



B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Fifth Semester

ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

U18AII5201 : Cloud Architecture

COURSE OUTCOMES

CO1: Analyze the main concepts, key technologies, strengths and limitations.

CO2: Analyze and understand various queuing models.

CO3: To understand and use the architecture of compute, storage cloud, service and delivery models.

CO4: Apply the core issues of cloud computing such as resource management and security.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|--|-----|-------------------|
| 1. Define cloud computing from NIST. Give an example. | CO1 | [K ₁] |
| 2. List out all the main characteristics of service orientation. | CO1 | [K ₁] |
| 3. Compare Grid and cloud computing. | CO2 | [K ₂] |
| 4. SOA is new generation of Distributed Computing platform. Justify. | CO2 | [K ₂] |
| 5. State the differences between PaaS and SaaS. | CO3 | [K ₂] |
| 6. Mention the different layers available in cloud architecture design? | CO4 | [K ₂] |
| 7. What are the various components of NIST Cloud computing reference architecture? | CO3 | [K ₂] |
| 8. State the different Resource Provisioning Methods. | CO4 | [K ₂] |
| 9. Differentiate over provisioning and under positioning of resources with an example. | CO4 | [K ₂] |
| 10. Identify how cloud computing companies developed large-scale data storage systems to keep huge amount of data collected every day. | CO4 | [K ₂] |

Answer any FIVE Questions:-

PART B (5 x 16 = 80 Marks)

(Answer not more than 400 words)

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|--|---|-----|-------------------|
| 11. a) Illustrate the different architectural styles of distributed computing. | 8 | CO1 | [K ₂] |
| b) Outline the characteristic features of the cloud. | 8 | CO1 | [K ₂] |
| 12. a) What are the advantages of Cloud Computing over the Internet? Explain | 8 | CO1 | [K ₂] |

	b)	Give the architecture of P2P systems. What are the major categories of P2P Network families?	8	CO1	[K ₂]
13.	a)	Explain the differences between full-virtualization and para-virtualization and give one example VMM (virtual machine monitor), that was built in each of the two categories.	8	CO2	[K ₂]
	b)	Write and explain about intel hardware support for virtualization of processor, memory and I/O Devices?	8	CO2	[K ₂]
14.	a)	Explain about REST.	8	CO2	[K ₂]
	b)	Explain the layered architecture of SOA for web services.	8	CO2	[K ₂]
15.	a)	Consider a startup that analyze videos. It need's a lot of storage as videos consume quite a bit of disk. Additionally, Ample computational power is needed, possibly running applications concurrently. There are some very good tools available to facilitate development in Windows but the deployment will be more efficiently handled in the Linux environment. It is inferred that SaaS is the most attractive service, followed by PaaS and IaaS, in that order. Given the above information, which service do you recommend? Why?	16	CO4	[K ₃]
16.	a)	Explain the security architecture design of a cloud environment and relate how it can be made possible to include such measures in a typical banking scenario.	16	CO4	[K ₃]
