) Warehouse capacity is depending upon how high goods can be stored
    d) The storage capacity of the warehouse cannot be maximized through minimizing aisle space

Question 02:

(a) The maintenance department of a small logistics company uses about 816 cases of liquid cleanser annually. Ordering costs are Rs. 12, carrying costs are Rs. 4 per case a year, and the new price schedule indicates that orders of less than 50 cases will cost Rs. 20 per case, 50 to 79 cases will cost Rs. 18 per case, 80 to 99 cases will cost Rs. 17 per case, and larger orders will cost Rs. 16 per case. Determine the optimal order quantity and the total cost. (10 Marks)

(b) The Friendly Sausage Factory (SFS) can produce sausage buns at a rate of 5000 per day. FSF supplies sausage buns to local restaurants at a steady rate of 250 per day. The cost to prepare the equipment for producing sausage buns is $66. Annual holding costs are 45 cents per sausage bun. The factory operates 300 days a year. Find.

(i) The optimal run size. (03 Marks)

(ii) The number of runs per year (03 Marks)

(iii) The length (in days) of a run. (04 Marks)

Question 03

(a) The house keeping section of a motel uses approximately 400 washcloths per day. The actual number tends to vary with the number of guests on any given night. Usage can be approximated by a normal distribution that has a mean of 400 and a standard deviation of 9 washcloths per day. A linen supply company delivers towels and washcloths with a lead time of three days. If the motel policy is to maintain a stock out risk of 2 percent, what is the minimum number of washcloths that must be on hand at reorder time, and how much of that amount can be considered safety stock? (04 Marks)

(b) The motel in the proceeding example uses approximately 600 bars of soap each day, and this tends to be fairly constant. Lead time for soap delivery is normally distributed with a mean of six days and a standard deviation of two days. A service level of 90 percent is desired.

(i) Find the Re Order Point (ROP). (04 Marks)

(ii) How many days of supply are on hand at the ROP? (04 Marks)

(c) Suppose that the manager of a construction supply house determined from historical records that demand for sand during lead time averages 50 tons. In addition, suppose the manager determined that demand during lead time could be described by a normal distribution that has a mean of 50 tons and a standard

deviation of 5 tons. Answer these questions, assuming that the manager is willing to accept a stockout risk of no more than 3 percent:

(i) How much safety stock be held? (04 Marks)

(ii) What reorder point should be used? (04 Marks)

Question 04

(a) A lab orders a number of chemicals from the same supplier every 30 days. Lead time is five days. The assistant manager of the lab must determine how much of one of these chemicals to order. A check of stock revealed that eleven 25 ml jars are on hand. Daily usage of the chemical is approximately normal with a mean of 15.2 ml per day and a standard deviation of 1.6 ml per day. The desired service level for this chemical is 95%.

(i) How many jars of the chemical should be ordered? (05 Marks)

(ii) What is the average amount of safety stock of the chemical? (05 Marks)

(b) A drugstore uses fixed-order cycles for many of the items it stocks. The manager wants a service level of 0.98. The order interval is 14 days, and lead time is 2 days. Average demand for one item is 40 units per day, and the standard deviation of demand is 3 units per day. Determine the order quantities when on hand inventory is 42, 08 and 103. (10 Marks)

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Question 05

Assume that you are a manager. You have received an order of 40 units of machines, which is to be delivered at the start of week 7 of your schedule. You already have 10 Machines in the inventory. A Machine consists of three components: B, C & G. One B, one G and three Cs are used to make this product. Company needs two weeks to assemble Machines. Using the following information;

(i). Develop a product structure tree for the machine (04 marks)

(ii). Determine how many units of components G should be ordered and the timing of those orders, given that both components G & C must be ordered in multiples of 80 units. Assume that components are used only for this particular machine. (16 Marks)

Table 5.1 – Item Details

Item	LT(Weeks)	On Hand	Components
B	1	5	E,F
C	1	20	G(2), H
E	2	4	
F	3	8	
G	2	15	
H	1	10	

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Question 06

(a) Define the term "Warehousing"? (02 Marks)
(b) List down basic warehouse functions and Explain in Brief? (08 Marks)
(c) "Maintaining Warehouse efficiency is a critical role in Supply Chain" Justify the statement with suitable examples (10 Marks)

Question 07

"The Cross-Docking process is pivotal importance to the company, as it enables the cargo receipt and temporary storage in a loading area, waiting for loading on another truck within 24 hours"

(a) Define the term "Cross-Docking"? (03 Marks)
(b) State **FIVE** advantages of Cross-Docking and Explain **TWO** in brief (07 Marks)
(c) Discuss the challenges of implementing Cross-Docking operation at Warehouses (10 Marks)

Question 08

(a) List down **FOUR** Alternative Warehouse Strategies and Explain **TWO** in brief. (06 Marks)
(b) State **THREE** factors considered when designing a Warehouse? Explain in Brief (07 Marks)
(c) Why Health and Safety plays an important role in Warehouse (07 Marks)

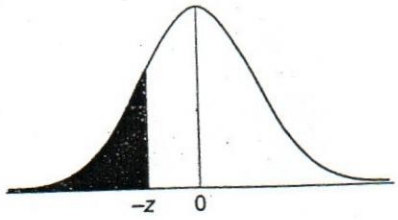
----------END OF THE QUESTION PAPER----------

TABLE 12.4 Summary of inventory formulas

LIBRARY.

Model	Formula	Symbols
1. Basic EOQ	$Q_0 = \sqrt{\frac{2DS}{H}}$ (12–2) $TC = \frac{Q}{2}H + \frac{D}{Q}S$ (12–1) Length of order cycle $= \frac{Q}{D}$ (12–3)	Q_o = Economic order quantity D = Annual demand S = Order cost H = Annual carrying cost per unit Q = Order quantity
2. Economic production quantity	$Q_o = \sqrt{\frac{2DS}{H}}\sqrt{\frac{p}{p-u}}$ (12–5) $TC = \frac{I_{max}}{2}H + \frac{D}{Q}S$ (12–4) Cycle time $= \frac{Q}{u}$ (12–6) Run time $= \frac{Q}{p}$ (12–7) $I_{max} = \frac{Q_0}{p}(p-u)$ (12–8)	Q_o = Optimal run or order size p = Production or delivery rate u = Usage rate I_{MAX} = Maximum inventory level
3. Quantity discounts	$TC = \frac{Q}{2}H + \frac{D}{Q}S + PD$ (12–9)	P = Unit price
4. Reorder point under: a. Constant demand and lead time b. Variable demand rate c. Variable lead time d. Variable lead time and demand	ROP $= d(LT)$ (12–10) ROP $= \bar{d}LT + z(\sigma_d)\sqrt{LT}$ (12–13) ROP $= \bar{d}\overline{LT} + z(\sigma_{LT})d$ (12–14) ROP $= \bar{d}\overline{LT} + z\sqrt{\overline{LT}\sigma_d^2 + \bar{d}^2\sigma_{LT}^2}$ (12–15)	ROP = Quantity on hand at reorder point d = Demand rate LT = Lead time $\bar{d}$ = Average demand rate σ_d = Standard deviation of demand rate z = Standard normal deviation $\overline{LT}$ = Average lead time σ_{LT} = Standard deviation of lead time
5. ROP shortages a. Units short per cycle b. Units short per year c. Annual service level	$E(n) = E(z)\sigma_{dLT}$ (12–16) $E(N) = E(n)\frac{D}{Q}$ (12–17) $SL_{annual} = 1 - \frac{E(z)\sigma_{dLT}}{Q}$ (12–19)	$E(n)$ = Expected number short per cycle $E(z)$ = Standardized number short σ_{dLT} = Standard deviation of lead time demand $E(N)$ = Expected number short per year SL_{annual} = Annual service level
6. Fixed interval	$Q = \bar{d}(OI + LT) + z\sigma_d\sqrt{OI + LT} - A$ (12–20)	OI = Time between orders A = Amount on hand at order time
7. Single period	$SL = \frac{C_s}{C_s + C_e}$ (12–21)	SL = Service level C_s = Shortage cost per unit C_e = Excess cost per unit

Table B
1. Areas under the standardized normal curve, from $-\infty$ to $-z$



.09	.08	.07	.06	.05	.04	.03	.02	.01	.00	z
.0002	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	−3.4
.0003	.0004	.0004	.0004	.0004	.0004	.0004	.0005	.0005	.0005	−3.3
.0005	.0005	.0005	.0006	.0006	.0006	.0006	.0006	.0007	.0007	−3.2
.0007	.0007	.0008	.0008	.0008	.0008	.0009	.0009	.0009	.0010	−3.1
.0010	.0010	.0011	.0011	.0011	.0012	.0012	.0013	.0013	.0013	−3.0
.0014	.0014	.0015	.0015	.0016	.0016	.0017	.0018	.0018	.0019	−2.9
.0019	.0020	.0021	.0021	.0022	.0023	.0023	.0024	.0025	.0026	−2.8
.0026	.0027	.0028	.0029	.0030	.0031	.0032	.0033	.0034	.0035	−2.7
.0036	.0037	.0038	.0039	.0040	.0041	.0043	.0044	.0045	.0047	−2.6
.0048	.0049	.0051	.0052	.0054	.0055	.0057	.0059	.0060	.0062	−2.5
.0064	.0066	.0068	.0069	.0071	.0073	.0075	.0078	.0080	.0082	−2.4
.0084	.0087	.0089	.0091	.0094	.0096	.0099	.0102	.0104	.0107	−2.3
.0110	.0113	.0116	.0119	.0122	.0125	.0129	.0132	.0136	.0139	−2.2
.0143	.0146	.0150	.0154	.0158	.0162	.0166	.0170	.0174	.0179	−2.1
.0183	.0188	.0192	.0197	.0202	.0207	.0212	.0217	.0222	.0228	−2.0
.0233	.0239	.0244	.0250	.0256	.0262	.0268	.0274	.0281	.0287	−1.9
.0294	.0301	.0307	.0314	.0322	.0329	.0336	.0344	.0351	.0359	−1.8
.0367	.0375	.0384	.0392	.0401	.0409	.0418	.0427	.0436	.0446	−1.7
.0455	.0465	.0475	.0485	.0495	.0505	.0516	.0526	.0537	.0548	−1.6
.0559	.0571	.0582	.0594	.0606	.0618	.0630	.0643	.0655	.0668	−1.5
.0681	.0694	.0708	.0721	.0735	.0749	.0764	.0778	.0793	.0808	−1.4
.0823	.0838	.0853	.0869	.0885	.0901	.0918	.0934	.0951	.0968	−1.3
.0985	.1003	.1020	.1038	.1056	.1075	.1093	.1112	.1131	.1151	−1.2
.1170	.1190	.1210	.1230	.1251	.1271	.1292	.1314	.1335	.1357	−1.1
.1379	.1401	.1423	.1446	.1469	.1492	.1515	.1539	.1562	.1587	−1.0
.1611	.1635	.1660	.1685	.1711	.1736	.1762	.1788	.1814	.1841	−0.9
.1867	.1894	.1922	.1949	.1977	.2005	.2033	.2061	.2090	.2119	−0.8
.2148	.2177	.2206	.2236	.2266	.2296	.2327	.2358	.2389	.2420	−0.7
.2451	.2483	.2514	.2546	.2578	.2611	.2643	.2676	.2709	.2743	−0.6
.2776	.2810	.2843	.2877	.2912	.2946	.2981	.3015	.3050	.3085	−0.5
.3121	.3156	.3192	.3228	.3264	.3300	.3336	.3372	.3409	.3446	−0.4
.3483	.3520	.3557	.3594	.3632	.3669	.3707	.3745	.3783	.3821	−0.3
.3859	.3897	.3936	.3974	.4013	.4052	.4090	.4129	.4168	.4207	−0.2
.4247	.4286	.4325	.4364	.4404	.4443	.4483	.4522	.4562	.4602	−0.1
.4641	.4681	.4721	.4761	.4801	.4840	.4880	.4920	.4960	.5000	−0.0

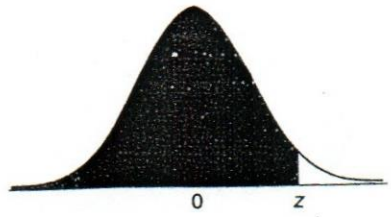
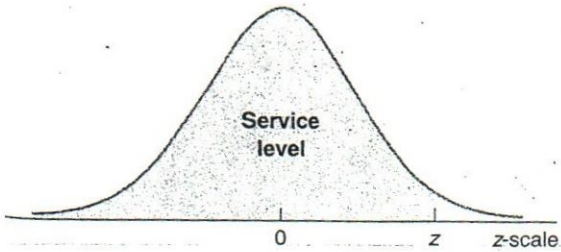


Table B (concluded)
2. Areas under the standardized normal curve, from $-\infty$ to $+z$

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
.7	.7580	.7611	.7642	.7673	.7703	.7734	.7764	.7794	.7823	.7852
.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

TABLE 12.3 Normal distribution service levels and unit normal loss function

z	Lead Time Service Level	E(z)	z	Lead Time Service Level	E(z)	z	Lead Time Service Level	E(z)	z	Lead Time Service Level	E(z)
−2.40	.0082	2.403	−.80	.2119	.920	0.80	.7881	.120	2.40	.9918	.0030
−2.36	.0091	2.363	−.76	.2236	.889	0.84	.7995	.112	2.44	.9927	.0020
−2.32	.0102	2.323	−.72	.2358	.858	0.88	.8106	.104	2.48	.9934	.0020
−2.28	.0113	2.284	−.68	.2483	.828	0.92	.8212	.097	2.52	.9941	.0020
−2.24	.0125	2.244	−.64	.2611	.798	0.96	.8315	.089	2.56	.9948	.0020
−2.20	.0139	2.205	−.60	.2743	.769	1.00	.8413	.083	2.60	.9953	.0010
−2.16	.0154	2.165	−.56	.2877	.740	1.04	.8508	.077	2.64	.9959	.0010
−2.12	.0170	2.126	−.52	.3015	.712	1.08	.8599	.071	2.68	.9963	.0010
−2.08	.0188	2.087	−.48	.3156	.684	1.12	.8686	.066	2.72	.9967	.0010
−2.04	.0207	2.048	−.44	.3300	.657	1.16	.8770	.061	2.76	.9971	.0010
−2.00	.0228	2.008	−.40	.3446	.630	1.20	.8849	.056	2.80	.9974	.0008
−1.96	.0250	1.969	−.36	.3594	.597	1.24	.8925	.052	2.84	.9977	.0007
−1.92	.0274	1.930	−.32	.3745	.576	1.28	.8997	.048	2.88	.9980	.0006
−1.88	.0301	1.892	−.28	.3897	.555	1.32	.9066	.044	2.92	.9982	.0005
−1.84	.0329	1.853	−.24	.4052	.530	1.36	.9131	.040	2.96	.9985	.0004
−1.80	.0359	1.814	−.20	.4207	.507	1.40	.9192	.037	3.00	.9987	.0004
−1.76	.0392	1.776	−.16	.4364	.484	1.44	.9251	.034	3.04	.9988	.0003
−1.72	.0427	1.737	−.12	.4522	.462	1.48	.9306	.031	3.08	.9990	.0003
−1.68	.0465	1.699	−.08	.4681	.440	1.52	.9357	.028	3.12	.9991	.0002
−1.64	.0505	1.661	−.04	.4840	.419	1.56	.9406	.026	3.16	.9992	.0002
−1.60	.0548	1.623	.00	.5000	.399	1.60	.9452	.023	3.20	.9993	.0002
−1.56	.0594	1.586	.04	.5160	.379	1.64	.9495	.021	3.24	.9994	.0001
−1.52	.0643	1.548	.08	.5319	.360	1.68	.9535	.019	3.28	.9995	.0001
−1.48	.0694	1.511	.12	.5478	.342	1.72	.9573	.017	3.32	.9995	.0001
−1.44	.0749	1.474	.16	.5636	.324	1.76	.9608	.016	3.36	.9996	.0001
−1.40	.0808	1.437	.20	.5793	.307	1.80	.9641	.014	3.40	.9997	.0001
−1.36	.0869	1.400	.24	.5948	.290	1.84	.9671	.013			
−1.32	.0934	1.364	.28	.6103	.275	1.88	.9699	.012			
−1.28	.1003	1.328	.32	.6255	.256	1.92	.9726	.010			
−1.24	.1075	1.292	.36	.6406	.237	1.96	.9750	.009			
−1.20	.1151	1.256	.40	.6554	.230	2.00	.9772	.008			
−1.16	.1230	1.221	.44	.6700	.217	2.04	.9793	.008			
−1.12	.1314	1.186	.48	.6844	.204	2.08	.9812	.007			
−1.08	.1401	1.151	.52	.6985	.192	2.12	.9830	.006			
−1.04	.1492	1.117	.56	.7123	.180	2.16	.9846	.005			
−1.00	.1587	1.083	.60	.7257	.169	2.20	.9861	.005			
−.96	.1685	1.049	.64	.7389	.158	2.24	.9875	.004			
−.92	.1788	1.017	.68	.7517	.148	2.28	.9887	.004			
−.88	.1894	0.984	.72	.7642	.138	2.32	.9898	.003			
−.84	.2005	0.952	.76	.7764	.129	2.36	.9909	.003			



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Year 2 Semester II

SEMESTER END EXAMINATION

Quality Management – BSCM 2210

- This paper consists of SEVEN questions on EIGHT (08) pages.
- Answer FOUR questions including question 01.
- Only Non-programmable calculators are allowed.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.
- Required documents are attached.

Date: 2020.03.05 Pass mark: 40% Time: 02 Hours

Question 01 (Compulsory)

(a) Quality is defined by the customer based on their requirements or it can be defined as the "fitness for purpose". Select five (05) different goods or services and identify quality characteristics as per the view of the consumer or the customer. (05 Marks)

(b) Service quality is different to the product quality. Consider the service of a third party logistics service provider and explain the major service characteristics seeking delighted customers. (20 Marks)

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Question 02

Quality is a way of environmental conservation. What is the ISO standard that provide guidelines for developing an EMS? Why organizations should look at the negative impact of the organizations towards the natural environment? Discuss the methods that an organization may use in a sound environmental management system. (25 marks)

Question 03

(a) Identify the below popular standards

(i) ISO 9000 -

(ii) ISO 50001 –

(iii) ISO 22000 –

(iv) ISO 27001 -

(v) ISO 45001 – (05 Marks)

(b) Supplier collaboration is a major aspect of quality and discuss 05 strategies that a manufacturer may use to enhance healthy supplier relations. (20 Marks)

Question 04

Write short notes on the five (05) selected topics mentioned below;

(a) Fish bone diagram
(b) Force field analysis
(c) 5 Why method
(d) 5S
(e) Muda, Mura, Muri
(f) Kanban cards (05* 05 Marks)

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Question 05

(a) Employee motivation is a key drive for delighting customers. What motivation tools can be used to enhance employee participation for quality management activities in an organization. (10 Marks)

(b) Supplier collaboration is a strategic management tool today in many industries specially when using JIT or similar systems. Explain 05 supplier collaboration enhancement methods seeking a reliable relationship. (15 Marks)

Question 06

(a) The data below are 20 samples taken from a bottle filling process of a soft-drink manufacturing firm. For each sample the mean and the standard deviation are calculated. Soft drink volume in the bottle is taken as the important quality characteristic.

Table 6.01: Sample data

Sample no.	Sample Values					Mean	Standard Deviation
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5		
1	200	201	201	197	195	198.80	2.68
2	191	206	193	196	191	195.40	6.27
3	204	195	198	209	206	202.40	5.77
4	208	203	192	195	191	197.80	7.40
5	190	194	202	198	203	197.40	5.46
6	203	203	193	206	201	201.20	4.92
7	201	199	208	210	205	204.60	4.62
8	200	193	204	205	198	200.00	4.85
9	205	208	202	190	200	201.00	6.86
10	199	194	192	200	206	198.20	5.50
11	210	207	203	207	194	204.20	6.22
12	208	209	191	194	196	199.60	8.32

13	196	199	202	195	200	198.40	2.88
14	204	192	194	196	206	198.40	6.23
15	203	205	192	193	202	199.00	6.04
16	192	209	200	193	202	199.20	6.98
17	199	203	203	196	193	198.80	4.38
18	204	204	207	196	190	200.20	7.01
19	190	192	191	202	204	195.80	6.65
20	193	199	210	194	198	198.80	6.76

(i) Calculate $\bar{S}$ for the above data. (02 Marks)

(ii) Calculate 3σ trial control limits for '*s*' chart. (05 Marks)

(iii) Discuss the validity of the trial control limits for s charts. (02 Marks)

(iv) Calculate $\bar{\bar{X}}$ for the above data. (02 Marks)

(v) Calculate 3σ trial control limits for $\bar{X}$ charts. (05 Marks)

(vi) Discuss the validity of the trial control limits. (02 Marks)

(vii) If trial control limits are invalid explain how to re-calculate it. (02 Marks)

(b) Apply the Western Electric rules to the control chart given below. Are any of the criteria for declaring the process out of control satisfied?

(05 Marks)

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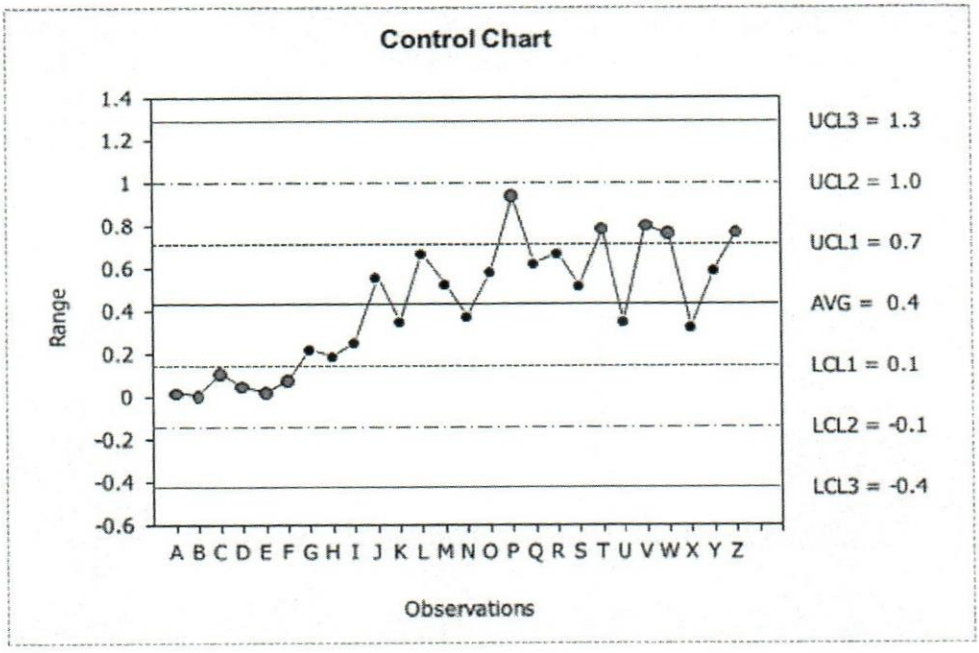

Question 07

(a) Briefly explain the manufacturer's risk and consumer's risk in deciding control limits of the Shewart control charts. (02 Marks)

(b) Discuss what is meant by Trial Control Limits (04 Marks)

(c) The data given below are 20 samples taken from IC manufacturing process. Number of defective ICs produced each day over 20 days given below. Suppose that the size of the random sample is varying.

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Table 7.01: Sample data

Sample No.	No. of defectives	Sample Size	Probability of defectives
1	14	50	
2	2	30	
3	12	50	
4	6	30	
5	13	50	
6	13	50	
7	8	30	
8	6	30	
9	7	40	
10	4	20	
11	1	20	
12	4	30	
13	10	50	
14	14	60	
15	13	60	
16	12	50	
17	3	20	
18	15	60	
19	15	60	
20	12	50	

(i) Calculate the probability of defective for 20 days. (Accuracy up to 02 decimal places) (04 Marks)

(ii) Calculate $\bar{P}$ (01 Marks)

(iii) Write the distribution for the number of defective diodes. (02 Marks)

(iv) Calculate 3σ control limits for p chart. (use average sample size method) (05 Marks)

(v) Discuss the validity of the trial control limits. (02 Marks)

(d) The following table shows the number of defects per group of in 25 successive group of 05 Tabs.

Group No.	Number of defects per group
1	19
2	15
3	10
4	10
5	30
6	11
7	18
8	16
9	12
10	10
11	29
12	22
13	18
14	29
15	30
16	18
17	15
18	15
19	17

20	14
21	16
22	25
23	22
24	23
25	12

(i) Calculate 3σ control limit for C charts (05 Marks)

----------END OF THE QUESTION PAPER----------

APPENDIX VI

Factors for Constructing Variables Control Charts

Observations in Sample, n	Chart for Averages: Factors for Control Limits A	A_2	A_3	Chart for Averages: Factors for Center Line c_4	$1/c_4$	Chart for Standard Deviations: Factors for Control Limits B_3	B_4	B_5	B_6	Chart for Standard Deviations: Factors for Center Line d_2	$1/d_2$	Chart for Ranges: Factors for Control Limits d_3	D_1	D_2	D_3	D_4
2	2.121	1.880	2.659	0.7979	1.2533	0	3.267	0	2.606	1.128	0.8865	0.853	0	3.686	0	3.267
3	1.732	1.023	1.954	0.8862	1.1284	0	2.568	0	2.276	1.693	0.5907	0.888	0	4.358	0	2.574
4	1.500	0.729	1.628	0.9213	1.0854	0	2.266	0	2.088	2.059	0.4857	0.880	0	4.698	0	2.282
5	1.342	0.577	1.427	0.9400	1.0638	0	2.089	0	1.964	2.326	0.4299	0.864	0	4.918	0	2.114
6	1.225	0.483	1.287	0.9515	1.0510	0.030	1.970	0.029	1.874	2.534	0.3946	0.848	0	5.078	0	2.004
7	1.134	0.419	1.182	0.9594	1.0423	0.118	1.882	0.113	1.806	2.704	0.3698	0.833	0.204	5.204	0.076	1.924
8	1.061	0.373	1.099	0.9650	1.0363	0.185	1.815	0.179	1.751	2.847	0.3512	0.820	0.388	5.306	0.136	1.864
9	1.000	0.337	1.032	0.9693	1.0317	0.239	1.761	0.232	1.707	2.970	0.3367	0.808	0.547	5.393	0.184	1.816
10	0.949	0.308	0.975	0.9727	1.0281	0.284	1.716	0.276	1.669	3.078	0.3249	0.797	0.687	5.469	0.223	1.777
11	0.905	0.285	0.927	0.9754	1.0252	0.321	1.679	0.313	1.637	3.173	0.3152	0.787	0.811	5.535	0.256	1.744
12	0.866	0.266	0.886	0.9776	1.0229	0.354	1.646	0.346	1.610	3.258	0.3069	0.778	0.922	5.594	0.283	1.717
13	0.832	0.249	0.850	0.9794	1.0210	0.382	1.618	0.374	1.585	3.336	0.2998	0.770	1.025	5.647	0.307	1.693
14	0.802	0.235	0.817	0.9810	1.0194	0.406	1.594	0.399	1.563	3.407	0.2935	0.763	1.118	5.696	0.328	1.672
15	0.775	0.223	0.789	0.9823	1.0180	0.428	1.572	0.421	1.544	3.472	0.2880	0.756	1.203	5.741	0.347	1.653
16	0.750	0.212	0.763	0.9835	1.0168	0.448	1.552	0.440	1.526	3.532	0.2831	0.750	1.282	5.782	0.363	1.637
17	0.728	0.203	0.739	0.9845	1.0157	0.466	1.534	0.458	1.511	3.588	0.2787	0.744	1.356	5.820	0.378	1.622
18	0.707	0.194	0.718	0.9854	1.0148	0.482	1.518	0.475	1.496	3.640	0.2747	0.739	1.424	5.856	0.391	1.608
19	0.688	0.187	0.698	0.9862	1.0140	0.497	1.503	0.490	1.483	3.689	0.2711	0.734	1.487	5.891	0.403	1.597
20	0.671	0.180	0.680	0.9869	1.0133	0.510	1.490	0.504	1.470	3.735	0.2677	0.729	1.549	5.921	0.415	1.585
21	0.655	0.173	0.663	0.9876	1.0126	0.523	1.477	0.516	1.459	3.778	0.2647	0.724	1.605	5.951	0.425	1.575
22	0.640	0.167	0.647	0.9882	1.0119	0.534	1.466	0.528	1.448	3.819	0.2618	0.720	1.659	5.979	0.434	1.566
23	0.626	0.162	0.633	0.9887	1.0114	0.545	1.455	0.539	1.438	3.858	0.2592	0.716	1.710	6.006	0.443	1.557
24	0.612	0.157	0.619	0.9892	1.0109	0.555	1.445	0.549	1.429	3.895	0.2567	0.712	1.759	6.031	0.451	1.548
25	0.600	0.153	0.606	0.9896	1.0105	0.565	1.435	0.559	1.420	3.931	0.2544	0.708	1.806	6.056	0.459	1.541

For $n > 25$.

$$A = \frac{3}{\sqrt{n}} \qquad A_3 = \frac{3}{c_4\sqrt{n}} \qquad c_4 \cong \frac{4(n-1)}{4n-3}$$

$$B_3 = 1 - \frac{3}{c_4\sqrt{2(n-1)}} \qquad B_4 = 1 + \frac{3}{c_4\sqrt{2(n-1)}}$$

$$B_5 = c_4 - \frac{3}{\sqrt{2(n-1)}} \qquad B_6 = c_4 + \frac{3}{\sqrt{2(n-1)}}$$

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Year 2 Semester II
SEMESTER END EXAMINATION
Marketing Management – BSCM2311

- This paper consists of EIGHT questions on SIX (06) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2020.03.03 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

Real estate sector – Sri Lanka

Real estate is one of the country's top revenue generating sources. As per (Chen, 2019) "Real estate is property made up of land and the buildings on it, as well as the natural resources of the land including uncultivated flora and fauna, farmed crops and livestock, water, and any additional mineral deposits". Not like other products and service people often buy and sell in markets, real estate is a unique commodity that is costly, immobile, relatively durable. (Gotham, 2006)

Country's post-war impressive growth has led this sector to have an increased demand for residential property from the high and middle-income sectors, and see more and more companies seeking grade A office spaces. Thanks to the rapidly growing demand for residential and commercial properties and the government policies for new housing projects, the country's construction industry has been growing ever since 2009. According

to NDB, since then its "growth has comfortably exceeded 7% despite global economic uncertainty during the period".

While the construction sector witnessed substantial growth in the 24 months leading up to 2018, domestic market forces including a falling rupee, warnings of an asset bubble and political instability have hindered growth. Foreign direct investments (FDI) in Sri Lanka has declined from US$ 1070 million in 2014 to US$ 970 million in 2015. And it was only US$ 450 million in 2016 to which Trade Minister Malik Samarawickreme reacted as being "extremely low by any standard". The most significant reason causing this is policy instability. As Shiran Fernando, an analyst at Colombo-based Frontier Research, puts it "it is a lot to do with policy inconsistency on some of the key criteria like taxes and land ownership". A policy is usually viewed inconsistent, when it is reversed or delayed. A prime example of this would be the VAT (value-added tax) increase. Its implementation was not only 6 months late, but previously the policy was also publicly opposed by the president, Maithripala Sirisena.

However, despite market disruptions, a number of key projects forged ahead in 2018, including Port City Colombo and the Hambantota Industrial Zone. Impressive economic growth since 2009 has supported Sri Lanka's property market. More employment opportunities, rising salaries and rapid rural-urban migration have all played a part in the expansion of housing and commercial properties. In recent years, increased investor appetite and a maturing economy have transformed Colombo into a dynamic modern city that still retains a sense of its past.

Due to increased urbanization, Sri Lanka's commercial hub, Colombo has been receiving increased attention from local and foreign investors. However, within the recent years,

due to factors like its skyrocketing property prices or the city's worsened traffic conditions, their focus has been shifting to exploring opportunities in the suburbs.

Yet, the challenge to cater to the increased demand for suburban properties is the country's infrastructure.

Even though property hunters are looking to relocate to the suburbs, their need to travel to Colombo for work purposes still exists. Thus, it is important to build efficient transportation links between the two. Presently, if you live in Galle or close to it, you can easily travel to Colombo using the Southern Expressway. Similarly, the Katunayake Expressway connects Colombo with the International Airport and the major travel destination, Negombo. Therefore, it is important to focus on enabling easy travel from areas such as Kandy, Trinco, Batticaloa, and Puttalam. Facilitated transportation times could potentially attract many investors to invest in properties all around Sri Lanka such as holiday homes, villas or commercial spaces for their businesses. This would ultimately vastly expand country's real estate market.

The Sri Lankan real estate industry is bound to boom. But ensuring the quality of the construction sector, showcasing policy stability to foreign investors to attract more FDI, and improving country's infrastructure will allow it to boom faster.

The above data has been based on a real-life situation, but details have been changes for assessment purposes and may not be an accurate reflection of reported news.

Using the given case scenario, you are required discuss four (04) macro environmental factors/ forces that have affected the Real Estate sector in recent years? You are required

to explain influence of each factor/ force in terms of opportunities and threats to the industry. (20 Marks)

Question 02

(a) With reference to the consumer buyer decision process, explain the five (05) stages a consumer may go through in buying a luxury apartment (05 Marks)

(b) Identify three (03) buyer characteristics that could influence their behavior in buying a luxury apartment. (15 Marks)

Question 03

As a Marketing Manager you might expect to have a well-resourced and managed Marketing Information System (MIS). Though, some information is available but neither the form nor the accessibility of the data is entirely suitable for marketing purposes. Using a company of your choice, prepare a brief report for the IT Manager that;

(a) Explain the importance of Marketing Intelligence as a source of gathering data for MIS and list four (04) different sources for gathering marketing intelligence. (08 Marks)

(b) Discuss how customer data can be collected using marketing research. (12 Marks)

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Question 04

As a Product Manager for a global cosmetics company, you believe that the Asian market for cosmetics is growing rapidly and offers considerable potential. You therefore wish to develop your product portfolio to exploit the market opportunities across the region.

(a) Assess three (03) suitable bases on which the Asian market for this product could be segmented (15 Marks)

(b) Discuss a suitable targeting strategy for your company to enter Asian Market. (05 Marks)

Question 05

As the Marketing Director of ASC components, a manufacturer of automotive components used in braking systems, you have prepared a detailed marketing plan to support the commercial activities.

(a) Explain decisions that company make when designing a suitable channel for the company (16 Marks)

(b) The business is under considerable price pressure and needs to find cost-effective ways of operating in a dynamic marketing environment. Explain two (02) price adjustment strategies that the company could consider. (04 Marks)

Question 06

As a Marketing Assistant working within the marketing department of a global internet-based clothing brand, you have been asked by your manager to produce a report for your marketing department that:

(a) Explain how the products levels could be used to gain competitive advantage for the company. (11 Marks)

(b) Recommend three (03) marketing communication tools that your organization could use to communicate with its target market effectively. (09 Marks)

Question 07

You are the Marketing Director of a manufacturer of high quality bathroom equipment, but sales and profits have been declining for some time. You have been asked to draw up a marketing plan that enable the company to identify and develop into new growth sectors. (20 Marks)

Question 08

You work for a large national insurance company based in a country of your choice. You have been asked by your manager to produce a report for all local and regional managers, that:

(a) Explain how the extended marketing mix elements could be used to gain competitive advantage for the company. (10 Marks)

(b) Briefly explain how the brand may be developed using a suitable framework. (10 Marks)

----------END OF THE QUESTION PAPER----------

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Year 2 Semester II

SEMESTER END EXAMINATION

Procurement Management – BSCM2409

- This paper consists of EIGHT questions on SIX (06) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.
- Supporting documents are attached.

Date: 2020.02.29 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

McDonalds Corporation

McDonald's Corporation is an American fast food company, founded in 1940 as a restaurant. It is considered as the world's largest restaurant chain by revenue, serving over 69 million of customers all around the world, in over 100 countries with more than 37,000 outlets.

(Source – McDonalds Corporation, Annual and Transition reports)

A hypothetical case study on McDonalds India

The McDonalds Supply Network in India is of its own kind. It is 100% outsourced and a Lean Supply chain with no backup staff and no frills. This operates with a Central Distribution Centre (CDC) that handles transportation, Procurement, Employee training and Operations Management for over 250 outlets in India. The procurement Department in the CDC procures most of the common items, yet the beverage procurement is done directly by the individual outlets and companies like Coca-Cola and Nestle supply them by their distributors. The CDC identifies the procurement needs for the coming month as: buns, sesame seeds, cheese slices, fish fillet patty, eggless mayonnaise, oil for grilling, two grilling machines, an ice cream dispenser, an

oven, 50 uniforms for employees. Also they wish to recruit the service of 10 part-time stewards and 15 delivery bike riders.
All materials and services are sourced by the suppliers in India through the CDC and individual outlets.

Answer the following questions based on the case study:

(a) Identify the procurement positioning of McDonalds India according to the Kraljic Portfolio purchasing Model (10 Marks)

(b) McDonalds India operates their procurement in a centralized decentralized structure. Explain the advantages and disadvantages of having procurement as a centralized, decentralized operating structure (05 Marks)

Answer part (c) with the knowledge of INCOterms 2010.

(c) Refer attachment 01 (05 Marks)

Question 02

(a) Suppliers will fix the prices of their products and services based on many factors. Discuss in detail, five (05) such factors that affects the pricing decisions of a supply organization. (10 Marks)

(b)
(i) Suppose 02 tons of copper is required per day for a micro electronic equipment production plant. Actual market prices of copper for 06 successive days is, 145,150,155,150,145,130 USD. With the budget buying policy, 300 USD will be spent every day by the procurement department.

Calculate the average market price.
Among budget buying and time budgeting policies, determine which is the best to be used when compared with the average market price? (06 Marks)

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(iii) With the highly fluctuating prices of petroleum related products, especially crude oil purchasing is done with the practice of hedging as a long-term price stabilization scheme. Explain the concept of hedging with futures contracts. (04 Marks)

Question 03

(a) Write short notes on any two (02) of the following: (05*02 Marks)

(i) OCDS of National Procurement Guidelines in 2017
(ii) Ethics of Procurement as stated by NPC
(iii) Methods of National Procurement

(b) Briefly explain the characteristics that a good supplier should possess, taking two (02) of the below industries as examples (05*02 Marks)

(i) Hotel Food and Beverage Suppliers
(ii) Automobile Suppliers
(iii) Medical Suppliers at a Hospital

Question 04

(a) Define what is e- procurement as per the CIPS. (03 Marks)

(b) List down and briefly explain the key processes in an e-procurement model. (03 Marks)

(c) Briefly describe the process of an online reverse auction with special criteria applicable (06 Marks)

(d) The McDonalds outlets Sri Lanka is presently doing the procurement activities through an electronic procurement system. Explain the advantages, disadvantages and risks of using such a system in performing procurement activities in different McDonalds outlets (08 Marks)

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Question 05

(a) Briefly explain the 03 levels of strategy. (03 Marks)

(b) Explain two (02) internal organizational environmental reasons that had made procurement function to shift to an extent of having more importance. (05 Marks)

(c) In 2020,2021 Sri Lanka is planning to explore and start the extraction of oil in Mannar and Cauvery Basins. Briefly explain the characteristics of the procurement function in an Extraction industry in relation to the 2021 strategy of oil exploration in Sri Lanka. (05 Marks)

(d) McDonalds Franchiser outlets in Sri Lanka needs International Sourcing for certain raw material/semi-finished products. Briefly discuss the reasons for International Sourcing, taking McDonalds fast food outlets as an example. (07 Marks)

Question 06

(a) Discuss the two (02) types of capital equipment with examples. (05 Marks)

(b) The procurement manager at the CDC is evaluating the options of purchasing the 'Ice-cream dispenser' to be used in a newly opening branch. He is evaluating the shortlisted three suppliers with the initial capital costs and the expected net cash inflows for a period of 04 years. The information is given in the table 6.1.

Assume that the Cost of Capital = 10%

Table 6.1: Ice Cream Dispenser = ICD

Supplier	Options	Total initial cost of the option USD ('000)	Total Cash Inflows USD ('000)			
			Year 1	Year 2	Year 3	Year 4
1	ICD 1	985	440	335.5	260	270
2	ICD 2	750	330	255	235.5	165
3	ICD 3	820.5	335	280.5	255	200

Recommend which option is the most suitable to be implemented and support your answer with the relevant reasons.

(Hint: Use the Discounted Payback Period approach and the NPV approach in evaluating)

What other functions of the CDC you would recommend discussing with, regarding this decision? (refer the case study)

Note: refer the attachment 02 where necessary (15 Marks)

Question 07

(a) Explain how the project procurement distinguishes from other procurement areas with any four (04) common elements of a project (04 Marks)

(b) Given in the Table 7.1 below are the activities and normal durations of a bridge renovation project done in Hambantota. Draw the network diagram and identify the critical path. (06 Marks)

Table 7.1:

Name	Activity	Normal Duration
a	1-2	4
b	1-3	1
c	2-4	1
d	3-4	1
e	3-5	6
f	4-9	5
g	5-6	4
h	5-7	8
i	6-8	1
j	7-8	2
k	8-10	5
l	9-10	7

(c) Explain the concept of subcontracting taking any kind of a construction project as an example. (05 Marks)

(d) What is BATNA. Explain the four steps that to follow to determine your NATNA in a given negotiation. (05 Marks)

Question 08

(a) Define what is 'outsourcing' and a 'core business activity' (05 Marks)

(b) The logistics planning manager of a large scale company in distributive and retail industry (a large scale supermarket chain) suggests in outsourcing some of the activities that are currently performed by internal staff, to a 3rd party logistics provider. He decides to outsource finished goods inventory management, finished goods warehousing and central procurement functions to be outsourced to a specialized party.

Critically comment on the above decision, while discussing the advantages, disadvantages, risks, challenges and strategies that could implement to avoid the negative impacts. (10 Marks)

(c) List down any five (05) key contractual elements that a Service Level Agreement should contain in an outsourcing contract with examples (05 Marks)

----------*END OF THE QUESTION PAPER*----------

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BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II

SEMESTER END EXAMINATION

Procurement Management – BSCM2409

Index No : .....

Attachment 01 (*Note : - Attach this answer sheet to the answer booklet provided)*

Question 01 (Compulsory)

(d) Fill in the blanks of the table given below with the respective responsibilities of the seller and buyer as of providing the service (You may denote 's' for the seller and 'b' for the buyer) (05 Marks)

COST												
INCO term	Name of the Term	Used Mode of Transportation (All/ Maritime transport only)	Supply Chain									
			Factory	1st Carrier	Origin Warehouse	Origin Terminal	2nd Carrier (Ship/ Air)	Destination Terminal	Destination Warehouse	3rd Carrier	Consignee
CPT											
FAS											
DAT											
FOB											
DDP											

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PV table

Periods	Rate											
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	12%	15%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.8929	0.8696
2	0.9803	0.9612	0.9426	0.9246	0.9070	0.8900	0.8734	0.8573	0.8417	0.8264	0.7972	0.7561
3	0.9706	0.9423	0.9151	0.8890	0.8638	0.8396	0.8163	0.7938	0.7722	0.7513	0.7118	0.6575
4	0.9610	0.9238	0.8885	0.8548	0.8227	0.7921	0.7629	0.7350	0.7084	0.6830	0.6355	0.5718
5	0.9515	0.9057	0.8626	0.8219	0.7835	0.7473	0.7130	0.6806	0.6499	0.6209	0.5674	0.4972
6	0.9420	0.8880	0.8375	0.7903	0.7462	0.7050	0.6663	0.6302	0.5963	0.5645	0.5066	0.4323
7	0.9327	0.8706	0.8131	0.7599	0.7107	0.6651	0.6227	0.5835	0.5470	0.5132	0.4523	0.3759
8	0.9235	0.8535	0.7894	0.7307	0.6768	0.6274	0.5820	0.5403	0.5019	0.4665	0.4039	0.3269
9	0.9143	0.8368	0.7664	0.7026	0.6446	0.5919	0.5439	0.5002	0.4604	0.4241	0.3606	0.2843
10	0.9053	0.8203	0.7441	0.6756	0.6139	0.5584	0.5083	0.4632	0.4224	0.3855	0.3220	0.2472
11	0.8963	0.8043	0.7224	0.6496	0.5847	0.5268	0.4751	0.4289	0.3875	0.3505	0.2875	0.2149
12	0.8874	0.7885	0.7014	0.6246	0.5568	0.4970	0.4440	0.3971	0.3555	0.3186	0.2567	0.1869
13	0.8787	0.7730	0.6810	0.6006	0.5303	0.4688	0.4150	0.3677	0.3262	0.2897	0.2292	0.1625
14	0.8700	0.7579	0.6611	0.5775	0.5051	0.4423	0.3878	0.3405	0.2992	0.2633	0.2046	0.1413
15	0.8613	0.7430	0.6419	0.5553	0.4810	0.4173	0.3624	0.3152	0.2745	0.2394	0.1827	0.1229
16	0.8528	0.7284	0.6232	0.5339	0.4581	0.3936	0.3387	0.2919	0.2519	0.2176	0.1631	0.1069
17	0.8444	0.7142	0.6050	0.5134	0.4363	0.3714	0.3166	0.2703	0.2311	0.1978	0.1456	0.0929
18	0.8360	0.7002	0.5874	0.4936	0.4155	0.3503	0.2959	0.2502	0.2120	0.1799	0.1300	0.0808
19	0.8277	0.6864	0.5703	0.4746	0.3957	0.3305	0.2765	0.2317	0.1945	0.1635	0.1161	0.0703
20	0.8195	0.6730	0.5537	0.4564	0.3769	0.3118	0.2584	0.2145	0.1784	0.1486	0.1037	0.0611
25	0.7798	0.6095	0.4776	0.3751	0.2953	0.2330	0.1842	0.1460	0.1160	0.0923	0.0588	0.0304
30	0.7419	0.5521	0.4120	0.3083	0.2314	0.1741	0.1314	0.0994	0.0754	0.0573	0.0334	0.0151
35	0.7059	0.5000	0.3554	0.2534	0.1813	0.1301	0.0937	0.0676	0.0490	0.0356	0.0189	0.0075
40	0.6717	0.4529	0.3066	0.2083	0.1420	0.0972	0.0668	0.0460	0.0318	0.0221	0.0107	0.0037

CINEC CAMPUS
Beyond A Graduate

Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
Course CODE: COM552

Year 2 Semester II

SEMESTER END EXAMINATION

Port management and Operations – BSCM 2408

- This paper consists of EIGHT questions on THREE (03) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2020.02.27 Pass mark: 40% Time: 03 Hours

Question 01: (Compulsory)

(a) What is a Sea Port? (05 Marks)

(b) List out sea related Navigational Facilities? (05 Marks)

(c) List out land based Port Facilities? (05 Marks)

(d) Name commercial port in Sri Lanka? (05 Marks)

Question 02

(a) What are the facilities available in the Port of Colombo? (05 Marks)

(b) What are the facilities available in the Port of Galle? (05 Marks)

(c) What are the facilities available in the Port of Trincomalee? (05 Marks)

(d) What are the expectations of port customers? (05 Marks)

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Question 03

(a) Explain why ports are measured by their performances? (05 Marks)

(b) Describe types of performance measures of ports? (05 Marks)

(c) What is port marketing? (05 Marks)

(d) What are the facilities available in the Port of Hambantota? (05 Marks)

Question 04

(a) List out Main Tariff Items of Sri Lanka Ports Authority Tariff? (05 Marks)

(b) What are the container terminals in the Port of Colombo and list terminal facilities? (05 Marks)

(c) List port related value-added logistic services? (05 Marks)

(d) What are the functions of Sri Lanka Ports Authority Logistics Division? (05 Marks)

Question 05

(a) Name different types of RO –RO Vessles? (04 Marks)

(b) What are the different Terminal Planning requirments for a RO – RO Terminal? (04 Marks)

(c) What are the facilties and human resoures required for Automobile Handing RO-RO Terminal? (04 Marks)

(d) List out safe operation best practices adopted for safe damage/accident free operation? (04 Marks)

(e) What are the Port / Terminal facilities that should be available to handle Cruise Ships? (04 Marks)

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Question - 06

(a) What are the different Liquid BULK cargo handling terminals,facilities and explain operation?

(10 Marks)

(b) What are the different Dry BULK cargo handling terminals,facilities and explan operation?

(10 Marks)

Question – 07

(a) What are the main terminal plannng requirments for a container terminal?

(04 Marks)

(b) Name four sizes/generations of STS Ship to Shore Gantry Cranes?

(04 Marks)

(c) Name four spreader attachementss that fix to STS Gantry Crane?

(04 Marks)

(d) What are the equipments used for Quay Transfer Operation?

(04 Marks)

(e) What are the equipments used for Storage Stacking Operation?

(04 Marks)

Question 08

(a) What are the different ship based & shore based cargo handing equipment?

(05 Marks)

(b) What are the factors that affect ship discharing and loading operation Hook Cycle Time?

(05 Marks)

(c) Describe Sri Lanka Ports Authority including its functions, powers & duties?

(10 Marks)

----------*END OF THE QUESTION PAPER*----------

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Faculty of Management and Social Sciences
Department of Logistics & Transport
BMgt Hons in Supply Chain Management
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Year 2 Semester II

SEMESTER END EXAMINATION

Management Information Systems for Supply Chains – BSCM2307

- This paper consists of EIGHT questions on THREE (03) pages.
- Answer FIVE questions including question 01.
- You may use appropriate graphs, diagrams, equation/s to prove or justify the answers.
- If you have any doubt as to the interpretation of the wording of a question, make your own decision, but clearly state it on the script.
- Write legibly.

Date: 2020.02.25 Pass mark: 40% Time: 03 Hours

Question 01 (Compulsory)

Through the indicated figure (Figure 01) explain "Enterprise Application Architecture" and how it affected for many functional areas? (20 Marks)

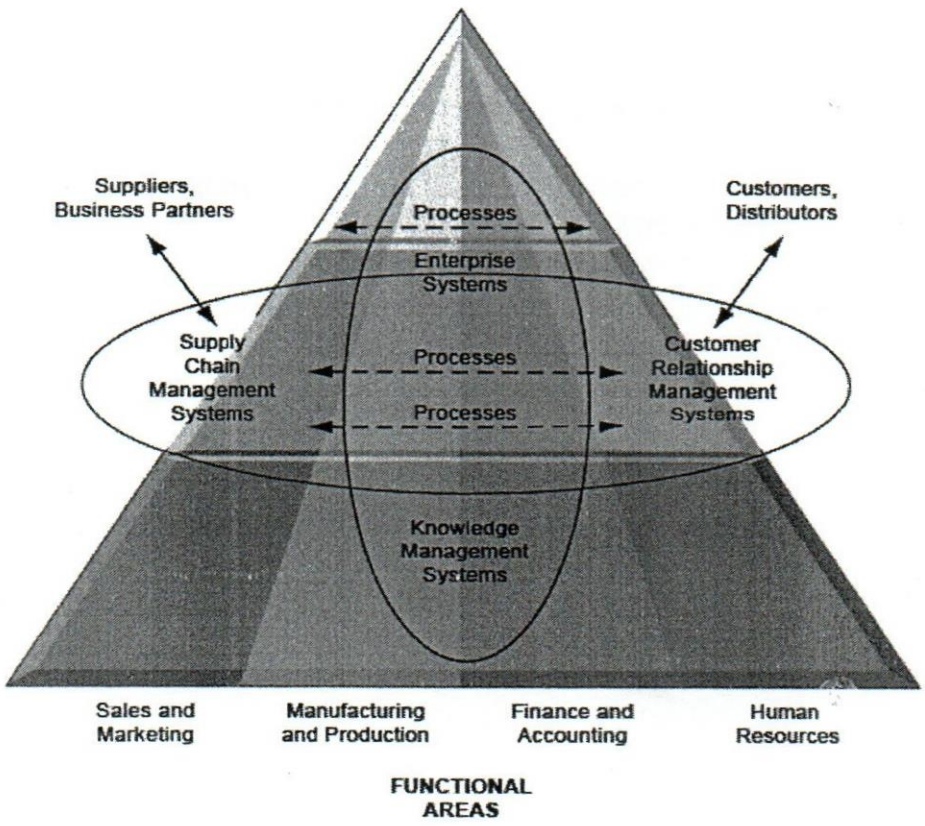

Figure 01

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Question 02

Briefly explain the following (20 Marks)

(a) Socio-Technical
(b) IT Governance
(c) Cookie in a website
(d) Web bug

Question 03

(a) What is "Virtualization"? Explain the use of it? (05 Marks)
(b) What does "Intellectual Property" mean? Explain it through challenges faced? (10 Marks)
(c) Explain the difference between "Grid Computing" and "Cloud Computing"? (05 Marks)

Question 04

(a) Explain the differences of "E-Business, E-Commerce, and E-Government" (05 Marks)
(b) Explain the differences of "Enterprise Resource Planning (ERP) system, Supply Chain Management (SCM) system, Customer Relationship Management (CRM) system, and Knowledge Management System (KMS)"? (10 Marks)
(c) Through an example explain "How Management Information System obtain data from the organization's Transaction Processing System"? (05 Marks)

Question 05

(a) What is "Collaboration? How is Collaboration and Team work important in present day working environment? Explain using Examples (05 Marks)
(b) Define "IT infrastructure" and how is it useful towards logistics or Supply Chain? (10 Marks)
(c) Describe how the problems of managing data resources in a "traditional file environment" are solved by a "database management system" (05 Marks)

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Question 06

(a) What is "Green Computing"? Explain with an Example (05 Marks)
(b) Difference between "Strategic, Tactical, and Operational management"? (10 Marks)
(c) What is "Autonomic Computing"? (05 Marks)

Question 07

(a) Explain through diagrams "LAN, MAN, WAN, CAN, PAN networks"? (05 Marks)
(b) How to improve Business Intelligence through "Data Modelling"? (10 Marks)
(c) Explain what is "Client / Server Architecture" using a diagram (05 Marks)

Question 08

(a) What is "Data Cleansing"? How is it important towards data analysis? (05 Marks)
(b) Describe the difference between "Packet Switching and Circuit Switch"? (10 Marks)
(c) Why are information systems vulnerable to "destruction, error, and abuse"? (05 Marks)

----------END OF THE QUESTION PAPER----------