

**Code No: 156DR****JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, February/March - 2022****FUNDAMENTALS OF INTERNET OF THINGS****(Common to CE, EEE, ME, CSE, EIE, IT, MCT)****Time: 3 hours****Max. Marks: 75**

**Answer any five questions**  
**All questions carry equal marks**

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- 1.a) Discuss the characteristics of IoT.
- b) Explain how important are communication protocols when it comes to IoT? [5+10]
- 2.a) What is IoT? Explain evolutionary phases of the Internet.
- b) Which protocol is used to link all the devices in the IoT? Explain in detail. [5+10]
- 3.a) Explain M2M service layer standardization.
- b) Explain clearly, the procedure to interface an analog sensor with Arduino programming. [8+7]
- 4.a) What are the distributions supported by Raspberry Pi?
- b) Write a Python program on Raspberry Pi to blink an LED. [7+8]
- 5.a) There are two models of Raspberry Pi, A and B. Which model is suitable for IoT applications? Justify your answer with necessary technical details by comparing the above two models.
- b) How SDN can be used for various levels of IoT? [7+8]
- 6.a) Describe different Cloud Service Models.
- b) Explain Data visualization and its importance in IoT. [7+8]
- 7.a) Discuss the role of Data Analytics in Internet of Things (IoT).
- b) Construct the Design of Smart home with Raspberry Pi and other hardware devices with neat sketch. [7+8]
- 8.a) With a neat diagram, explain how actuators and sensors interact with physical world. Classify actuators based on energy type.
- b) Explain Smart city security architecture. [7+8]

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