NP University, Lovely!!!

Q1. Answer the following questions: (Any three) (marks 15)
1. What is the Internet of Things? Explain its components and applications.
2. Who are the major players in the IoT industry? Explain their contributions.
3. How can privacy and security be ensured in IoT devices? Explain the challenges and solutions.
4. What is web thinking for connected devices? Explain its benefits and limitations.
5. What are IP and TCP protocols in the Internet? Explain their functions and differences.
6. What are the differences between static and dynamic IP address assignment? Which one is better for IoT devices?

Q2. Answer the following questions: (Any three) (Marks 15)
1. How can costs and ease of prototyping be balanced? Explain the factors to consider.
2. What is the role of open source and closed source in prototyping for IoT devices?
3. What are electronics, sensors, and actuators in IoT devices? Explain their functions and types.
4. How can embedded computing be scaled up for IoT devices? Explain the challenges and solutions.
5. How can software be developed on Arduino and Raspberry Pi? Explain the programming languages and tools used.
6. What are the benefits of openness in Arduino and Raspberry Pi? Explain the role of open source software and hardware.

Q3. Answer the following questions: (Any three) (Marks 15)
1. What is physical prototyping? Explain its importance in IoT design.
2. What are the benefits of using nondigital prototyping methods? Give examples.
3. What are hinges and joints? How are they used in IoT design?
4. What is CNC milling? How is it used in physical prototyping?
5. What is an API? Explain its importance in IoT design.
6. What is Comet? How does it work with real-time reactions in IoT?

Q4. Answer the following questions: (Any three) (Marks 15)
1. What are the different types of memory used in embedded systems? Explain their differences.
2. What are some common debugging techniques used in embedded systems?
3. What is the Business Model Canvas? Explain its components and benefits.
4. Who is the business model for? How does it impact IoT startups?
5. What are the different types of networks used in IoT? Explain their differences.
6. What are some common infrastructure challenges faced by IoT startups? How can they be addressed?

Q5. Answer the following questions: (Any three) (Marks 15)
1. What is the design process for developing an IoT device? Explain the steps involved.
2. How are printed circuit boards (PCBs) designed and manufactured for IoT devices? Explain the process.
3. How are IoT devices assembled and tested during the manufacturing process?
4. What is certification and why is it important for IoT devices? Explain the certification process.
5. What is the Internet of Things (IoT)? Explain its characteristics and applications.
6. How can crowdsourcing be used in the development of IoT solutions? Explain its advantages and disadvantages.