University of Mumbai
Question Bank

Program: **Electronics Engineering**
Curriculum Scheme: Rev2016
Examination: BE Semester VIII
Course Code: ELX801 and Course Name: Internet of Things
Max. Marks: 80

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	Each question carry 2 marks
1.	Which of the following protocol doesn't come under Application layer of IoT protocols?
Option A:	HTTP
Option B:	CoAP
Option C:	UDP
Option D:	XMPP
2.	Which of the following statement is true?
Option A:	WebSocket enables unidirectional communication over a single UDP connection
Option B:	WebSocket enables bidirectional communication over a single UDP connection
Option C:	WebSocket enables bidirectional communication over a single TCP connection
Option D:	WebSocket enables unidirectional communication over a single TCP connection
3.	NFC is designed for use by devices which are at_____ to each other.
Option A:	Long distance
Option B:	Close proximity
Option C:	Very long distance
Option D:	Medium distance
4.	_____is 5th step involved in IoT Design Methodology.
Option A:	Functional view specification
Option B:	Service specifications
Option C:	operational level specification
Option D:	IoT level Specification
5.	Cloud Computing model is everything as a _____model
Option A:	Service
Option B:	Operating
Option C:	Process
Option D:	Data storing
6.	_____ is an online cloud based data storage infrastructure for storing and retrieving a very large amount of data
Option A:	Amazon EC2
Option B:	Amazon S3
Option C:	Amazon RDS
Option D:	Amazon AutoScaling
7.	WSN nodes are

Option A:	Self configuring
Option B:	Self discovering
Option C:	Self healing
Option D:	Self discovering, Self configuring, Self healing
8.	Zigbee is a IEEE _____standard
Option A:	802.15.1
Option B:	802.15.2
Option C:	802.15.3
Option D:	802.15.4
9.	In smart car parking system , _____are used to detect whether the slot is empty or occupied.
Option A:	LCD
Option B:	LEDs
Option C:	Sensors
Option D:	Displays
10.	Nimbits --------- capabilities are offering distributed cloud.
Option A:	SaaS
Option B:	QoS2
Option C:	QoS1
Option D:	PaaS
11.	What refers to acquiring the data from IOT/M2M devices.
Option A:	Data acquisition
Option B:	Data repository
Option C:	Data collecting
Option D:	Data transparency
12.	The job of an MQTT broker is
Option A:	To filter messages based on topics
Option B:	To produce topics
Option C:	To distribute topics to publishers
Option D:	To deny access to subscribers
13.	CoRE environment constraints are
Option A:	data size is around 1000 Bytes
Option B:	Data routes as in ROLL network
Option C:	Devices are awake most of the time

Option D:	Connectivity for short periods
14.	Smart irrigation system is an example of
Option A:	IoT level-1
Option B:	IoT level-2
Option C:	IoT level-3
Option D:	IoT level-4
15.	Which is the first step involved in IOT system Design
Option A:	Process specification
Option B:	Domain Model Specification
Option C:	Purpose and requirement specification
Option D:	Controller level specification
16.	Server Management does not include:
Option A:	Performing periodic system updates
Option B:	Security of Systems and Protection
Option C:	Maintaining Confidentiality and privacy of data
Option D:	Data Validation
17.	Platform-as-a-Service model facilitates -
Option A:	Required hardware and software in the cloud
Option B:	Development environment for applications
Option C:	Online applications customized according to user's need
Option D:	Data analysis
18.	REST APIs follow the
Option A:	Request response communication model
Option B:	Pub-sub model
Option C:	Push pull model
Option D:	Exclusive Pair Communication Model

19.	What does QoS stands for
Option A:	Quality of Signal
Option B:	Quantity of Signal
Option C:	Quantity of Service
Option D:	Quality of Service
20.	Which sensor can detect presence or absence of vehicle in smart parking system
Option A:	Particle sensor
Option B:	Ultrasonic sensor
Option C:	Light sensor
Option D:	DHT Sensor

Subjective Questions

	Each Question Carries 05 Marks
1.	Why do IoT systems have to be self adapting and self – configuring?
2.	List the IoT protocols used in Link layer and explain any two in detail.
3.	Differentiate between M2M and IoT.
4.	What is the use of SPI and I2C interfaces on Raspberry Pi?
5.	Explain IPv4 and IPv6.
6.	Describe in short various steps in IoT design methodology.
7.	Explain four cloud deployment models?
8.	Describe data generation from IoT/ M2M devices.
9.	What are the technological issues in RFID IoT system design?
10.	Compare IoT and M2M communication.
11.	Explain the physical Design of IoT.
12.	Write a short note on IP addressing in IoT
13.	Explain the need and purpose of Information Model Specification.
14.	How is cloud used as a database in IoT applications.
15.	List the latest features in Xively cloud platform.
16.	Examine and discuss the use of GPIO pins and what is the use of SPI and I2C interfaces on Raspberry Pi.

17.	Explain Piggyback and Separate responses in context with CoAP.
18.	What are the features of REST architectural style.
	Each Question Carries 10 Marks
1.	Describe different IoT communication models in details.
2.	Describe in detail with suitable example CoAP and MQTT protocols used in application Layer.
3.	Define various levels of IoT systems and explain Level 1 and Level 2 with suitable diagram.
4.	Write short note on i)Mode service ii) State service iii)Controller service of fifth step of IoT methodology i.e. Service specification.
5.	Give a brief overview of Data acquiring, organizing and processing in Iot systems.
6.	What are IoT devices? Explain Raspberry Pi model in details.
7.	Show diagrammatically and explain the communication Gateway and proxies between CoAP objects and Web applications
8.	Compare LORA,NBIoT, CAT LTE MI,SIGFOX
9.	Explain Service Specification model and derive services for home automation IoT system.
10.	Describe devices data and steps in acquiring and storing data for an application service or business process.
11.	Design ATM surveillance system server and list the functions of each component and module in ATM surveillance system server.
12.	Sketch the three layer architecture of Wireless Sensor Node. List the security attacks in WSN.