



K. K. Wagh Institute of Engineering Education & Research, Nashik
(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:VI
Class:TY	Program:B.Tech
Branch Code:ETC	Pattern:2022
Name of Course:Industry 4.0 and Industrial IOT	Course Code:ETC223017
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains 2 pages.
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. Question no. 1 and 2 are compulsory.

Marks CO

Question No. 1

- 1a) What is the typical architecture of an IIoT system, and how does it enable industrial operations? (6) CO1

Question No. 2

- 2a) What are the different topologies used in IIoT, such as star, mesh and bus? Explain. (6) CO2

Question No. 3

- 3a) What is the Publish-Subscribe pattern and why is it commonly used in IoT? (8) CO3

OR

- 3b) Explain how data flow differs between edge and fog computing. (8) CO3

- 3c) How does fog computing complement edge computing in IIoT systems? (8) CO3

OR

- 3d) How does COAP support RESTful architecture, and how does it differ from HTTP? (8) CO3

Question No. 4

- 4a) What are the key characteristics of big data in the context of IIoT (Volume, Velocity, Variety, Veracity)? (8) CO4

OR

- 4b) What is Machine Learning (ML), and how does it apply to IIoT for enhancing automation and decision-making? (8) CO4

- 4c) What is Software Defined Networking and how does it apply to IIoT? (8) CO4

OR

4d) What are the most common security threats in IIoT environments? (8) CO4

Question No. 5

5a) What is Industry 4.0, and how does it differ from previous industrial revolutions? (8) CO5

OR

5b) How do smart factories utilize data to enable predictive maintenance? (8) CO5

5c) What is digital transformation and how is it related to Industry 4.0? (8) CO5

OR

5d) What is the significance of cloud computing and cybersecurity in Industry 4.0? (8) CO5

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