

Code No: 156DR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, February - 2023

FUNDAMENTALS OF INTERNET OF THINGS

(Common to CE, EEE, ME, CSE, EIE, IT, MCT)

Time: 3 Hours

Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.

ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.

iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

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|------|---|-----|
| 1.a) | Define 6LoWPAN. | [2] |
| b) | Explain about transport layer. | [3] |
| c) | What is an actuator? | [2] |
| d) | What are various types of sensors? Explain. | [3] |
| e) | What are advantages of Raspberry Pi? | [2] |
| f) | Describe classes in Python programming. | [3] |
| g) | Define SDN. | [2] |
| h) | Discuss about data flow in MapReduce. | [3] |
| i) | What are advantages of Cloud? | [2] |
| j) | Explain about connected vehicles using IoT. | [3] |

PART – B**(50 Marks)**

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|-----------|--|-------|
| 2.a) | Explain about IoT communication APIs in detail. | |
| b) | What are communication protocols? Explain. | [5+5] |
| OR | | |
| 3.a) | Discuss about IoT functional blocks. | |
| b) | What are IoT protocols? Explain. | [5+5] |
| 4. | What is Arduino Programming? Explain about basics of Arduino coding. | [10] |
| OR | | |
| 5. | Explain in detail about interoperability in IoT. | [10] |
| 6. | Discuss about Python packages of interest for IoT in detail. | [10] |
| OR | | |
| 7. | Explain about implementation of IoT with Raspberry Pi. | [10] |
| 8. | What are SDN layers? Explain in detail with a neat diagram. | [10] |
| OR | | |
| 9.a) | Explain about Hadoop cluster setup. | |
| b) | Discuss about setting up a Storm cluster. | [5+5] |
| 10. | Explain about home automation using IoT in detail. | [10] |
| OR | | |
| 11. | Discuss about environment monitoring using IoT in detail. | [10] |