

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER- VI EXAMINATION – SUMMER 2026

Subject Code:3161926

Date:10-06-2026

Subject Name: Industry 4.0

Time: 10:30 AM TO 01:00 PM

Total Marks:70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) Explain the following terms: (1) Industrial Revolution, (2) Industry 4.0, (3) Internet of Things **03**
- (b) Explain the concept of Cyber-Physical System in detail. **04**
- (c) Discuss design principles for Industry 4.0. **07**
- Q.2** (a) Discuss benefits of Industry 4.0. **03**
- (b) Write a short note on smart factories. **04**
- (c) How is India preparing for Industry 4.0. **07**
- OR**
- (c) Discuss the technologies behind Industrial revolution 4.0. **07**
- Q.3** (a) Explain IoRT with its components. **03**
- (b) Enlist industrial applications of AR. **04**
- Describe New Product and Process Development Phase in Industry 4.0. **07**
- (c) **07**
- OR**
- Q.3** (a) Explain cognitive architecture for cyber - Physical Robotics. **03**
- (b) Write differences between AR & VR. **04**
- Explain in detail the proposed Framework for Technology **07**
- (c) Roadmap about Industry 4.0. **07**
- Q.4** (a) What are the challenges of industry 4.0? **03**
- (b) Evaluate the role of AR for providing the training for a fresh engineer in industry. **04**
- (c) Justify the importance of various advanced sensors for Industry 4.0 implementation. **07**
- OR**
- Q.4** (a) Enlist the benefits of technology roadmap. **03**
- (b) Evaluate the role of AR for maintenance and repair in industry. **04**
- Justify the statement: “Requirement of Human-Robot collaborative manufacturing is growing.” **07**
- (c) **07**
- Q.5** (a) Explain comprehensive broadband structure. **03**
- (b) What is the availability of skilled workers for Industry 4.0. **04**

(c) Explain the role of legal framework for implementing Industry 4.0. **07**

OR

- Q.5** (a) What are the reasons of lack of digital strategy. **03**
(b) How digital strategy and data connectivity affect Industry 4.0? **04**
(c) Discuss the methods for protection of corporate data in Industry 4.0. **07**
