

Total number of printed pages: 2 Programme(D/UG/PG)/Semester/ UIE816

2023

INTERNET OF THINGS

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

- Central Institute Of Technology
Kharhar : Rodoland
ESTD. : 2006
असतो मा सद्गमय
तमसा मा ज्ञानिगमय
1. a) Write the definition of IoT. Describe the two properties with respect to IoT: 3 + 2
i) self-adapting ii) self-configuring?
 - b) Describe an IoT system that shows the information and knowledge are 5
inferred from the data.
 - c) What is the role of 'things' and the 'Internet' in IoT? Provide examples. 5
 - d) Draw the functional block diagram of IoT logical design. 5
 2. a) How many IoT communication models are available? Describe an example 1 + 4
of IoT service that uses publish - subscribe communication model.
 - b) Define and describe the communication with REST APIs. What are the 5 + 5
architectural constraints of REST?
 - c) Determine the IoT levels for designing home automation IoT systems 5
including smart lighting and intrusion detection.
 3. a) Define M2M. Which communication protocols are used for M2M local 2 + 3
area networks?
 - b) Write the differences between M2M and IoT. 5
 - c) Describe how SDN can be used for various levels of IoT? 5
 - d) Describe how NFV can be used for virtualizing of IoT devices? 5
 4. What are the ten steps involved for designing an IoT system. Describe each 10 × 2
step briefly with the example of home automation system.

5. a) What is an IoT device? Describe IoT device with the help of basic building blocks. 2 + 5
- b) Describe how Raspberry pi can be used as an IoT device? 8
- c) Determine the IoT levels for designing home automation IoT systems including smart lighting and intrusion detection. 5
6. Write short notes on the following (any four). 4 × 5
- a) IoT protocols
- b) IoT enabling technologies.
- c) Role of a controller service in an IoT system
- d) IoT level 6 deployment templates
- e) Cloud storage models
7. a) What is the difference between python module and package? 5
- b) Write the python code for the following 3 × 5
- i) Print Fibonacci sequence using a 'while' loop.
- ii) Find prime numbers from 3 to 100 using the 'for' loop.
- iii) Create a module to track academic performance of a class.

