Register Number:……..

KUMARAGURU
college of technology
character is life

B.E/B.TECH DEGREE EXAMINATIONS: DECEMBER 2022

(Regulation 2018)

Seventh Semester

COMPUTER SCIENCE AND ENGINEERING

U18CSI7201**:** Cloud Computing

COURSE OUTCOMES

CO1: Demonstrate server virtualization concept and create virtual servers. [K3]
CO2: Apply network virtualization and create virtual private cloud. [K3]
CO3: Design Web Application in public cloud environment. [K5]
CO4: Build databases in public cloud. [K5]

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. PaaS	i. Xen
B. SaaS	ii. AWS
C. IaaS	iii. DropBox
D. Hypervisor	iv. Google App Engine

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

2. Determine the type of Cloud – SWIGGY.IN formed a cloud for all its branches, due to its limited resources it obtained the services of AWS for extended provisioning and modified its cloud. The cloud is an example of? CO1 [K_3]

a) Private Cloud b) Community Cloud

c) Public Cloud d) Hybrid Cloud

3. Enumerate the statements related to AWS spot instances CO3 [K_2]

i. Spot instances are subject to interruption
ii. Spot instance pricing is slightly higher than the regular ones
iii. Critical computation task needed spot instances model over regular model

iv. Spot instance have different billing model than regular

a) i, ii b) i, iv

c) ii, iii d) ii, iii, iv

4. The Springfield Nuclear Power Plant has created an online application teaching nuclear physics. Students in the Springfield Elementary school access this application via the cloud, and teachers can monitor the student's progress. Determine the type of cloud service model? CO2 [K_3]

a) PaaS b) IaaS

c) NaaS d) SaaS

5. Examine the two statements carefully and select the answer using the codes given below: CO3 [K_3]
Assertion (A): In Cloud, users need not worry about back up and recovery
Reason (R): Cloud offers unlimited storage capacity.

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. "Heartland Data Breach: Heartland's payment processing systems were using known-vulnerable software and actually infected, but Heartland was "willing to do only the bare minimum and comply with state laws instead of taking the extra effort to notify every single customer, regardless of law, about whether their data has been stolen." Determine the type of security threat? CO4 [K_3]

a) Insecure Interfaces and APIs b) Shared Technology Issues

c) Account or Service Hijacking d) Unknown Risk Profile

7. Sequence the steps to launch a virtual machine using AWS. CO3 [K_3]

i. Choose the VM type and configure it
ii. Add the specific tags
iii. Launch the VM
iv. Configure Security Group
v. Connect to the VM.

a) i – ii– iv – iii – v b) i – ii – iii – iv – v

c) ii – iv – i – iii – v d) ii – iii – v – i – iv

8. Recommend the threat that is suitable for the below listed Remediation? CO4 [K_2]

i. Prohibit the sharing of account credentials between users and services.
ii. Leverage strong two-factor authentication techniques where possible.
iii. Employ proactive monitoring to detect unauthorized activity.
iv. Understand cloud provider security policies and SLAs.

a) Unknown Risk Profile b) Data Loss or Leakage

c) Account or Service Hijacking d) Shared Technology Issues

9. Identify the company who is a leader in Cloud Security and Virtualization Security Markets? CO3 [K_2]

a) McAfee Inc b) Symantec

c) Trend Micro Inc d) CA Technologies

10. A company is deploying a new two-tier web application in AWS. The company has limited staff and requires high availability, and the application requires complex queries and table CO4 [K_3]

joins. Assess the configuration that provides solution for the company's requirements?

a) Amazon ElastiCache
b) MySQL Installed on two Amazon EC2 Instances in a single Availability Zone
c) Amazon DynamoDB
d) Amazon RDS for MySQL with Multi-AZ

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

11.	Enumerate the problems in maintaining IT infrastructure.		CO1	[K_2]
12.	Differentiate AWS and on-premises solutions.		CO1	[K_2]
13.	Explain paravirtualization.		CO2	[K_2]
14.	Differentiate virtualization and Cloud Computing		CO2	[K_2]
15.	Assume you have a content management system running on an Amazon EC2 instance that is approaching 100% CPU utilization. Analyze and recommend a solution that will reduce load on the Amazon EC2 instance?		CO3	[K_3]
16.	List the advantages of public cloud.		CO3	[K_2]
17.	Enumerate the methodologies in securing the cloud.		CO3	[K_2]
18.	Explain service hijacking.		CO4	[K_2]
19.	List few use cases when not to migrate to Cloud.		CO4	[K_2]
20.	Enumerate the factors to consider before migration		CO4	[K_2]

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

21.	a)	Elaborate the unique features of Cloud Deployment models along with examples of service providers.	14	CO1	[K_2]
22.	a)	Illustrate the Cloud Service models.	06	CO1	[K_2]
	b)	You are starting a new company to analyze videos. You require large amount of storage as videos consume disk space. Additionally, you need ample computational power for running applications concurrently. You have discovered few tools to facilitate development in Windows, but the deployment will be more efficient in Linux. All the pointers say that you need to move to the Cloud. You have also found that SaaS is the attractive service followed by PaaS and IaaS. Given the above information, recommend the service model along with	08	CO1	[K_3]

justification.

23.	a)	Classify migration techniques with diagrammatic representation	10	CO2	[K_2]
	b)	Explain hypervisor along with its types.	04	CO2	[K_2]
24.	a)	Explain the building blocks of Private Cloud.	08	CO2	[K_2]
	b)	Outline the architecture of AWS.	06	CO2	[K_2]
25.	a)	Summarize the security concerns of Cloud Computing	07	CO3	[K_2]
	b)	The Sidekick smartphones were originally produced by Danger, Inc., a company that was bought by Microsoft in February 2007. After the acquisition, the former Danger staff were then absorbed into the Mobile Communications Business (MCB) of the Entertainment and Devices Division at Microsoft, where they worked on a future Microsoft mobile phone platform known as Project Pink. On Friday, October 2, 2009, T-Mobile Sidekick phone users started noticing data service outages occurring. The outages lasted approximately two weeks, and on October 10, 2009, T-Mobile announced that personal information stored on Sidekick phones would be permanently lost, which turned out to be incorrect. The incident caused a public loss of confidence in the concept of cloud computing, which had been plagued by a series of outages and data losses in 2009. It also was problematic for Microsoft, which at the time was trying to convince corporate clients to use its cloud computing services, such as Azure and My Phone. A company statement said the mishap was due to "a confluence of errors from a server failure that hurt its main and backup databases supporting Sidekick users". T-Mobile blamed Microsoft for the loss of data. Identify the Security threat and recommend the remediation.	07	CO3	[K_3]
26.	a)	Elaborate the five-phase cloud migration process	14	CO4	[K_2]

****