KARMAVEER BHAURAO PATIL COLLEGE, VASHI

Department of Information Technology

Question Bank

Subject : Internet of Things Class: T.Y.B.Sc.IT

UNIT 1	
1.	What is IoT ? Explain with two examples.
2.	What are the design principles for connected devices write in short about each.
3.	What does it mean by 'Graceful Degradation' of applications/devices?
4.	Explain the concept of 'Calm and Ambient Technology' with regards to IoT.
5.	Explain the term 'Web Thinking' for connected devices in IoT.
6.	Explain the 'Affordences' with regards to the design of connected devices.
7.	Explain why is privacy important for connected devices in IoT.
8.	Write an overview of Internet Principles for IoT.
9.	Write the difference between HTTP and HTTPS.
10.	Write a short note on static and dynamic IP address.
11.	Write a short note on Internet protocol suit with its diagram.
12.	Explain IP address and DNS.
13.	Define Internet of Things (IoT). Explain any 5 flavors of IoT
14.	What is making Internet of Things
15.	Define the following:- A. Small Pieces. B. Loosely Joined. C. First-Class Citizens On The Internet. D. graceful degradation.
16.	Explain Hashes in detail.
17.	How to keep or maintain privacy of IOT devices?
18.	What do you mean by magic as metaphor?
19.	Whose Data Is It Anyway? Justify it.
20.	Explain internet Communication and list its different kinds of protocols.
21.	Give the brief introduction about Internet Protocol (IP), TCP.
22.	Define the following term with respect to IOT: A. IP addresses. B. DNS. C. Static IP address assignment. D. Dynamic IP address assignment
23.	Explain TCP/IP protocol suite with diagram.
24.	Explain the role of UDP and MAC Address in IOT.
25.	What is the use of IPv6 in IOT? Explain its Power and Conclusion also.
26.	What do you mean by HTTP ports? List out other common ports.
27.	List and Explain Protocol presented at application layer.
28.	Explain the process of Static IP assignment and Dynamic IP assignment
29.	Explain the encrypted HTTP and other application layer protocols
30.	Write short note on MAC Addresses and TCP & UDP ports

UNIT 2	
1.	Write Short notes on A. Sketching B. Familiarity C. Cost Versus Ease of Prototyping
2.	List and explain the challenges in the Prototyping and Production
3.	Differentiate between open source and closed source
4.	What are the Advantages and Disadvantages of Open Source Platform
5.	What are the Advantages and Disadvantages of Closed Source Platform
6.	Explain why should you mix the open and closed source for the Internet of Things?
7.	Explain how open source can be used as a competitive advantage and as a strategic weapon
8.	Discuss the concept of tapping into the community
9.	Write short note on Electronics and its classification
10.	Write short note on A. Sensors B. Actuators
11.	Explain how electronics can be scaled up
12.	Write Short notes on A. Microcontrollers B. System-on-Chips
13.	List and explain the factors that are important while choosing your platform
14.	Write short note on Arduino
15.	Explain in detail the process of developing on Arduino
16.	Explain the process of Debugging in Arduino
17.	Write short note on the hardware of Arduino
18.	Explain the feature of openness in Arduino by considering the following applications A. Good night Lamp B. Botanicalls C. BakerTweet
19.	Write short note on Raspberry Pi
20.	Explain in detail the process of developing on Raspberry Pi
21.	Explain the process of Debugging in Raspberry Pi
22.	Write short note on the hardware of Raspberry Pi
23.	Explain the feature of openness in Raspberry Pi by considering DoES Liverpool's DoorBot
24.	Write short note on BeagleBone Black
25.	Explain in detail the process of developing on BeagleBone Black
26.	Explain the feature of openness in BeagleBone Black by considering Ninja blocks
27.	Write short note on Electric Imp
28.	Explain in detail the process of developing on Electric Imp
29.	Explain how the proof-of-concepts are implemented for some of the Internet of Things devices taking into consideration A. Bubblino B. Good Night Lamp
30.	Write Short notes on: A. Openness B. Form Factor C. Planner D. Impees E. Programming Language

UNIT 3	
1.	Explain the preparation phase in prototyping the physical design
2.	Explain the terms Sketch, Iterate, Explore
3.	List and explain the Non-Digital methods
4.	Write short note on Laser Cutting
5.	Explain in details the factors that are focussed while choosing a laser cutter
6.	Write a short note on the software used for the laser cutter
7.	List and explain various types of hinges and joints with diagrams
8.	Write short note on 3D printing
9.	List and explain different types of 3D printing
10.	Write short note on the software the software used for 3D printing
11.	Explain in detail CNC Milling
12.	Write short note on CNC milling by considering the following: A. Axes of movement B. Software for CNC milling
13.	Write Short note on Repurposing
14.	Write Short note on Recycling
15.	Explain API in detail in context with A. Mashing up API's B. Scrapping C. Legalities
16.	Write short note on Clockodillo
17.	Explain how security is maintained in APIs
18.	Explain how APIs are implemented
19.	Explain how Curl is used for testing
20.	Write short note on Polling
21.	Write short note on Comet
22.	Write a short note on MQTT protocol
23.	Write a short note on XMPP protocol
24.	Write a short note on CoAP protocol

UNIT 4	
1.	Write short note on Memory Management and explain different types of memories
2.	Explain how the RAM can be utilized to optimum limit
3.	Write short notes on A. Performance B. Battery Life
4.	Write short note on Libraries, list and explain different libraries available
5.	Write short note on Debugging
6.	Discuss the history of business model in context with A. Space and Time B. From Craft to Mass production C. Long trail of Internet
7.	Explain with diagram the Business Model Canvas
8.	Discuss who is the business model for?
9.	List and explain different types of the models that Internet of Things companies have used
10.	Write short note on: A. Subscriptions B. Customization
11.	Explain how infrastructure can be provided in context to the sensor network
12.	Explain how the funding can be done to the internet of things startup
13.	Write short note on Venture Capital
14.	Write short note on Government Funding
15.	Write short note on Crowdfunding
16.	What are Lean Strtups explain in detail

UNIT 5	
1.	Discuss how the kits are designed
2.	Discuss how the printed circuit boards are designed
3.	Discuss the software choices made during designing the printed circuit boards
4.	Explain in detail the design process of a PCB
5.	Explain how manufacturing of Printed Circuit Boards is carried out
6.	Write short notes on: A. Etching Boards B. Milling Boards
7.	Write short note on Assembly of PCB
8.	Write short note on Testing of PCB
9.	Explain how the mass production of cases and other fixtures is done
10.	Explain in detail about Certification
11.	Explain in detail how the software can be scaled up
12.	Write short note on: A. Deployment B. Correctness and Maintainability
13.	Write short note on: A. Security B. Performance
14.	Write short note on privacy in Internet of Things
15.	Explain in detail Crowdsourcing
16.	List and explain the environmental concerns that should be running on the Thing
17.	Discuss how Internet of Things is a part of the solutions
18.	Define and explain the Open Internet of Things