Q. Code:487110

Reg. No. | | | | | | | | | | | | | | |

B.E / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Sixth Semester

AD18601 – CLOUD COMPUTING: TOOLS AND TECHNIQUES

(Artificial Intelligence and Data Science)

(Regulation 2018 /2018A)

TIME:3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO1	Students should be able to articulate the main concepts, key technologies, strengths and limitations of cloud computing.	**2**
CO2	Students should be able to identify the architecture, infrastructure and delivery models of cloud computing.	**3**
CO3	Students should be able to explain the core issues of cloud computing such as security, privacy and interoperability.	**3**
CO4	Students should be able to choose the appropriate technologies, algorithms and approaches for the related issues.	**3**
CO5	Students should be able to understand the security threats in cloud and security mechanisms.	**3**

PART- A (10x2=20Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	What are the benefits of cloud services for business?	**1**	**2**
2.	Discuss the multi-tenancy issues in cloud computing.	**1**	**2**
3.	What are the characteristics of virtualization in cloud computing?	**2**	**2**
4.	Two applications need to run in a Windows OS of size 1.5GB. Both application's deployment environment is 0.6GB. Application specific libraries are of 1.4GB and 0.6GB respectively. Calculate the disk space requirements in deploying the applications in containers and virtual machines respectively.	**2**	**3**
5.	What is Auto Scaling? What are the two main types of scaling in cloud computing?	**3**	**2**
6.	What is SLA in cloud computing? Give examples.	**3**	**2**
7.	When adding *n*GB of disk space to a NameNode in a Hadoop cluster, how much GB of additional space becomes available to the HDFS volume? Assume that replication has been switched off.	**4**	**3**
8.	If you have an input file of 1050 MB, how many input splits would HDFS2.X create and what would be the size of each input split?	**4**	**3**
9.	What is the CIA triad?	**5**	**2**

10.	What is a "data breach" in the context of cloud security?	**5**	**2**	

PART- B (5x14=70Marks)

		Marks	CO	RBT LEVEL
11. (a)	Discuss the characteristics of cloud computing and the different service models with relevant examples.	**(14)**	**1**	**2**
	(OR)			
(b)	Discuss the reference architectural model of cloud computing.	**(14)**	**1**	**2**
12. (a)	Discuss the different implementation levels of virtualization with relevant techniques.	**(14)**	**2**	**3**
	(OR)			
(b)	Compare Xen, VMWare and Microsoft Hyper-V.	**(14)**	**2**	**3**
13. (a)	Elaborate on the different cloud storage levels with relevant technologies. Also, give the benefits of RAID in cloud.	**(14)**	**3**	**3**
	(OR)			
(b)	Give a detailed note on the service quality metrics used in SLA to measure the QoS characteristics.	**(14)**	**3**	**3**
14. (a)	Describe the primary components of Hadoop. How does 'Name node' handles 'Data node' failure in Hadoop Distributed File System?	**(14)**	**4**	**3**
	(OR)			
(b)	Illustrate a simple word count example of the working of MapReduce.	**(14)**	**4**	**3**
15. (a)	Discuss the IAM components and policies. What is the importance of it in Cloud?	**(14)**	**5**	**3**
	(OR)			
(b)	Describe the characteristics of security group rules. Give examples for different use cases.	**(14)**	**5**	**3**

PART- C (1x10=10Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Compare virtualization and containerization.	**(10)**	**2**	**5**