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## MCA DEGREE V SEMESTER EXAMINATION, JANUARY 2022

## 19-381-0535 SECURITY THREATS AND VULNERABILITIES

(Regular)

Maximum Marks :50

Time: 3 Hours

Answer Any Five questions  
All Question carry EQUAL Marks

		QUESTIONS	MARKS	CO	BL	PI																									
1.	(a)	Describe the model for network security with a neat diagram.	4	COI	L2	1.6.1																									
	(b)	Use the key 1110 0111 1011 1010 to encrypt the plain text “OK” as expressed in ASCII as 0100 1111 0100 1011. Calculate the round keys.You may use the information below, S-Box is <table border="1"><tr><td></td><td>00</td><td>01</td><td>10</td><td>11</td></tr><tr><td>00</td><td>9</td><td>4</td><td>A</td><td>B</td></tr><tr><td>01</td><td>D</td><td>1</td><td>8</td><td>5</td></tr><tr><td>10</td><td>6</td><td>2</td><td>0</td><td>3</td></tr><tr><td>11</td><td>C</td><td>E</td><td>F</td><td>7</td></tr></table>		00	01	10	11	00	9	4	A	B	01	D	1	8	5	10	6	2	0	3	11	C	E	F	7	6	CO3	L3	1.7.1
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11	C	E	F	7																											
2.	(a)	Explain significance of control and countermeasures in computer security? Describe different control types.	6	CO2	L2	1.7.1																									
	(b)	Define vulnerability. Give FOUR examples of vulnerabilities in a network.	4	CO2	L2																										
3.	(a)	With a neat diagram briefly explain the Feige-Fiat-Shamir Identification Protocol.	5	CO4	L2	1.6.1																									
	(b)	Bob and Alice are having a debate about Public Key Infrastructure (PKI). Bob says that it is simply a way of authenticating users. However, Alice argues that it is a type of encryption algorithm. Briefly outline both the scenarios in PKI.	5	CO4	L3	1.6.1																									

4.		Define Firewall. Explain different types of Firewalls.	10	CO5	L2	1.6.1
5.	(a)	What is Secure MIME?	3	CO5	L3	1.6.1
	(b)	How does S/MIME works?	7	CO5	L3	
6.		Explain different types of attacks in detail.	10	CO2	L2	1.6.1
7.	(a)	Describe different types of intruders? Arrange them in terms of complexity.	5	CO4	L2	1.6.1
	(b)	What is polymorphic and metamorphic malware?	7	CO5	L3	1.6.1

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