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

**UE18CS335**

**AUGUST 2021: END SEMESTER ASSESSMENT (ESA) B. TECH VI SEMESTER**  
**UE18CS335 – COMPUTER NETWORK SECURITY**

Time: 3 Hrs	Answer All Questions	Max Marks: 100
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1	a)	Recall the core security principles of information security. Consider the example of a bank ATM, which can offer users access to bank balances and other information. Validate each principle with this scenario.	6
	b)	Illustrate any three real life examples of cyber-crime. What were the threats, vulnerabilities and risks associated in all the scenarios?	9
	c)	Write a short note on Cybersecurity framework.	5
2	a)	How will you construct a spoofed IP packet and send the packet out? Explain with a sample code.	10
	b)	You want to perform an attack on an SSH connection between a victim and a server. Write the python code and list out the essential parameters to perform the attack.	5
	c)	How can an attacker steal the content of a file from the server using TCP session hijacking attack?	5
3	a)	Explain how you can evade firewalls using the following techniques: i. SSH tunnelling ii. Dynamic port forwarding	10
	b)	What is a DMZ? With a neat diagram, illustrate how to increase the network security of an organization's internal network by deploying a DMZ.	6
	c)	Compare anomaly and signature-based intrusion detection system.	4
4	a)	Elaborate on Reply Forgery attacks from malicious DNS servers.	6
	b)	List out the challenges involved in performing remote DNS cache poisoning attacks. How to overcome these challenges?	4
	c)	Demonstrate how you can detect and exploit heartbleed vulnerability? Describe how to fix the vulnerability. Your answer should include a snippet of code, a description of how the new code fixes the vulnerability.	10
5	a)	Compare the strength and weakness of wireless security protocols including WEP, WPA1 and WPA2.	12
	b)	Recall the security issues in cloud computing environment.	8