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UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
End Semester Examination, May 2019

Course: Introduction to Virtualization and Cloud Computing　　　　　Semester: II
Program: B.Tech CS+CCVT　　　　　　　　　　　　　　　　　　　　Time 03 hrs.
Course Code: CSVT2001　　　　　　　　　　　　　　　　　　　　Max. Marks: 100

Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Explain the energy efficiency in Distributed computing.	4	CO1
Q 2	Discuss the architectures of Load Balancers.	4	CO4
Q 3	Distinguish the security aspects in Private & Public cloud.	4	CO3
Q 4	Enlist the various level of Parallelism depending upon the granulity of the code?	4	CO4
Q 5	Differentiate between Client Server and Peer to Peer Distributed Computing model.	4	CO1

SECTION B

Q 6	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.	10	CO2
Q 7	Elaborate SOA? Illustrate using architecture that how two software communicate using SOA.	10	CO2
Q 8	Explain the hardware architectures for parallel computing with suitable examples.	10	CO4
Q 9	Define Cloud Computing? Explain Cloud Reference model in detail with the help of diagrams. OR Enumerate and explain the characteristics of Cloud Computing.	10	CO3

SECTION-C

Q 10	Justify how workload Categorization is necessary in Cloud Environment? Also enlist and explain the categories of workload in cloud environment with reference to the characteristics of their computing resources.	20	CO4
Q 11	a. A Company wants to build a test environment to test software updates and new solutions. The environment should mirror the production environment and be secure and inaccessible from outside the company network. The company doesn't want to invest in infrastructure that may be idle for a significant amount of time. Show which cloud computing model will satisfy the requirement? Compare the model with other cloud computing models too. b. Illustrate Operating System Level Virtualization with the help of suitable	10+10	CO3+ CO2

	examples.		

	OR a. Write short notes on:
	    i) AWS EC2
	    ii) Disaster Recovery in Cloud
	b. Explain Microsoft Hyper-V architecture with the help of diagram.		

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SECTION A			
S. No.		**Marks**	**CO**
Q 1	Discuss the advantages of multitenancy architecture used in cloud over single tenancy.	**4**	**CO3**
Q 2	Enlist VMM design requirements.	**4**	**CO2**
Q 3	Describe the Machine Reference model in detail.	**4**	**CO2**
Q 4	Differentiate between Cloud, Grid and Cluster Computing?	**4**	**CO1**
Q 5	Distinguish between Live & Non Live migrations?	**4**	**CO4**
SECTION B			
Q 6	Elaborate VPN? Classify and explain its types.	**10**	**CO1**
Q 7	Discuss classification of Distributed and Parallel Computing Systems.	**10**	**CO1**
Q 8	Define Hypervisor? Explain its components and types in detail.	**10**	**CO2**
Q 9	Illustrate various cloud deployment models. Also differentiate between them. **OR** Enlist & explain the characteristics of cloud computing.	**4+6**	**CO3**
SECTION-C			
Q 10	Justify why Workload Categorization is important in Cloud Computing Environment? Explain the various categories of Workloads suitable for cloud environment.	**10+10**	**CO4**

Q 11	a. Write short notes on:
	  i. Load Balancing in Cloud
	  ii. Virtual Machine Migration
	
	b. A company has decided to leverage the web conferencing services provided by a cloud provider and to pay for those services as they are used. The cloud provider manages the infrastructure and any application upgrades. What kind of cloud model is this company providing? Also compare this delivery model with other
		10+10	**CO3**

models.

OR

a. Explain Xen Hypervisor architecture with the help of diagram.
b. A company is interested in cloud computing is looking for a provider who offers a set of basic services such as virtual servers provisioning and on demand storage that can be combined into a platform for running and deploying customized applications. What type of cloud computing model fits these requirements and Why? Also compare this model with others.