UE15CS581

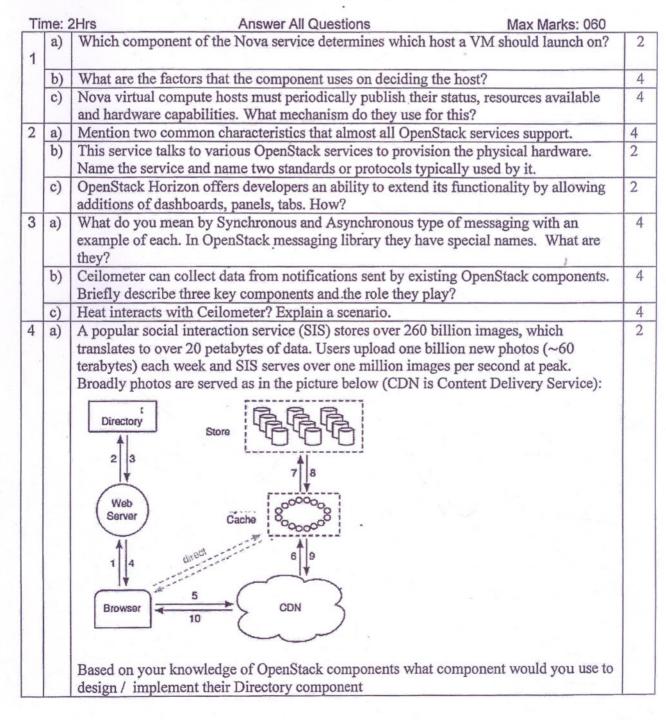# PES University, Bengaluru
(Established under Karnataka Act No. 16 of 2013)

MAY 2016: END SEMESTER ASSESSMENT
M.TECH. II SEMESTER CSE ▓▓▓ – 25th May 2016

UE15CS581 - Cloud Computing Fundamentals

Time: 2Hrs | Answer All Questions | Max Marks: 060

1	a)	Which component of the Nova service determines which host a VM should launch on?	2
	b)	What are the factors that the component uses on deciding the host?	4
	c)	Nova virtual compute hosts must periodically publish their status, resources available and hardware capabilities. What mechanism do they use for this?	4
2	a)	Mention two common characteristics that almost all OpenStack services support.	4
	b)	This service talks to various OpenStack services to provision the physical hardware. Name the service and name two standards or protocols typically used by it.	2
	c)	OpenStack Horizon offers developers an ability to extend its functionality by allowing additions of dashboards, panels, tabs. How?	2
3	a)	What do you mean by Synchronous and Asynchronous type of messaging with an example of each. In OpenStack messaging library they have special names. What are they?	4
	b)	Ceilometer can collect data from notifications sent by existing OpenStack components. Briefly describe three key components and the role they play?	4
	c)	Heat interacts with Ceilometer? Explain a scenario.	4
4	a)	A popular social interaction service (SIS) stores over 260 billion images, which translates to over 20 petabytes of data. Users upload one billion new photos (~60 terabytes) each week and SIS serves over one million images per second at peak. Broadly photos are served as in the picture below (CDN is Content Delivery Service): Based on your knowledge of OpenStack components what component would you use to design / implement their Directory component	2

	b)	Design / implement their Store component.	2
	c)	Give reasons for your choices?	2
	d)	What role does the Cache component play?	2
	e)	How would the browser interact with CDN? What is its equivalent in OpenStack?	2
6	a)	A service provider wants to provide an IOT (Internet Of Things) service to his customers. Based on your understanding of OpenStack help design key components (numbered 1, 2, 3), list their functionality	6

	b)	Identify functions of each as well as protocols (a,b,c,d) between them:	4
7	a)	A CIO (Chief IT Officer) of a Software company that offers SAAS to its customers is concerned that his cloud service bills are in need for better budgetary control while continuing to support business innovation through his developers. He is also concerned that his internal IT hardware infrastructure is not being used adequately as his IT operations staff is harrased by diverse user demands. As a Cloud Service consultant detail your recommendations to the CIO on achieving the goals of the company. (Hint: Identify the users, their requirements and propose applications and services that can meet the requirements)	10