KUMARAGURU
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B.E DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Fifth Semester

INFORMATION SCIENCE AND ENGINEERING

U18ISE0006: Cloud Architecture and Computing

COURSE OUTCOMES

CO1: Understand fundamental distributed computing concepts for cloud computing.

CO2: Differentiate between different cloud deployment and service models.

CO3: Identify appropriate virtualization technology.

CO4: Select suitable architecture for an application context.

CO5: Understand different technology options for cloud applications.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 1 = 10 Marks)

1. Matching type item with multiple choice code   CO1 [K_2]

List I	List II
A.Lambda	i. Google
B.Cosmos DB	ii.iPaaS
C.IBM	iii.AWS
D. App Engine	iv.Azure

	A	B	C	D
a)	iii	iv	ii	i
b)	ii	iv	iii	i
c)	iv	ii	iii	i
d)	iii	i	ii	iv

2. Which cloud service model supports to have more control over the cloud resources.   CO1 [K_2]

   a) IaaS   b) PaaS

   c) EaaS   d) SaaS

3. Which is responsible for allowing a request to an instance that resides inside a VPC?   CO2 [K_4]

   1. Security group

2. Keypair

3. Network control access list

4. Instance type

a) 1,3
b) 1,4
c) 1,2
d) 2,3

4. Identify the feature that helps to achieve cost saving in cloud computing? CO2 [K4]

a) Availability
b) Identity
c) Virtualization
d) Firewall

5. Assertion (A): All cloud computing applications combine their resources into pools that can be assigned on demand to users. CO3 [K3]

Reason (R): Virtualization assigns a logical name for a physical resource and then provides a pointer to that physical resource when a request is made.

a) Both A and R are Individually true and R is the correct explanation of A
b) Both A and R are Individually true but R is not the correct explanation of A
c) A is true but R is false
d) A is false but R is true

6. Security responsibilities of a SaaS cloud provider is typically up to the_____ CO3 [K3]

a) Hypervisor
b) Solution Stack
c) Application
d) Operating System

7. Sequence the process of creating a virtual server in AWS. CO4 [K3]

1. Select the instance type

2. Select the AMI

3. Create security group

4. Create a key for credentials

a) 2-1-4-3
b) 1-3-2-4
c) 3-4-2-1
d) 4-1-3-2

8. Which is appropriate for infrequently accessed data storage? CO4 [K3]

a) S3
b) Glacier
c) EBS
d) EFS

9. Assertion (A): On-demand self-service supports multi-tenant usage. CO5 [K2]

Reason (R): On-demand self-service is related to creating resources that are pooled together in a system.

a) Both A and R are Individually true and
b) Both A and R are Individually true but R

	R is the correct explanation of A		is not the correct explanation of A		

c) A is true but R is false   d) A is false but R is true

10. When a Vm is terminated, which of the following resource gets freed?   CO5 [K₂]

    a) All PCs , RAM and VCPUs   b) Network only

    c) Storage only   d) All PCs, RAM, VPCs and Storage

PART B (10 x 2 = 20 Marks)
(Answer not more than 40 words)

11.	Differentiate Grid and Cloud Computing.	CO1	[K₂]
12.	Relate failure detection protocols Centralized Heartbeating and Ring Heartbeating.	CO1	[K₂]
13.	Distinguish public and private cloud models.	CO2	[K₄]
14.	Examine the benefits of cloud infrastructure over on-premise infrastructure.	CO2	[K₄]
15.	Differentiate horizontal and vertical scalabilities.	CO3	[K₃]
16.	Identify different types of data recovery methods.	CO3	[K₃]
17.	Outline the benefits of autoscaling.	CO4	[K₃]
18.	List the additional mechanisms used in elastic resource capacity architecture.	CO4	[K₃]
19.	Recall the need for containers.	CO5	[K₁]
20.	Identify the purpose of neutron component in OpenStack.	CO5	[K₂]

Answer any FIVE Questions:-
PART C (5 x 14 = 70 Marks)
(Answer not more than 350 words)

21.	a)	Demonstrate the process of map-reduce components in counting words.	7	CO1	[K₂]
	b)	Explain the working procedure of Napster peer to peer system in detail.	7	CO1	[K₂]
22.	a)	Describe about primary cloud service models.	10	CO2	[K₄]
	b)	Analyze the various challenges involved in adopting cloud computing.	4	CO2	[K₄]
23.	a)	Organize different implementation levels of Virtualization and explain.	7	CO3	[K₃]
	b)	Demonstrate different types of hypervisors used in cloud.	7	CO3	[K₃]
24.		Explain Hypervisor clustering architecture with neat diagram.	14	CO4	[K₂]
25.		Illustrate the Docker container architecture.	14	CO5	[K₂]

26. a) Demonstrate different types of load balancers used to streamline the traffic to application servers.   7   CO4   [K$_2$]

b) Describe different zones used in Oracle Solaris Zones.   7   CO5   [K$_2$]

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