

GUJARAT TECHNOLOGICAL UNIVERSITY
MBA – SEMESTER –IV-EXAMINATION – SUMMER-2022

Subject Code: 4549285

Date: 22-07-2022

Subject Name: World Class Manufacturing

Time: 10:30 AM TO 01:30 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q. No.	Question Text and Description	Marks
Q.1	Definitions / terms / explanations / short questions based on concepts of theory/practical a) Define Kaizen b) What is Kanban? c) Brief all 5 “S” of 5 S d) Explain Just In Time e) What is SMED? f) What is Modular Product Design? g) Explain Andon ?	14
Q.2	(a) What is TPS (Toyota Production System) Explain it in brief. What are it’s advantages if it’s implemented in Indian Manufacturing system at MSME levels? What challenges are there in implementation of TPS at MSME Levels ?	07
	(b) Plant head Mr Ashis is suggested to work on 3 M , Muri, Mura , Muda to increase the plant productivity by consulting firm M/s Green M consulting . Kindly explain what it essentially means ?	07
	OR	
	(b) Write a note on Key tools and Concepts with in TPS and its relevance with productivity improvement.	07
Q.3	(a) Differentiate between Fiat’s WCM and Schonberger’s WCM practices on various parameters and state advantages and disadvantages of each difference you draw.	07
	(b) What is competitive advantage and how firm can gain competitive advantage through the implementation of WCM ? Suggest logical evidence to your justification.	07

OR

- Q.3 (a) Briefly explain TOPP and AMBITE contemporary practices with suitable examples where it can be implemented? 07
- (b) How Human Resource can contribute to the effective implementation of WCM ? How that can add the value ? What challenges HR department will face to ensure successful implementation of WCM practices at organization through people ? 07
- Q.4 (a) Differentiate between Flexible Automation System (FAS) and Programmable Automation System (PAS). Explain the difference with suitable example of your choice. 07
- (b) Write a note on “Agile Manufacturing” – Explain with suitable example of your choice. 07
- OR**
- Q.4 (a) Explain DFSS (Design for Six Sigma) , Briefly explain various phases of DAMIC approach. 07
- (b) What are various Seven types of Waste? Can plant following with SOP (Standard Operating Procedure) reduce some of this waste? In case if you agree if it can, how SOP will help in that reeducation? 07

Q.5

India's Global Competitiveness in WCM

A developed manufacturing sector is the necessary backbone behind any nations growth efforts as its the only sector, which generates regular employment across all socio-economic classes.

And in India, it seems that the manufacturing sector is again staging a comeback. While India Inc grew at a shade above seven percent the manufacturing sector grew in double digits.

Technology is spreading its wings into the manufacturing sector as well with companies making ground breaking innovation to deliver higher operational efficiencies. Shorter product launch cycles smarter supply chain networks, proliferation of CRM and deployment of lean manufacturing in product customizations are all indicators of the changing scenario.

There are still many issues which need to be focused upon, like infrastructure development, labour productivity and R&D spends. Efficiency and value engineering are now well recognised as key requirements for global competitiveness.

There are some examples already. SAIL became the first industrial enterprise to wheel its surplus power from captive power plant at Durgapur to its sister plant at Bhilai through the Inter Regional Transmission Line, taking advantage of Open Access under the provision of Electricity Act 2003, wheeling a total of 82 million units of power during the year.

Heating, tempering and rim spray durations were optimized through simulation studies, thereby reducing furnace cycle time by 1-1.5 hours and increasing heat treatment shop productivity by more than 30%.

Evereadys acquisition of BPL Soft Energy gives it scale - a vital action to eventually realize economies of scale - for example, in Zinc alone, and become more cost competitive.

TCs Paperboard Unit in Bhadrachalam in Andhra Pradesh is one of the most energy-efficient paperboard producers internationally, with a specific energy consumption of 36.1 Giga Joules (GJ) per tonne of paperboard manufactured, as compared to the international benchmark of nearly 41 GJ per tonne of paperboard manufactured.

All this helps as Indian manufacturers have started making their presence felt beyond the domestic boundaries too. Exports of engineering goods, which account for around 20% of total exports, are expected to almost double to \$28bn by 09-10 from \$15bn in 04-05.

Experts have estimated India's potential to cater to world requirement of automobiles in excess of \$30bn. Global automakers like BMW, Volkswagen, GM, Ford are moving their manufacturing base to India eyeing substantial cost advantages.

India has also led the way in reduction of lead-time for new product development in the auto ancillary sector. The development of the brake system in India takes six months; in Korea it is 8 months, in Germany 12-14 months. by 08-09.

Low cost and high quality manufacturing expertise is key for many companies. Moser Baer has become the world's 3rd largest optical media manufacturer and the lowest cost producer of CD recorders. Essel Propack is the world's largest laminated tube manufacturer.

Hindustan Inks, the Indian ink major, has the world's largest single stream, fully integrated ink plant that has capacity of one lakh tonnes per annum. The world's two top players - Netherlands based Mittal Steel and European firm Arcelor, each announced mega multimillion-dollar investment projects for India. Also, India is one of the world's largest diamond cutting and polishing centers. Nine of every 10 finished stones sold in the world pass through India. Now that's really globally competitive.

- (a) Discuss India's global competitiveness in manufacturing from the given details in the case. 07
- (b) Discuss the differentiations between SAIL and Eveready's strategies to achieve competitiveness and how they have achieved new milestones? 07

OR

- Q.5**
- (a) How technology and Proliferation of CRM can change the manufacturing philosophy and how they can contribute in value addition? 07
 - (b) Discuss the differentiations between Moser Bear and Hindustan Inks strategies to achieve competitiveness and how they have achieved new milestones? 07
