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Roll No. _____

**B.TECH. FIFTH/SEVENTH SEMESTER
MID SEMESTER EXAMINATION, SEPTEMBER-2022**

Course Code: ITITE03/INITE03

Course Title: Cloud Computing

Time: 1:30 Hours

Max. Marks: 15

Note: Attempt All questions.

Q.No	Questions	Marks	COs
1a	What is cloud computing? Explain with example.	1.5	CO1
1b	What are the actors and their roles in a typical cloud ecosystem?	1.5	CO1
2a	Differentiate between on-premise and outsourced private cloud.	1.5	CO2
2b	Discuss the characteristics of IaaS.	1.5	CO2
3a	Enlist and explain the requirements that need to be considered for cloud services.	1.5	CO1
3b	List and explain the phases of cloud migration.	1.5	CO1
4a	Draw the overview model (architecture) for PaaS.	1.5	CO2
4b	Briefly describe about popular SaaS service providers.	1.5	CO2
5a	Describe the features which make the cloud applications unique.	1.5	CO1
5b	What is SLA? Explain with example.	1.5	CO2

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Roll No. _____

MID SEMESTER EXAMINATION September 2022

Course Code: Clod computing
Course Title: COCSC15

Time: 1.5 Hours

Max. Marks:

Note: - Attempt all the five questions. Missing data / information if any, may be suitably assumed & mentioned in the answer. Write as precise as possible, do not write unnecessarily.

Q. No.	Question	Marks
1a	What is cloud computing?	1
1b	Describe any one real-time example to illustrate the concepts behind cloud computing.	2
2a	'Many businesses are still reluctant to move to cloud'. Justify this statement by listing the various challenges faced by cloud computing.	2
2b	Give any two examples where private cloud will be preferred over public cloud.	1
3a	What is virtualization? List its benefits and drawbacks	2
3b	Difference between Virtualization and cloud computing	1
4a	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with a diagram	2
4b	Define Hybrid Cloud	1
5a	Compare and contrast IaaS, PaaS and SaaS..	2
5b	Give two examples of IaaS and SaaS each.	1

FIFTH SEMESTER-BTECH-COE

END SEMESTER EXAMINATION: DECEMBER 2021

Course Code: COCSC15

Course Title: Cloud Computing

Time: 3 Hours

Max Marks: 40

Note: Attempt all questions

Assume suitable missing data, if any

Q.No	Question	Marks	CO
Q1.	Attempt any two parts of the following		
1a	Describe a real-life example to illustrate the concepts behind cloud computing.	4	5
1b	Give a brief note on the merits and demerits of cloud computing.	4	1
1c	Describe several approaches of cloud migration.	4	2
Q2.	Attempt any two parts of the following		
2a	What are SLAs? How SLAs differ for each type of cloud deployment?	4	1
2b	What is outsourced community cloud?	4	2
2c	What are the characteristics of hybrid cloud?	4	1
Q3.	Attempt any two parts of the following		
3a	Write short notes on end user and service provider responsibilities of cloud service models with a suitable diagram.	4	2
3b	Write short notes on cloud service models that emerged after the introduction of cloud computing.	4	3
3c	Explain how cloud computing facilitates individuals and start-up industries.	4	5
Q4.	Attempt any two parts of the following		
4a	What are protection rings? Explain how it is used in virtualization.	4	4
4b	Differentiate full virtualization, paravirtualization, and hardware-assisted virtualization techniques.	4	2
4c	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with a neat diagram.	4	2
Q5.	Attempt any two parts of the following		
5a	Explain how cloud computing is different from virtualization.	4	2
5b	Explain MapReduce workflow with the help of a diagram and suitable example.	4	3
5c	Explain any three components of HDFS architecture. Explain how HDFS deals with over replication and under replication of blocks.	4	4

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2/2021

FIFTH SEMESTER B. TECH (IT)

END-SEMESTER EXAMINATION, DECEMBER- 2021

Course Code- ITITE03

Course Title- Cloud Computing

Time- 3 Hours

Max. Marks- 40

Note: - Attempt all the Five questions. Missing data/ information (if any), maybe suitably assumed & mentioned in the answer.

Q. No.	Question	Marks	CO
Q1	Attempt any two parts of the following		
1a	Why is cloud computing called variable cost computing model? Does cloud computing ensure round the clock availability? Explain.	4 M	CO1
1b	Explain the various phases and approaches used for migrating an application to Cloud.	4 M	CO1
1c	How Fog computing is different from Cloud Computing? List advantages and disadvantages of Fog computing.	4 M	CO3
Q2	Attempt any two parts of the following		
2a	What is the importance of multi-tenancy feature in any utility service? Why multi-tenancy is not considered as an essential feature of cloud computing?	4 M	CO2
2b	What is the difference between elasticity and scalability in cloud computing? How can a private cloud be enabled to expand into hybrid cloud environment?	4 M	CO2
2c	Write short note on Green cloud.	4 M	CO3
Q3	Attempt any two parts of the following		
3a	Explain how cloud computing is different from virtualization. Briefly explain how hardware resources such as processor, memory, storage, and networks can be virtualized.	4 M	CO3
3b	Differentiate full virtualization, paravirtualization, and hardware-assisted virtualization techniques.	4 M	CO3
3c	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with a neat diagram.	4 M	CO3

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MID SEMESTER EXAMINATION September 2022

Course Code: Clod computing
Course Title: COCSC15

Time: 1.5 Hours

Max. M

Note: - Attempt all the five questions. Missing data / information if any, may be suitably assumed & mentioned in the answer. Write as precise as possible, do not write unnecessarily.

Q. No.	Question	Marks
1a	What is cloud computing?	1
1b	Describe any one real-time example to illustrate the concepts behind cloud computing.	2
2a	'Many businesses are still reluctant to move to cloud'. Justify this statement by listing the various challenges faced by cloud computing.	2
2b	Give any two examples where private cloud will be preferred over public cloud.	1
3a	What is virtualization? List its benefits and drawbacks	2
3b	Difference between Virtualization and cloud computing	1
4a	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with a diagram	2
4b	Define Hybrid Cloud	1
5a	Compare and contrast IaaS, PaaS and SaaS..	2
5b	Give two examples of IaaS and SaaS each.	1

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MID SEMESTER EXAMINATION September 2022
(M.Tech. CSE, III Semester)

Course Code: CSCSE26
Course Title: Cloud Computing

Time: 1.5 Hours

Max. Marks:

Note: - Attempt all the five questions. Missing data / information if any, may be suitably assumed & mentioned in the answer.
Write as precise as possible, do not write unnecessarily.

Q. No.	Question	Marks	Co
1a	What is cloud computing?	1	1
1b	Compare cloud computing with High-Performance Computing and Distributed Computing.	2	1
2a	What are the various challenges faced by cloud computing.	2	1
2b	Compare Grid Computing and Mobile Computing.	1	1
3a	What is virtualization with respect to Cloud Computing?	1	1
3b	What is the role of hypervisor in virtualization? Explain with example.	2	1
4a	What are the Essential Characteristics of Cloud Computing?	2	1
4b	What are the different Cloud Deployment Models of Cloud Computing?	1	1
5a	Explain any one real time application of Cloud Computing?	2	1
5b	What is Quantum Computing?	1	1

**THIRD SEMESTER M. Tech. Computer Science & Engineering
END SEMESTER EXAMINATION, December 2021**

Course Code: CSCSE26
Course Title: Cloud Computing

Time: 3 Hours

Max. Marks : 50

Note: - Attempt all the five questions. Missing data/ information if any, maybe suitably assumed & mentioned in the answer.

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02/2022

Q. No.	Question	Marks	CO
Q1	Attempt any 2 parts of the following.		
1a	Cloud computing has some interesting characteristics that bring benefits to both cloud service consumers (CSCs) and cloud service providers (CSPs). List and Explain these characteristics.	5	CO1
1b	Compare between Cloud Computing, Cluster Computing, and Grid Computing.	5	CO1
1c	Explain the need for scaling of IT resources with an example. Differentiate between horizontal and vertical scaling.	5	CO1,2
Q2	Attempt any 2 parts of the following.		
2a	What is the role of hypervisor in virtualization? Why do we require different types of hypervisors? Show with a neat diagram.	5	CO1
2b	Are virtualization and cloud computing the same? Justify your answer. List the pros and cons of virtualization.	5	CO2,3
2c	Analyze the requirement of (i) Desktop virtualization and (ii) Memory virtualization.	5	CO1
Q3	Attempt any 2 parts of the following.		
3a	Why there are different deployment models of cloud computing? Give one example situation where each type of deployment model could be used.	5	CO3
3b	What is IaaS? Explain its implementation with a neat diagram.	5	CO3
3c	If a company has given the business case ago and the result say it should adopt the cloud. That said, technically from top to bottom, what are key success factors to consider the pros and cons of? Analyze the same and answer.	5	CO2,3
Q4	Attempt any 2 parts of the following.		
4a	Explain different types of cloud security threats with the countermeasures actions performed to overcome them.	5	CO3

4b	What is QoS? How SLA is used to ensure the QoS?	5						
4c	Explain the need of resource management system. Evaluate the requirement of any load balancer in cloud environment, with an example.	5						
Q5	Attempt any 2 parts of the following.							
5a	Compare and contrast the two Cloud computing platforms and technologies with their utilized architectures.	5						
5b	Consider that an organization is exploring the opportunities of Cloud services. If it fits the bill of the company then they will adopt it by migrating their computing environment. Analyze how in a high-level point of view what are the important things to do beforehand?	5						
5c	<p>Explain the need of service level agreement.</p> <p>Consider a scenario where a company X wants to use a cloud service from a provider P. The service level agreement (SLA) guarantees negotiated between the two parties prior to initiating business are as follows:</p> <ul style="list-style-type: none"> • Availability guarantee: 99.5% time over the service period • Service period: 30 days • Maximum service hours per day: 15 hours • Cost: INR 2500 per day • Service credits are awarded to customers if availability guarantees are not satisfied. <p>Monthly connectivity uptime service level are given as:</p> <table border="1"> <thead> <tr> <th>Monthly Uptime Percentage</th> <th>Service Credit</th> </tr> </thead> <tbody> <tr> <td>< 99.5%</td> <td>15%</td> </tr> <tr> <td>< 99 %</td> <td>25%</td> </tr> </tbody> </table> <p>However, in reality it was found that over the service period, the cloud service suffered five outages of durations: 5 hrs 30mins, 1 hr 30mins, 5 mins, and 2hrs 30mins, each on different days, due to which normal service guarantees were violated. If SLA negotiations are honored, evaluate the effective cost payable towards buying the cloud service.</p>	Monthly Uptime Percentage	Service Credit	< 99.5%	15%	< 99 %	25%	5
Monthly Uptime Percentage	Service Credit							
< 99.5%	15%							
< 99 %	25%							

MID SEMESTER EXAMINATION September 2022

Course Code: Cloud computing

Course Title: COCSC15

Time: 1.5 Hours

Instructions: - Attempt all the five questions. Missing data / information if any, may be suitably assumed & mentioned in the answer as precise as possible, do not write unnecessarily.

No.	Question	Mark
a	What is cloud computing?	1
b	Describe any one real-time example to illustrate the concepts behind cloud computing.	2
a	'Many businesses are still reluctant to move to cloud'. Justify this statement by listing the various challenges faced by cloud computing.	2
c	Give any two examples where private cloud will be preferred over public cloud.	1
	What is virtualization? List its benefits and drawbacks	2
	Difference between Virtualization and cloud computing	1
	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with a diagram	2
	Define Hybrid Cloud	1
	Compare and contrast IaaS, PaaS and SaaS..	2
	Give two examples of IaaS and SaaS each.	1

**B.TECH.FIFTH/SEVENTH SEMESTER
END SEMESTER EXAMINATION, DECEMBER-2022**

Course Code: ITITE03/INITE03
Course Title: Cloud Computing
Time: 3 Hours

Max. Marks: 40

Note: Attempt all the five questions. Missing data/information (if any), maybe suitably assumed & mentioned in the answer.

Q.No	Questions	Marks	COs
Q1	Attempt any two parts of the following.		
1a	Explain the different approaches used to achieve virtualization with a neat diagram.	4	CO3
1b	There is a necessity of governance mechanism to maintain the growth of cloud. Explain the statement.	4	CO5
1c	What fundamental advantages does cloud computing technology bring to scientific applications?	4	CO1
Q2	Attempt any two parts of the following.		
2a	What is SLA? Are SLAs different for each type of cloud deployment? Justify your answer.	4	CO2
2b	How would you contrast the policies for public and private infrastructure security?	4	CO4
2c	Discuss approaches for cloud migration that have been adopted effectively by vendors with suitable example.	4	CO1
Q3	Attempt any two parts of the following.		
3a	Why is cloud load balancing important in cloud computing environment? Elaborate with suitable example.	4	CO5
3b	Containerization offers significant benefits to developers and development teams. Explain in detail with example.	4	CO3
3c	What are some aspects in community cloud that changed because of the outsourced nature of it?	4	CO2
Q4	Attempt any two parts of the following.		
4a	Explain with suitable example the difference between threat, vulnerability and risk. Why is DREAD used?	4	CO4
4b	How is the architecture of cloud have changed before and after virtualization? Illustrate with neat diagram.	4	CO3
4c	Is it true that all essential characteristic features of the cloud are necessary to completely describe it? Elaborate with example.	4	CO1
Q5	Attempt any two parts of the following.		
5a	Compare and contrast the similarities and dissimilarities between cloud and fog computing.	4	CO5
5b	Write short notes on cloud service models that emerged after the introduction of cloud computing.	4	CO2
5c	What is access control? Briefly describe all the access control models.	4	CO4

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SEMESTER-5th
END SEMESTER EXAMINATION ,November 2022

Course Code: Cloud computing
Course Title: COCSC15

Max. Marks: 40

Time: 3 hrs

Note: - All questions carry equal marks
Attempt any 2 parts from all the questions. Assume suitable missing data, if any.

Q. No.	Question	Marks	CO
1a	Explain Parallel computing, Grid Computing and Distributed Computing. Are they co-related? Justify.	4	1
1b	Briefly explain merits and demerits of cloud computing.	4	1
1c	Taking any example of a real time Cloud Service Provider ,explain how it can support the various small scale startups and what are the different kinds of services it can provide in terms of computing, storage, infrastructure etc	4	4
2a	Explain the different approaches of Virtualization. Illustrate through diagrams.	4	3
2b	What are the protection rings used in virtualization. Also discuss how virtualization changed the computing in IT industry.	4	3
2c	What is the role of Hypervisor in Virtualization. Recommend some practices to avoid/prevent the attacks on Hypervisors.	4	2,5
3a	Write briefly on NaaS(Network), StaaS(Storage), SeaaS(Security) and XaaS	4	4
3b	Explain pros and cons of SaaS and PaaS.	4	2,5
3c	Write short notes on end user and service provider responsibilities of cloud service models with a suitable diagram.	4	2,5
4a	What is Community Cloud. Discuss the characteristics and limitations of the different types of Community cloud.	4	2,4
4b	Compare and contrast Public and Private cloud.	4	1,3
4c	What is SLA? How are they different for each type of cloud deployment.	4	4
5a	Compare Big Data and Cloud Computing. Also discuss their significance on each other.	4	1,5
5b	Write short notes on any two: a) Big Tables b) HDFS c) Web 2.0	4	4
5c	What is map reduce framework. Explain with an example	4	3

Note: - All questions carry equal marks
Attempt any 2 parts from all the questions. Assume suitable missing data, if any.

Q. No.	Question	Marks	CO
1a	Compare Grid Computing, High-Performance Computing, Quantum Computing and Mobile Computing.	4	1
1b	Compare and contrast Public, Private and Hybrid Cloud with examples.	4	1
1c	What are the essentials characteristics of Cloud Computing.	4	1
2a	Explain the characteristics of SaaS. Also provide Pros and Cons of SaaS.	4	2,5
2b	Explain the characteristics of PaaS. Also provide Pros and Cons of PaaS.	4	2,5
2c	Explain the characteristics of IaaS. Also provide Pros and Cons of IaaS.	4	2,5
3a	What is Virtualization? List its benefits and drawbacks.	4	3
3b	Differentiate full virtualization, paravirtualization, and hardware-assisted virtualization techniques.	4	3
3c	What is the role of hypervisor in virtualization? Briefly explain the different types of hypervisors with diagram.	4	2,5
4a	Explain the tools/services provided by Amazon Web Services with USE CASE.	4	5
4b	What are the tools/ services provided by Google Cloud? Explain with USE CASE.	4	5
4c	What are the tools/ services provided by Microsoft Azure? Explain with USE CASE.	4	5
5a	What are the challenges in Cloud Computing w.r.t security?	4	1,5
5b	Write short notes on any two: a) Big Data b) Green Cloud c) Cloud Analytics	4	4
5c	What are the security issues in SaaS or PaaS? Explain in brief with example.	4	1,5