Name: Enrolment No:	

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Introduction to Virtualization and Cloud Computing (CSIB274) **Semester: Vth**

Programme: B.Tech. CSE-Spz (IOT & SC)

Time: 03 hrs. **Max. Marks: 100**

Instructions: Attempt all questions. Question no. 9, 10, & 12 have internal choices.

SECTION A

S. No.		Marks	CO
Que 1.	Define the **Virtualization Technology** (VT). How the VT has removed the shortcomings of traditional computing environment.	**2+2**	**CO1**
Que 2.	Discuss the virtualization technique which supports PAAS service of cloud computing.	**4**	**CO2**
Que 3.	Discuss the server virtualization techniques. Which server virtualization technique have better/more control over the hardware?	**2+2**	**CO3**
Que 4.	Write short notes on Network Based Attacks and VM Based Attacks on cloud platform.	**2+2**	**CO4**
Que 5.	What are the security implications for the cloud computing? Discuss a case study for DDOS attack.	**2+2**	**CO5**
	SECTION B		
Que 6.	Discuss the security elements that should carefully considered as an integral part of the SAAS application development and deployment process.	**8**	**CO4**
Que 7.	Discuss the significance of IAAS, PAAS and SAAS in the Cloud Service Delivery Models.	**8**	**CO2**
Que 8.	What are the features of Storage Virtualization? Suggest appropriate storage architecture for storing high volume archival data.	**4+4**	**CO3**
Que 9.	Define the prominent resource usage event that is generated by the VMM software **OR** Discuss the scenarios and service agents, which perform traffic eavesdropping and malicious intermediary attacks.	**8**	**CO1+ CO2**
Que 10.	Discuss the cloud storage interfaces and perform a case study i.e., how these technologies such as SMB, CIFS, NFS, REST benefitted the cloud storage system. **OR**	**8**	**CO4+ CO5**

	A cloud customer starts with smallest virtual machine configuration (1 Virtual Processor Core, 4GB of virtual RAM) and scale up to the largest configuration (128 Virtual Professor Cores, 512GB of Virtual RAM). Perform a case study to scaling up and scaling down of server with live VM migration.		
	SECTION-C		
Que 11.	Discuss the role of Load Balancer and SLA Monitor in cloud computing. A cloud service provider (CSP) wants to provide resource availability of 99.95% to meet the SLA agreement. Perform a case study for monitoring activity.	**20**	**CO4**
Que 12.	What are prominent cloud security threats? Discuss the following cloud security threats: (a) Traffic Eavesdropping (b) Malicious Intermediary (c) Denial of Service (d) Insufficient Authorization (e) Virtualization Attack **OR** An application developed by OTC named **"myTrendek"**, the particular application analyses telephone, internet usage, and enables multi-user mode that grants varying access rights (Administrator, supervisor, auditor and regular user**).** Perform a case study for **"myTrendek"** application poses a number of security challenges.	**20**	**CO5+ CO4**

Name: Enrolment No:	UPES

UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, December 2018

Course: Introduction to Virtualization and Cloud Computing (CSIB274) **Semester: Vth**

Programme: B.Tech. CSE-Spz (IOT & SC)

Time: 03 hrs. **Max. Marks: 100**

Instructions: Attempt all questions. Question no. 9, 10, & 12 have internal choices.

SECTION A

S. No.		Marks	CO
Que 1.	Discuss the driving factors, which should be considered by the client before moving toward cloud.	**4**	**CO1**
Que 2.	(a) What is Xen? Discuss its elements for virtualization. (b) Define cloud computing and identify its core features.	**1+1+2**	**CO2**
Que 3.	Discuss the server virtualization techniques. Which server virtualization technique have better/more control over the hardware; support your answer with reason.	**2+2**	**CO3**
Que 4.	How is the cloud development different from traditional software development?	**4**	**CO4**
Que 5.	Write short notes on Network Based Attacks and VM Based Attacks on cloud platform	**2+2**	**CO5**

SECTION B

Que 6.	Define the Cloud Service Delivery Models. Write short notes on the following (1) IAAS (2) PAAS (3) SAAS	**2+2+2 +2**	**CO4**
Que 7.	Discuss the security elements that should carefully considered as an integral part of the SAAS application development and deployment process.	**8**	**CO2**
Que 8.	What is the Utility Computing Model? Discuss the cloud deployment models in detail.	**4+4**	**CO3**
Que 9.	Define the prominent resource usage event that is generated by the VMM software **OR** What the features of Storage Virtualization? Suggest appropriate storage architecture for storing high volume archival data.	**8**	**CO1+ CO2**
Que 10.	A cloud customer starts with smallest virtual machine configuration (1 Virtual Processor Core, 4GB of virtual RAM) and scale up to the largest configuration (128 Virtual Professor Cores, 512GB of Virtual RAM). Perform a case study to scaling up and scaling down of server with live VM migration.	**8**	**CO4+ CO5**

	OR Discuss the scenarios and service agents, which perform traffic eavesdropping and malicious intermediary attacks.		
	SECTION-C		
Que 11.	Discuss the role of Load Balancer and SLA Monitor in cloud computing. A cloud service provider (CSP) wants to provide resource availability of 99.95% to meet the SLA agreement. Perform a case study for monitoring activity.	**20**	**CO4**
Que 12.	Discuss the Virtualization execution environment on the basis of following virtualization features (a) Sharing (b) Aggregation (c) Emulation (d) Isolation **OR** Discuss classification or taxonomy of virtualization at different levels. What are the benefits of virtualization in the context of cloud computing?	**20**	**CO2**