

III B. Tech II Semester Regular Examinations, April/May - 2019**INTERNET OF THINGS**

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answer **ALL** the question in **Part-A**
3. Answer any **FOUR** Questions from **Part-B**
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PART -A

1. a) What is the role of things and internet in IoT? [2M]
- b) Define Physical Freemium. [2M]
- c) Which of the communication protocols are used by IoT? [2M]
- d) Define MQTT. [3M]
- e) What do you mean by data acquisition? [2M]
- f) Define cloud computing as per National Institute of Standards and Technology. [3M]

PART -B

2. a) Explain the different characteristics of IoT. [7M]
- b) Enlighten different IoT Protocols. [7M]
3. a) What are the digital and physical value-creation layers in an Internet of Things application? Explain [7M]
- b) Explain Modified OSI Stack for the IoT/M2M Systems. [7M]
4. a) Explain Smart Firewall Device. [7M]
- b) How do IoT devices communicate? Explain with suitable diagrams. [7M]
5. a) Explain about the advanced message queuing protocol. [7M]
- b) Explain the constrained application protocol (CoAP). [7M]
6. a) Describe about Integration and Enterprise Systems. [7M]
- b) Discuss in detail about Streaming Analytics Spatial Analytics. [7M]
7. a) Explain IOT cloud-based services using the Xively(Pachube/COSM). [7M]
- b) What is wireless sensor network? Discuss the benefits and limitations of wireless sensor networks. [7M]

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PART -A

- | | | | |
|----|----|--|------|
| 1. | a) | Define 802.11-WiFi. | [2M] |
| | b) | What is a Transmission Strategy? | [2M] |
| | c) | Define Smart Agriculture. | [2M] |
| | d) | What is IoT connectivity? | [3M] |
| | e) | Distinguish Product versus service business. | [3M] |
| | f) | Define Actuator. | [2M] |

PART -B

- | | | | |
|----|----|---|------|
| 2. | a) | What are some good resources to learn about Machine-to-Machine communication (M2M)? | [7M] |
| | b) | How does M2M communication work? Explain. | [7M] |
| 3. | a) | Explain various Business Model Patterns in the Internet of Things. | [7M] |
| | b) | What are the different types of Sensors used in IoT Network? | [7M] |
| 4. | a) | Explain about Industrial Internet of things (or IoT). | [7M] |
| | b) | Explain about Smart supply chain. | [7M] |
| 5. | a) | Explain different application layer protocols for the IoT. | [7M] |
| | b) | Which protocol is used to link all the devices in the IoT? Explain in detail. | [7M] |
| 6. | a) | Discuss the role of Data Analytics in Internet of Things (IoT). | [7M] |
| | b) | Explain about various components and business model patterns in the Internet of Things. | [7M] |
| 7. | a) | What is Radio Frequency Identification system? How does it work? Explain. | [7M] |
| | b) | What is a Wireless Sensor Network? Mention the applications of it. | [7M] |

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PART -A

1. a) Why do IoT Systems have to be Self-adapting and self-configuring? [2M]
- b) What is a Digital Lock-in? [2M]
- c) Define RFID. [2M]
- d) Explain FTP Protocol. [3M]
- e) Explain Core competence analytics. [3M]
- f) What is a wireless sensor network? [2M]

PART -B

2. a) What are the main challenges of an Internet of Things (IoT)? [7M]
- b) What kind of information do Internet of Things (IoT) objects communicate? [7M]
3. a) Draw and Explain ETSI M2M Service Architecture. [7M]
- b) Define ETSI M2M domains and High-level capabilities. [7M]
4. a) Explain Near Field Communication (NFC). [7M]
- b) Differentiate between BLE and NFC. [7M]
5. a) Summarize Internet connectivity principles in IoT. [7M]
- b) Compare and contrast HTTP and HTTPS protocols. [7M]
6. a) How does a data acquisition system work? Explain. [7M]
- b) Express how to organizing and analytics in IoT/M2M? [7M]
7. a) Describe different Cloud Service Models. [7M]
- b) Explain about the advanced features of Nimbits that helps in developing IoT applications. [7M]

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PART -A

1. a) Define 802.16- WiMax. [2M]
- b) Explain Network Service Capability Layer (NSCL). [2M]
- c) What are connected devices? [2M]
- d) What are the components of IoT? [3M]
- e) What is the significance of analyzing the data generated by IoT application? [3M]
- f) Write about Nimbits. [2M]

PART -B

2. a) How might wireless communications have an effect on the development and implementation of the internet of things (IoT)? Explain. [7M]
- b) What are the major Privacy and Security Issues in case of Internet Of Things (IoT)? [7M]
3. a) Explain M2M Enabling Technologies. [7M]
- b) Explain M2M/IoT Standardization – Protocol Stack. [7M]
4. a) Which of the devices are used to connect IoT devices to a home network? [7M]
- b) What are examples of IoT devices? Explain. [7M]
5. a) Discuss in detail about File Transfer Protocol. [7M]
- b) Explain about TELNET. [7M]
6. a) Describe about Business Model Patterns in the Internet of Things. [7M]
- b) Explain about Remote Usage and Condition Monitoring. [7M]
7. a) Summarize Sensor Network Technology in IoT. [7M]
- b) Explain about Participatory Sensing. [7M]
