

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VIII (NEW) EXAMINATION – WINTER 2023****Subject Code:2180709****Date:01-12-2023****Subject Name: IOT and Applications****Time:02:30 PM TO 05:00 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 are the research issues of Internet of Things? **03**
(b) What is Cloud Computing? Compare Public Cloud and Private Cloud in terms of use in an IoT system? **04**
(c) What is global value chain? Explain it with suitable example. **07**
- Q.2** (a) What is an IoT? What are the applications of Internet of Things? **03**
(b) What is MQTT? What is the role of MQTT in an IoT application? **04**
(c) Explain Layered architecture of Internet of Things. **07**
- OR**
- (c) Explain Reference model of Internet of Things. **07**
- Q.3** (a) What are data Accumulation and data Abstraction in a smart parking system? **03**
(b) Explain the role of IoT in Retailing industry. **04**
(c) Explain challenges and security issues involved in Internet of Things. **07**
- OR**
- Q.3** (a) Which are the various type of sensors used in IoT based applications? **03**
(b) Explain value Creation from Big Data and Serialization in IoT system. **04**
(c) Explain ETSI M2M high-level architecture with suitable use case. **07**
- Q.4** (a) What is 6LowPAN Protocol? How it can be used in implementation of smart village? **03**
(b) What is Node MCU? Compare it with Arduino and Raspberry Pi. **04**
(c) Explain the use of IoT in Oil and Gas industry with suitable use cases. **07**
- OR**
- Q.4** (a) What is the concept of Smart Village? What is the role of IoT in developing a Smart Village? **03**
(b) What is FP7 projects? What is the contribution from FP7 Projects in IoT systems? **04**
(c) Explain the use of IoT in health sector with suitable use cases. **07**
- Q.5** (a) Differentiate M2M and IoT. **03**
(b) What are the governance, privacy and security issues of an IoT based product? **04**
(c) Explain emerging industrial structure with the use of IoT. **07**
- OR**
- Q.5** (a) Discuss IoT functional model. **03**
(b) Explain Deployment & Operational view of an IoT system. **04**
(c) Design an IoT architecture for developing the smart industry. **07**
