


Name: Enrolment No:			
UPES End Semester Examination, December 2023			
Course: Physical and IT Security Program: B. Tech CSE CSF Course Code: CSSF2012		Semester: III Time : 03 hrs. Max. Marks: 100	
Instructions: <input type="checkbox"/> This examination paper contains ELEVEN (11) Questions. You must answer ALL THE QUESTIONS. <input type="checkbox"/> Please read all questions carefully and make sure you understand the question before you begin answering.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	Cyber security and physical security go hand in hand. Justify.	4	CO1
Q 2	List various physical security control (technical controls).	4	CO1
Q 3	Assess the challenges associated with securing hardware (physical) and software (logical) ports as crucial endpoints for external communication. List various ports.	4	CO2
Q 4	Define the terms root kits, port scanning and denial of service attack.	4	CO3
Q 5	Describe four A's of IT System Security.	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	List and explain two major encryption techniques with an example. Or Define and contrast digital certificates and digital signatures.	10	CO2
Q 7	In a real-world scenario, imagine you are a database administrator responsible for securing a critical database server. Describe at least five specific threats and attacks that the database server might face and provide explanations for each. Additionally, outline the best practices and security measures you would implement to protect the database server from these threats and attacks.	10	CO3
Q 8	Recall importance of endpoint security. List functionalities and pillars of endpoint security.	10	CO1

Q 9	Security surveys and audits play a vital role in achieving a comprehensive security plan for any organization. In this context, list and explain the nine-points of security concern for auditor.	10	CO3
SECTION-C (2Qx20M=40 Marks)			
Q 10	<p>Elliot wishes to hire you as a Cyber Physical security expert to provide recommendations for his start-up company named “AllSafe”. You conducted survey of the location and came up with recommendations. List various steps to improve Physical and IT system security for AllSafe (use learning from all ppts).</p> <p style="text-align: center;">Or</p> <p>(a) Explain multi-factor authentication. List various levels of Physical Security and relate them to real life scenarios.</p> <p>(b) Explain PoE injectors, PoE splitters, PoE extenders, PoE hub, and PoE switch along with their specific use cases.</p>	20	CO4
Q 11	<p>For a company named “UPLOAD”, Nathan as security analyst tasked with securing sensitive data using the RSA encryption algorithm. Given the following parameters: $p = 11$, $q = 13$, $e = 11$, receives a cipher text (44, 36, 59, 84) from Nora. Where, ASCII values of the letters: A = 65, B= 66, ..., Z= 90.</p> <p>(a) Describe in detail how Nathan would perform encryption and decryption using the RSA algorithm.</p> <p>(b) Perform the decryption process of the cipher text “44, 36, 59, 84” and generate the original message.</p>	10+10	CO5