Graphic Era HILL UNIVERSITY
Established by an Act of the State Legislature of Uttarakhand (Adhiniyam Sankhya 12 of 2011)
University under section 2(f) of UGC Act, 1956

End Term (Odd) Semester Examination November 2025

Roll no.....

Name of the Course and semester: B. Tech. VIIth Semester (ME)
Name of the Paper: Total Quality Management
Paper Code: TME-714
Time: 3 hour Maximum Marks: 100

Note:

(i) All the questions are compulsory.
(ii) Answer any two sub questions from a, b and c in each main question.
(iii) Total marks for each question is 20 (twenty).
(iv) Each sub-question carries 10 marks.

Q1. (2X10=20 Marks)

a. Compare Product Inspection and Process Control in quality management. (CO1)
b. Explain the concept and significance of Statistical Quality Control (SQC) in process quality management. (CO1)
c. Discuss how control charts are used in monitoring process performance with suitable examples. (CO1)

Q2. (2X10=20 Marks)

a. What is Benchmarking? Discuss its evolution and benefits in improving quality standards. (CO2)
b. Describe the Procedure for Benchmarking and identify common pitfalls associated with it. (CO2)
c. Discuss how effective Buyer–Supplier Relationships contribute to total quality improvement. (CO2)

Q3. (2X10=20 Marks)

a. Explain Kaizen and 5S methodologies and their impact on continuous improvement. (CO3)
b. What is Quality Function Deployment (QFD)? Explain its benefits and phases with an example. (CO3)
c. Describe Taguchi's Concept of Robust Design and explain the significance of the Loss Function. (CO3)

Q4. (2X10=20 Marks)

a. Explain the types of quality audits and outline the general audit process. (CO4)
b. Discuss the importance of documentation and record-keeping in maintaining a quality system. (CO4)
c. Analyze the role of top management in system certification and continuous improvement. (CO4)

Q5. (2X10=20 Marks)

a. Discuss the roles and responsibilities of Green Belts, Black Belts, and Champions in Six Sigma implementation. (CO5)
b. Explain Failure Modes and Effects Analysis (FMEA) and describe its steps and benefits. (CO5)
c. Write short notes on Lean Manufacturing, Digital Quality, and Business Excellence Models (Deming Prize, Malcolm Baldrige). (CO5)