

<b>Semester: Oct 24 to Dec. 24</b>		
<b>Maximum Marks: 50 Examination: ESE Exam Date: 12-01-2025 Duration:3 Hrs</b>		
<b>Programme code: 10</b> <b>Programme: MBA(PT) MM, FM, DSA</b>	<b>Class: TY</b>	<b>Trimester: VIII</b>
<b>College: K. J. Somaiya Institute of Management</b>	<b>Name of the department/Section/Center: Operations</b>	
<b>Course Code: 217P10C805</b>	<b>Name of the Course: Total Quality Management</b>	
<b>Instructions: 1. Question no. 1 is compulsory</b> <b>2. Out of the remaining, attempt any three questions.</b> <b>3. You may use the House of Quality format (enclosed) or copy/modify the same.</b> <b>4. Assume any missing data by providing logic for the same.</b>		

Question No.1		Max. Marks
	<p>1.A Scandinavian company wants to launch smart mobile phones in India. As the market is already cluttered, they want to make sure that they meet the customer demand in a systematic manner. They have hired you as management consultant to chalk out the launch. You carry out the survey to capture the voice of customer and find that any buyer looks for the following features while shopping a smart mobile phone.</p> <p style="text-align: center;">Size, Light weight, Easy to use, Reliable, Cheap, Big Screen, Long lasting battery, High quality camera</p> <p>Next you figure out the importance of above features from customers' angle on a scale of 1to10 and those are as follows:</p> <p style="text-align: center;">2, 4, 6, 6, 8, 6, 8 and 10 respectively.</p> <p style="text-align: center;">Technical descriptors to achieve voice of customer are as follows:</p> <p style="text-align: center;">Weight, Cost of production, Expected life, Operating System, Camera piece, Speaker, Battery and Glass</p> <p>You have picked up two fast selling competitive products A &amp; B and rated those on a scale of 1 to 5 from customers' angle for attributes indicated above in the voice of customer:</p> <p style="text-align: center;">Product A: 4, 3, 2, 3, 4, 4, 3, 3</p> <p style="text-align: center;">Product B: 4, 4, 3, 3, 2, 4, 3, 4</p> <p>You have also made a proto of your mobile and rated it from customer's angle on a scale of 1 to 5 for the attributes indicated above. These are as follows:</p> <p style="text-align: center;">3, 4, 2, 2, 3, 4,4,3</p> <p style="text-align: center;">Build a House of Quality by assuming any missing data and advise your client regarding:</p>	
Q 1(a)	Three most important product features.	10
Q 1(b)	Three most important technical descriptors which will support the most important product features.	10
Q2	What is an Operating Characteristic curve and how does it help to understand the Producer's Risk & Consumer's Risk? Is there any relationship between Acceptable Quality Level and Lot Tolerance Percent Defective with OC Curve? Draw an illustrative diagram and depict.	10
Q3	Apply Failure Mode Effect Analysis on any one of the following and show the improvement. a) Mobile phone b) Television c) Window air conditioner	10

Q4	<p>In the production of transformers any output voltage that exceeds +/- 25 volts is unacceptable to customer. Exceeding these limits results in an estimated loss of \$ 400. However, the manufacturer can adjust the voltage in the plant by changing a resistor that cost \$ 1.5.</p> <p><b>a)</b> Determine the Taguchi Loss Function</p> <p><b>b)</b> Suppose the nominal specification is 120 volts, at what tolerance should the transformer be manufactured?</p>	10
Q5	<p>How is Reliability different than Quality? What are the different modes to build reliability? Which mode will you select in case the reliability is of utmost importance?</p>	10