BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI

First Semester 2022-23

MSE G521 World-Class Manufacturing
Mid-Semester Test
(Closed Book)

Duration: 90 Min.   **Maximum Marks: 30**
Date: 31-10-2022

Q1 (a) List any four differences between conventional manufacturing and world class manufacturing
        organization.   [2]
    (b) Compare the tools and techniques adopted by American and Japanese WCM practitioners for
        (i) Cost (ii) Quality (iii) Flexibility (iii)Service. Write your answer in tabulated form only.   [4]
    (c) In order to find out what are best practices, the highest performing companies does in their
        organization. International Manufacturing Strategy Survey database were identified
        the 14 practices play in these companies. List the name of these 14 best practices.   [3]
    (d) Explain the four Ps of Marketing –mix and four Ps of Manufacturing-mix strategy.   [4]

Q2   (a) Write the Japanese term associated with following terms
         (i) The place where the real work is done   (ii) Production Smoothing
         (iii) Index Card   (iv) Breakthrough Improvement   [2]
     (b) Explain the ways to conduct the benchmarking. Also, explain the hurdles in benchmarking
         process with their causes and solutions.   [3]
     (c) How Hayes and Wheelwright's model is used to analyze the manufacturing strategy?
          Explain in brief.   [3]

Q3 (a) Write the full forms of following MCDM tools
        (i) ANP (ii) TOPSIS (iii) PROMIEHEE (iv) ELCTRE   [2]
   (b) Write the shortcomings of AHP.   [2]
   (c)Three WCM systems named WCM1, WCM2 and WCM3 are to be evaluated using TOPSIS. The five
      criteria used for the evaluation with weights and individual performance measures are given in Table 1
      Use TOPSIS to find the best world class manufacturing system.   [5]

Table 1: Evaluation of WCM systems

	Criteria	Weight	Alternatives		
			WCM1	WCM2	WCM3
1	Transportation cost	0.20	3	1	5
2	Profit	0.25	4	3	2
3	Resources consumption	0.10	5	4	3
4	Environmental Impact	0.20	4	2	3
5	Incentives	0.25	3	5	4

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