

JAIPURIA INSTITUTE OF MANAGEMENT, NOIDA**PGDM / PGDM (M) / PGDM (SM)****FIFTH TRIMESTER (Batch 2023-25)****ENDTERM EXAMINATION, JAN 2025**

Course Name	Total Quality Management (TQM)	Course Code	20528
Max. Time	2 hours	Max. Marks	40 MM

INSTRUCTIONS:

- This is a closed book exam.
- All questions are compulsory
- Calculators are allowed. Exchange of calculators is strictly prohibited.

Case - National Furniture

National Furniture is a large retail design and furniture store. The store often orders special merchandise at the request of its customers. However, the store recently experienced problems with the on-time delivery of these special orders. Sometimes the orders were never received, resulting in irate customers.

The process of fulfilling a special order begins with the sales associate who records the customer information and obtains approval from a manager to process the order. The sales associate puts the order form in a bin for the office manager to fax to the special order department at the regional office. When the office manager faxes the special order forms from the bin, she files them in a notebook.

If a problem arises with the order, the manager receives notification, and contacts the sales associate who took the order to decide what needs to be done next. Typical problems that are often observed include sales associates not filling out the order form completely or entering a request date that is impossible to fulfill. Sometimes the sales associate does not put the form in the proper bin, so the form never gets faxed. Other times, sales associates are asked to obtain more information from the customer, but fail to call the customer back, or do not inform the office associate to refax the form after getting additional information from the customer.

At the regional office, the special order department receives the fax from the store, reviews it, and informs the store if additional information is needed. When all the information is complete, they process the order. Sometimes they lose or misplace the form after it arrives on the fax machine, order the wrong merchandise, or fail to notify the store when additional information is needed or when the merchandise should be expected to arrive.

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Discussion the following Questions based on the Case.

- 1) Develop a process map for special orders. What steps might you suggest to improve this process? (10 Marks)
- 2) Construct a cause-and-effect diagram for identifying reasons why special orders are not received on time. (10 Marks)
- 3) Examine the relationship between the process map and the cause-and-effect diagram. How can they be used together to attack this problem? (10Marks)
- 4) LG Electronics manufacturers 100,000 circuit boards per month. A random sample of 1,000 boards is inspected every week for three characteristics. During a recent week, three defects were found for one characteristic; and one defect each was found for the other two characteristics. If these inspections produced defect counts that were representative of the population:
 - a. Determine the overall sigma level for this process? (5 Marks)
 - b. Evaluate the sigma level for the characteristic that showed three defects? (5 Marks)