

GUJARAT TECHNOLOGICAL UNIVERSITY

BACHELOR OF ENGINEERING – SEMESTER 6 – EXAMINATION – SUMMER 2026

Subject Code: 3163212

Date: 26/05/2026

Subject Name: IT Infrastructure and Utilities

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) What is RTOS? Explain in detail. **03**
 - (b) List key features of Smart grids with example **04**
 - (c) Compare and contrast various types of Sensors, highlighting major advantages and disadvantages. **07**
- Q.2**
- (a) What is IoT? Which are basic components of IoT based applications? **03**
 - (b) Which are the different types of pressure sensors? Brief any two in detail. **04**
 - (c) Define various IOT standards and its relevance for IOT applications in detail. **07**
- OR
- Q.2**
- (c) Which are the typical characteristics of an IoT based application? List and Explain it. **07**
- Q.3**
- (a) Elaborate role of Artificial Intelligence in IoT applications. **03**
 - (b) Write classification of sensors used in IoT. **04**
 - (c) Compare and contrast AR and VR, **07**
- OR
- Q.3**
- (a) List key applications of Augmented reality in healthcare. **03**
 - (b) Write about AR applications in navigation. **04**
 - (c) Differentiate between VR displays with AR displays. **07**
- Q.4**
- (a) Define DAS, NAS, SAN. **03**
 - (b) What are Tier-1, Tier-2, and Tier-3 types of data center? **04**
 - (c) Discuss case study on Cisco Virtualized Multi-tenant Data Center CVD **07**
- OR
- Q.4**
- (a) List backup and recovery mechanisms required for organizations. **03**
 - (b) Discuss various network storage technologies available with key features. **04**
 - (c) Define multi-tier data center design model in detail. **07**
- Q.5**
- (a) Smart energy meter is helpful in saving energy consumption, elaborate with example. **03**
 - (b) How concept of home automation is helpful in smart living, explain. **04**
 - (c) Discuss case study on IoT in Smart Traffic System where in the city weekends some roads gets congested. **07**

OR

- Q.5**
- (a)** Discuss the key features of Wearable Devices, with example. **03**
 - (b)** Explain motion trackers and motion capture technologies for tracking? **04**
 - (c)** Discuss the design architecture of a smart flood management system which can handle cloudburst with suitable diagram. **07**
