

**MCA II Semester (NEP) Degree Examination, Nov-2023**

**MATER OF COMPUTER APPLICATION**

**Paper: Internet of Things**

**Hours: 03**

**Max Marks: 70**

**Answer any Five of the following questions with Question No. 1 is Compulsory.**

1. a) Explain IoT World Forum standardization architecture. 7  
b) Briefly discuss the hierarchy of the Edge, Fog and Cloud. 7
2. a) Define the terms sensors, actuators and smart objects. Explain how sensors and actuators interact with the physical world. 7  
b) Explain the criteria addressed for each IoT access technology. 7
3. a) Explain MQTT message format and its types. 7  
b) Mention the key advantages of the IP suite for the Internet of Things. 7
4. a) Explain the need of data analytics for the Internet of Things with an example. 7  
b) Mention MPP shared-Nothing Architecture and NoSQL database. 7
5. a) What does status LED indicate in Raspberry Pi board and mentions various Linux flavors OS that supports Raspberry Pi. 7  
b) Explain Raspberry Pi board. 7
6. a) List out any seven sensors, categorize its type and describe its functionality. 7  
b) Discuss on CoAP message format and its fields. 7
7. a) List and explain the common challenges faced in Internet of Things. 7  
b) Give the structure of Arduino programming with an example. 7
8. Write a short note on the following: 5+5+4
  - a. SCADA
  - b. Purdue model for control hierarchy
  - c. IoT Security