PRESIDENCY UNIVERSITY
BENGALURU

SET-A

SCHOOL OF ENGINEERING
END TERM EXAMINATION – MAY/JUNE 2024

Semester : Semester VIII - 2020

Course Code : CSE3095

Course Name : Cloud Security

Program : B.Tech-Computer Science and Engineering

Date : MAY 31-2024

Time : 9:30 AM-12:30 PM

Max Marks :100

Weightage : 50%

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Note: 1. **Answer ALL 5 FULL Questions.**
       2. **Each Full Question carries 20 Marks**
       3. **Scientific and non-programmable calculator are permitted.**
       4. **Do not write any information on the question paper other than Roll Number.**

1.a.	Define on-demand functionality. State the General principles and technologies behind on-demand services. **[Knowledge]**	**(CO1)**	**(04 Marks)**
1.b.	Describe in details the characteristics and applications of community cloud. **[Comprehension]**	**(CO1)**	**(06 Marks)**
1.c.	A retail company has websites that require high performance. They have on premise servers to handle the work, but sometimes during seasons of sales, they experience periods of spikes in traffic. Discuss the appropriate deployment model to handle traffic spikes **[Application]**	**(CO1)**	**(10 Marks)**

or

2.a.	Define autonomic security. List out the different autonomic computing characteristics defined by IBM **[Knowledge]**	**(CO1)**	**(04 Marks)**
2.b.	Discuss in detail about types of cloud services with suitable diagram. **[Comprehension]**	**(CO1)**	**(06 Marks)**
2.c.	Illustrate with an example how SPI model is different from cloud delivery model. **[Application]**	**(CO1)**	**(10 Marks)**

3.a.	Identify the details to be recorded in IT Audit logs. **[Knowledge]**	**(CO2)**	**(04 Marks)**
3.b.	List and explain the roles and responsibilities of Computer Security Incident Response Team(CSIRT). **[Comprehension]**	**(CO2)**	**(06 Marks)**
3.c.	Digital signatures are used for authentication in Public Key Infrastructure. illustrate with a neat sketch. **[Application]**	**(CO2)**	**(10 Marks)**

or

4.a.	List and Explain the security policy implementation measures. **[Knowledge]**	**(CO2)**	**(04 Marks)**
4.b.	Explain updating and patching security techniques in VM. **[Comprehension]**	**(CO2)**	**(06 Marks)**
4.c.	The company of multiple departments, each with different levels of access requirements to the financial data. The CEO and CFO require full access to all financial records, including the ability to modify them. Department heads need access to their department's financial data for monitoring and reporting purposes but should not be able to modify records. Demonstrate how to enforce access control, manage user permissions, authenticate users, and log access activities. **[Application]**	**(CO2)**	**(10 Marks)**
5.a.	Define BCP/DRP. What are the alternative services during disasters? **[Knowledge]**	**(CO3)**	**(04 Marks)**
5.b.	Explain the classification of Recovery Time Frame Requirements. **[Comprehension]**	**(CO3)**	**(06 Marks)**
5.c.	Demonstrate the importance of security training and awareness programs for employees in the context of cloud security. What topics should be covered, and how do these programs help mitigate security risks. **[Application]**	**(CO3)**	**(10 Marks)**

or

6.a.	List and explain with an example two types of IT auditors. **[Knowledge]**	**(CO3)**	**(04 Marks)**
6.b.	Differentiate between cloud computing and traditional computing. A company wants the services of cloud for selling their products. According to your knowledge which types of cloud services the company need. Why it is in need? Discuss. **[Comprehension]**	**(CO3)**	**(06 Marks)**
6.c.	Illustrate any 10 NIST 33 principles and briefly explain them. **[Application]**	**(CO3)**	**(10 Marks)**
7.a	Explain why scalability and elasticity are essential requirements for cloud software. **[Knowledge]**	**(CO4)**	**(04 Marks)**
7.b.	Explain the importance of firewall implementation in network security. Discuss different types of firewalls and their configurations. **[Comprehension]**	**(CO4)**	**(06 Marks)**
7.c	Demonstrate the importance of integrating security into the Software Development Lifecycle(SDLC). **[Application]**	**(CO4)**	**(10 Marks)**

or

8.a	Describe the significance of backup and recovery strategies for host systems. **[Knowledge]**	**(CO4)**	**(04 Marks)**
8.b.	Describe the challenges of DOS and EDOS. **[Comprehension]**	**(CO4)**	**(06 Marks)**
8.c	Describe the role of firewalls and intrusion detection systems (IDS) in protecting network infrastructure. How do these tools help prevent unauthorized access and detect malicious activities? **[Application]**	**(CO4)**	**(10 Marks)**

9.a	Explain in detail about the different types of testing in secure Cloud software. **[Knowledge]**	**(CO3)**	**(04 Marks)**
9.b	List out and explain in detail various Secure Development Practices. **[Comprehension]**	**(CO3)**	**(06 Marks)**
9.c	Interpreted the unique challenges and considerations for conducting security testing in a cloud environment. How do you address these challenges? **[Application]**	**(CO3)**	**(10 Marks)**

or

10.a	Define Network Access Control (NAC), and what are its primary functions. **[Knowledge]**	**(CO4)**	**(04 Marks)**
10.b	Describe strategies for mitigating Distributed Denial of Service (DDoS) attacks at the network level. **[Comprehension]**	**(CO4)**	**(06 Marks)**
10.c	Illustrate the concept of secure boot and firmware protection. And explain how do these mechanisms ensure the integrity of the host system from the start-up process. **[Application]**	**(CO4)**	**(10 Marks)**