Course Code: 20CS1013 **R20**

SIDDARTHA INSTITUTE OF SCIENCE AND TECHNOLOGY:: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code: Cloud and IOT Security (20CS1013) **Course & Branch :** B. Tech - CCC

Year & Sem : IV B.Tech & I-Sem **Regulation :** R20

UNIT –I
CLOUD COMPUTING FOUNDATION, WORKING OF CLOUD COMPUTING

1	**a**	Define cloud computing. Why is cloud necessary? Explain the benefits of cloud computing.	[L1][CO1]	**[6M]**
	b	Outline the characteristics of cloud computing. What are the uses of cloud computing?	[L2][CO1]	**[6M]**
2	**a**	Summarize briefly about the History of Cloud Computing.	[L2][CO1]	**[6M]**
	b	Express importance of Cloud Computing in the Current ERA.	[L6][CO1]	**[6M]**
3	**a**	With the neat sketch, Explain Key Elements of Cloud Computing.	[L2][CO1]	**[6M]**
	b	Explain in detail issues in migrating to Cloud Computing.	[L2][CO1]	**[6M]**
4	**a**	Illustrate in detail process to migrate to Cloud Computing.	[L3][CO1]	**[6 M]**
	b	How cloud computing is classified? Explain it in detail.	[L2][CO1]	**[6M]**
5	**a**	Differentiate between private and public clouds.	[L4][CO1]	**[6M]**
	b	State and explain the factors to determine public or private cloud?	[L2][CO1]	**[6M]**
6	**a**	With a neat sketch, Discuss about the cloud computing infrastructure	[L2][CO1]	**[6M]**
	b	Discuss in detail about Cloud Service Models	[L2][CO1]	**[6M]**
7	**a**	With neat sketch, compile various Cloud Deployment Models.	[L6][CO1]	**[6M]**
	b	Differentiate between traditional data centres and a cloud?	[L4][CO1]	**[6M]**
8		Discuss about Cloud Life Cycle Model.	[L2][CO1]	**[12M]**
9	**a**	Differentiate SaaS with IaaS.	[L4][CO1]	**[6M]**
	b	Give your opinion on adoption of cloud by operators around the world.	[L5][CO1]	**[6M]**
10	**a**	List Pros and Cons of Cloud Computing and Services.	[L1][CO1]	**[6M]**
	b	Explain in detail the reference model for cloud computing.	[L2][CO1]	**[6M]**

Course Code: 20CS1013 **R20**

UNIT –II
CLOUD ARCHITECTURE, VIRTUALIZATION

1	**a**	Explain in detail about the Cloud Computing Logical Architecture.	[L2][CO2]	**[6M]**
	b	Discuss how to develop holistic cloud computing reference model.	[L2][CO2]	**[6M]**
2	**a**	Sketch and discuss about the Cloud System Architecture.	[L3][CO2]	**[6M]**
	b	Discuss about Single Cloud Site Architecture.	[L2][CO2]	**[6M]**
3	**a**	Explain in detail about Redundant 3-Tier Cloud Architecture.	[L2][CO2]	**[6M]**
	b	Describe in detail about multi datacenter Cloud Architecture.	[L1][CO2]	**[6M]**
4	**a**	Explain with diagrammatic illustration about the private, public, hybrid cloud deployment model.	[L2][CO2]	**[6M]**
	b	Explain with diagrammatic illustration about the cloud deployment model.	[L2][CO2]	**[6M]**
5	**a**	Tabulate the differences between Public, private and hybrid cloud deployment models.	[L1][CO2]	**[6M]**
	b	Express opinion about cloud governance.	[L6][CO2]	**[6M]**
6	**a**	What is meant by Server Virtualization? Explain it in detail with suitable diagram.	[L2][CO2]	**[6M]**
	b	Explain in detail about the Virtual Cluster, mention its benefits.	[L2][CO2]	**[6M]**
7		List types of Virtualization. Examine various types of virtualization.	[L3][CO2]	**[12M]**
8		What is meant by Server Virtualization? Enumerate its types, list pros and cons of server virtualization.	[L1][CO2]	**[12M]**
9	**a**	What is meant by OS Virtualization? Explain it in detail with suitable diagram.	[L2][CO2]	**[6M]**
	b	Prepare and list various pitfalls of virtualization.	[L3][CO2]	**[6M]**
10	**a**	Explain it detail about Storage Virtualization and Network Virtualization.	[L2][CO2]	**[6M]**
	b	What is virtualization Application? List benefits and limits of application virtualization.	[L2][CO2]	**[6M]**

Course Code: 20CS1013 **R20**

UNIT –III

CLOUD COMPUTING SECURITY FUNDAMENTALS, CLOUD COMPUTING RISK ISSUES

1	**a**	Identify and list Cloud Security Objectives.	[L3][CO3]	**[6M]**
	b	Explain about Confidentiality in Cloud Software Assurance.	[L2][CO3]	**[6M]**
2	**a**	Interpret Integrity and Availability in Cloud Software Assurance.	[L3][CO3]	**[6M]**
	b	List and Explain about Cloud Security Services.	[L1][CO3]	**[6M]**
3		Discuss about Cloud Security Design Principles.	[L2][CO3]	**[12M]**
4	**a**	What is meant by defense in depth? How it works? What are the elements of DiD?	[L1][CO3]	**[6M]**
	b	Discuss in detail about the cloud security policy implementation and decomposition.	[L2][CO3]	**[6M]**
5		Examine in detail about the CIA Triad. Deduce its importance in cloud security.	[L4][CO4]	**[12M]**
6	**a**	How confidentiality of data is entrusted? Explain methods/functions employed.	[L2][CO4]	**[6M]**
	b	List and elaborate various types of risks in cloud computing.	[L1][CO4]	**[6M]**
7		Compile Privacy and Compliance Risks in cloud security.	[L6][CO4]	**[12M]**
8	**a**	Discuss about the Information Privacy and Privacy laws.	[L2][CO4]	**[6M]**
	b	Explain in detail about the threats to information, data and access control.	[L2][CO4]	**[6M]**
9	**a**	Illustrate in detail about various access control issues in cloud computing.	[L2][CO4]	**[6M]**
	b	Discuss about Cloud Service Provider Risks.	[L2][CO4]	**[6M]**
10		Explain the following security attacks: i) Man in the Middle Attack ii) Replay iii) Social Engineering iv) Password Guessing	[L2][CO4]	**[12M]**

Course Code: 20CS1013 **R20**

UNIT –IV

INTRODUCTION TO THE INTERNET OF THINGS

1	**a**	Explain about the core concepts, characteristics of IOT.	[L2][CO5]	**[6M]**
	b	With a neat sketch, Explain about the IOT Framework.	[L2][CO5]	**[6M]**
2	**a**	List and discuss about the various Phases of IoT System.	[L1][CO5]	**[6M]**
	b	List and explain about various sensor categories.	[L1][CO5]	**[6M]**
3		Illustrate about the Information and Communication Technology Infrastructure (ICT).	[L2][CO5]	**[12M]**
4	**a**	Review and Express derived qualities from modern ICT.	[L2][CO5]	**[6M]**
	b	Explain in detail about potential for Product Innovations.	[L2][CO5]	**[6M]**
5	**a**	Express potential for Process Innovations.	[L6][CO5]	**[6M]**
	b	With a neat sketch, explain hierarchical deployment of a wireless sensor network.	[L2][CO5]	**[6M]**
6	**a**	Discover various implications and challenges of IOT.	[L2][CO5]	**[6M]**
	b	Describe about the Historical Perspective of RFID.	[L1][CO5]	**[6M]**
7		Explain in detail about the function of RFID in IOT.	[L2][CO5]	**[12M]**
8	**a**	Explain how data acquisition, object identification is done using RFID?	[L2][CO5]	**[6M]**
	b	List and explain various emergent issues in usage of RFID in IOT	[L1][CO5]	**[6M]**
9	**a**	Explain in detail about the key features of Arduino hardware development platform.	[L2][CO5]	**[6M]**
	b	Discuss in detail about the major features of Raspberry Pi hardware platform.	[L2][CO5]	**[6M]**
10	**a**	Explain in detail about the power consumption, size and cost details of Raspberry Pi hardware platform.	[L2][CO5]	**[6M]**
	b	List and explain various IoT application domains and related applications.	[L1][CO5]	**[6M]**

Course Code: 20CS1013 **R20**

UNIT –V
IOT SECURITY ISSUES

1		Explain in detail the IOT Architecture and IOT Security.	[L2][CO6]	**[12M]**
2	**a**	Illustrate various categories of IOT Risks and Challenges.	[L3][CO6]	**[6M]**
	b	List and explain various IOT Security requirements.	[L1][CO6]	**[6M]**
3		Examine various IOT Security threats and attacks	[L4][CO6]	**[12M]**
4		Explain the following a) Trust and Security from a device perspective. b) Trust and Secure key storage c) Identity Management	[L1][CO6]	**[12M]**
5	**a**	Discuss about Data Confidentiality in IOT.	[L2][CO6]	**[6M]**
	b	Illustrate in detail about the privacy in IOT.	[L2][CO6]	**[6M]**
6	**a**	Express IOT Communication technologies in IOT Security.	[L2][CO6]	**[6M]**
	b	Outline how the security in NFC entrusted?	[L2][CO6]	**[6M]**
7		Examine security in short range low power IOT networks.	[L3][CO6]	**[12M]**
8	**a**	Discuss about the security in Bluetooth low energy (BLE).	[L2][CO6]	**[6M]**
	b	Describe in detail Zigbee protocol for IOT security.	[L2][CO6]	**[6M]**
9	**a**	Explain about the RFID Security.	[L2][CO6]	**[6M]**
	b	List various security threats in RFID Technology.	[L1][CO6]	**[6M]**
10	**a**	Examine security in long range low power IOT networks.	[L3][CO6]	**[6M]**
	b	Compose and compile Security in the Future IoT Systems.	[L6][CO6]	**[6M]**

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