

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-VII (NEW) EXAMINATION – WINTER 2024****Subject Code:3172424****Date:19-11-2024****Subject Name: Internet of Things in Power Electronics Applications****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) State applications of IoT. **03**
 (b) Define IoT. Discuss the future vision of IoT. **04**
 (c) Comment on how does IoT affect our day-to-day life and discuss interconnection of IoT with power electronics to create innovational ideas. **07**
- Q.2** (a) Describe various components of IoT. **03**
 (b) Comment on how the 5G technology will be helpful in the implementation of IoT for various applications throughout the country. **04**
 (c) Explain the difference between concept of IoT and M2M **07**
- OR**
- (c) Discuss Architectural Overview of M2M to IoT. **07**
- Q.3** (a) List merits and concerns of IoT. **03**
 (b) State IoT architecture layers with its functions. **04**
 (c) Discuss the functional, information, deployment and operational views of IoT reference architecture. **07**
- OR**
- Q.3** (a) Explain the concept of Big Data. **03**
 (b) Discuss role and importance of real time processors in IoT. **04**
 (c) Describe State of the art IoT architecture reference model. **07**
- Q.4** (a) Explain the requirement of interfacing devices in IoT. **03**
 (b) Explain the term Brownfield IoT and its importance. **04**
 (c) Discuss the role of IoT in Oil and Gas industry with an example. **07**
- OR**
- Q.4** (a) State contribution from FP7 Projects. **03**
 (b) Discuss the role & importance of IoT in home management. **04**
 (c) Give a detailed outline of IoT architecture. **07**
- Q.5** (a) Comment on Governance for IoT. **03**
 (b) State and explain any one power electronics application using IoT. **04**
 (c) Discuss the importance of security, privacy and trust in IoT Data platforms for smart cities. **07**
- OR**
- Q.5** (a) Describe in brief SMARTIE approach. **03**
 (b) Discuss Data Aggregation for the IoT in Smart Cities. **04**
 (c) Suggest IoT scheme that may be implemented for office with various loads like lights, fans, ACs, water purifiers, elevators, TVs, projectors, PCs, etc. **07**
