



Code No: 824AX

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****MCA IV Semester Examinations, December - 2019****INTERNET OF THINGS****Time: 3hrs****Max.Marks:75****Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

**PART - A****5 × 5 Marks = 25**

- 1.a) What is data collection in IoT? [5]
- b) Explain the difference between M2M and IoT. [5]
- c) How memory is managed in Python? [5]
- d) How the GPIO pins on Raspberry Pi categorized? [5]
- e) How cloud models relied on communication APIs? [5]

**PART - B****5 × 10 Marks = 50**

- 2.a) What impact will the IoT has on manufacturing sector?
- b) Explain the difference between Internet of Things and Cloud of Things. [5+5]

**OR**

- 3.a) What are the main challenges of the Internet of Things implementation?
- b) Discuss device to cloud and device to gateway communication model with their respective advantages and drawbacks. [5+5]

- 4.a) Explain the role of NFV in building IoT networks.
- b) Describe how NFV can be used for virtualizing IoT devices. [5+5]

**OR**

5. Explain four different device management requirements of IoT environment. Discuss some best practices for IoT systems management. [10]

- 6.a) Explain the difference between Java and Python with regard to exception handling.
- b) Discuss the optional clauses for a <Try-Except> block in Python. [5+5]

**OR**

- 7.a) Explain the dogpile effect in python and how can you prevent this effect?
- b) Explain database connection in Python Flask? [5+5]

8. Discuss Raspberry-Pi pulse width modulation (PWM) functions in Python. [10]

**OR**

- 9.a) How is Raspberry-Pi used in IoT?
- b) How is Raspberry-Pi different from Arduino? [5+5]

- 10.a) Explain real time reactions in API development for IoT environment.
- b) Explain Polling method to make an IoT device to respond immediately (real time reaction). Explain term "COMET" regarding to Polling method. [5+5]

**OR**

11. Discuss important factors that one should consider while selecting appropriate IoT web server. [10]

