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Daffodil International University
Department of Information Technology & Management
Faculty of Science & Information Technology
Final examination, Spring 2024
Course Code: ITM 304, Course Title: Production and Operation Management
Instructor: DAR

Date: Time:

Total Marks: 40

Exam instructions:

A) Answer all the Questions. [*at right side the allocated marks and corresponding course outcomes are indicated*]
B) During the exam you are not allowed to leave the exam hall to have water or restroom, but if you finish early, you may leave the hall submitting the script.
C) Do not keep your mobile phone or digital watch in your bag during the exam and keep all your belongings in a secure place.
D) Be respectful to the Exam ethics. Use own Stationary.

No		Questions	Marks	CLO Level
Q1	a)	***Outline*** the benefits and risk of employing lean production in the manufacturing sector.	5	CLO-1 L-1
	b)	Explain the characteristics of lean system.	3	CLO-1 L-2
Q2	a)	"Peyala" a renowned coffee & restaurant shop recently expanded their business to Singapore, a new location. ***Explain*** the benefits of expanding its operations in a global setting.	5	CLO-3 L-2
	b)	"Starbucks" is planning to start their operation in Bangladesh. ***Explain*** what types of challenges it may face while moving to an underdeveloped economic location.	5	CLO-3 L-2
Q3	a)	The owner of Genuine Subs, Inc., hopes to expand the present operation by adding one new outlet. She has studied three locations. Each would have the same variable costs (food, serving containers, napkins, etc.) of $0.98 per sandwich except location C, which costs $0.88. Moreover, 500 box Sandwiches are sold for $9.65 each in all locations. Rent and equipment costs would be $4100 per month for location A, $4200 per month for location B, and $4500 per month for location C. i) ***Identify*** which location would yield the greatest profits?	12	CLO-2 L-4
	b)	ii) ***Identify*** which location has the ***higher factor rating*** given the following information.		

Factor	Weight	A	B	C
Convenience	.15	80	70	60
Parking facilities	.20	72	76	92
Display area	.18	88	90	90
Shopper traffic	.27	94	86	80
Operating costs	.10	98	90	82
Neighbourhood	.10	96	85	75

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	c)	A manufacturer of Hanger is about to lose its lease, so it must move to another location. Two sites are currently under consideration. Fixed costs would be $8,000 per month at site A and $9,400 per month at site B. Variable costs are expected to be $5 per unit at site A and $4 per unit at site B. Monthly transportation cost is Tk 500 up to four thousand units for all sites. The Monthly demand has been steady at 8,000 units for the last several years and is not expected to deviate from that amount in the foreseeable future. iii) *Identify* which location would yield the *lowest cost* under these conditions.		
	d)	A clothing manufacturer produces women's clothes at four locations in Mexico. Relative locations have been determined, as shown in the table below. The location of a central shipping point for bolts of cloth must now be determined. Weekly quantities to be shipped to each location are also shown in the table. *Identify* the coordinates of the location and illustrate the centre of gravity point.		

Location	(x,y)	Weekly Quantity
A	5,7	15
B	6,9	20
C	3,9	25
D	9,4	30

Q4	a)	*Assume* that you are working in the R & D division. Identify and explain the series of phases during product design and development time.	5	CLO-3 L-2
	b)	*How* does Toyota's approach to lean production replace traditional manufacturing methods and optimize efficiency in the modern production system? Explain 5 lean production methods developed by Toyota.	5	CLO-4 L-2