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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
MBA III Semester Examinations, September /October - 2022
PRODUCTION AND OPERATIONS MANAGEMENT

Time: 3 Hours   Max.Marks:75

Answer any five questions
All questions carry equal marks
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1.a) What is the nature of production and operations function?
  b) Briefly explain how production function is related to other areas of functional management of the organization.   [6+9]

2.a) Define productivity. What is factor productivity? What is total productivity?
  b) With appropriate examples, explain flow and job shop production systems.   [6+9]

3.a) Explain why process design lags behind product design.
  b) What is the basis for deciding on the best candidate for value engineering in a manufacturing concern?
  c) What is the need for standardization?   [7+4+4]

4. For the location of an engineering plant three sites A, B and C are under consideration. The costs of various factors and other relevant aspects in respect of each site are listed below. It is required to make the final selection of the site.

Factors	Site A	Site B	Site C
Cost of land including development of land in Rs.000	50,000	49,000	45,000
Buildings in Rs.000	45,000	42,000	48,000
Labour charges Rs.	4,00,000	2,50,000	3,20,000
Power in Rs.	1,00,000	90,000	1,00,000
Water in Rs.	50,000	10,000	30,000
Cost of raw materials and other supplies in Rs.000	10,000	8,000	8,500
Freight incoming in Rs.	3,00,000	5,00,000	5,20,000
Freight outgoing in Rs.	2,00,000	3,50,000	4,00,000
Local taxes in Rs.	50,000	nil	30,000
Other factors			
Cost of living	Very high	low	moderate
Housing facilities	Excellent	Poor	good
Community facilities	Excellent	poor	good
Community attitude	Good	Encouraging	indifferent

Use composite measure method approach in evaluating the site and justify your choice the site.   [15]

5.a)   What is group technology layout?
  b)   What is REL chart? Illustrate its application with example.   [7+8]

6.   There are seven jobs that must be processed in two operations A and B. All seven jobs must go through A and B in that sequence A first, then B. The time required for processing the job in each of the process A and B is indicated below:

Job	Time for process A (hours)	Time for process B(hours)
1	9	6
2	8	5
3	7	7
4	6	3
5	1	2
6	2	6
7	4	7

a) Determine the optimal order in which the jobs should be sequenced through the process.
b) Draw a bar chart showing the sequence of jobs.
c) What is the total time for all seven jobs?   [15]

7.a)   What is Statistical Quality control?
  b)   Discuss the relationships among materials planning, production program and sales forecasts.   [6+9]

8.   ABC company manufacturing consumer durables requires 20,000 units of raw material per annum. The ordering cost is Rs.300 per order and inventory carrying cost is 30% per annum on average inventory. The purchase price quoted is Rs.10 per unit if the quantity purchased is less than 5000 units. A quantity discount of 5% on unit price is allowed if 10,000 units are purchased. Do you accept the discount offered by the supplier?   [15]

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