Name: Enrolment No:	UPES

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

Course: B. Tech. CSE with Cloud Computing and Virtualization Techniques **Semester: VII**
Subject: Cloud Performance Tuning **Time: 03 hrs.**
Subject Code: CSIB 491 **Max. Marks: 100**
Instructions:

SECTION A

S. No.		Marks	CO
Q 1	Explain virtual machine and Discuss the various tunable components in Cloud based solutions.	4	CO1
Q 2	Discuss the role of Clock speed in compute performance. Explain how the different clock speeds prove as differentiator in the system performance.	4	CO2
Q 3	Discuss various commands for performance monitoring in Linux.	4	CO3
Q 4	Explain Instruction Set Architecture (ISA).	4	CO2
Q 5	Discuss any tool to get various system parameters in windows based systems.	4	CO4
	SECTION B		
Q 6	Discuss the various compute measuring methods. Differentiate between the MIPS and FLOPS.	10	CO2, CO4
Q 7	Write the program to monitor the total available memory and free memory. Use Java language to write the program.	10	CO2, CO3
Q 8	Discuss the phenomenon "Performance improvement by change". Explain Amdahl's Law in the context.	10	CO3
Q 9	Explain Application performance. Demonstrate how the Good programming practice can help improve the application performance. **OR** What are the benefits of performance monitoring? Explain any performance-monitoring tool of your choice in Windows or Linux.	10	CO2, CO3
	SECTION-C		
Q 10	a) What is CPI? How to calculate CPI?	8+12	CO2,

	b) Machine A has a clock cycle time of 10 ns and a CPI of 2.0 Machine B has a clock cycle time of 20 ns and the 1.2 CPI. What machine is faster for this program, and by how much?		**CO5**
Q 11	Explain the following and the impact on the system performance in case of the change in any. Use suitable Example i. Throughput ii. Latency iii. Response Time iv. Overall Time v. CPI **OR** Our favorite program runs in 10 seconds on computer A, which has a 400 MHz clock. We are trying to help a computer designer build a new machine B, to run this program in 6 seconds. The designer can use new (or perhaps more expensive) technology to substantially increase the clock rate, but has informed us that this increase will affect the rest of the CPU design, causing machine B to require 1.2 times as many clock cycles as machine A for the same program. What clock rate should we tell the designer to target?	**20**	**CO3, CO4**