



INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

INFORMATION TECHNOLOGY

TUTORIAL QUESTION BANK

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| Course Name | INFORMATION SECURITY |
| Course Code | ACS013 |
| Class | B. Tech VIII Semester |
| Branch | Information Technology |
| Course Coordinator | Ms B Geetavani, Assistant Professor |
| Course Faculty | Ms B Anupama, Assistant Professor Ms B Swathi, Assistant Professor Ms P Navya, Assistant Professor |

COURSE OBJECTIVES:

The course should enable the students to:

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| I | Understand the basic categories of threats to computers and networks. |
| II | Master the implementation of various cryptographic algorithms. Be familiar with public cryptography. |
| III | Analyze PGP and use PGP package to send encrypted e-mail message. |
| IV | Interpret the operation of the protocols that are used inside the Internet. |
| V | Discuss the place of ethics in the information security area. |

COURSE OUTCOMES:

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| CO1 | Understand the basic concepts on attacks of computer and computer security. |
| CO2 | Understand the concepts of symmetric key ciphers. |
| CO3 | To describe about the message authentication algorithm and hash functions. |
| CO4 | Understand the concepts of e-mail security. |
| CO5 | Understand the concepts of web security. |

COURSE LEARNING OUTCOMES:

Students, who complete the course, will have demonstrated the ability to do the following:

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| ACS013.01 | Understand the different types of attacks, security mechanisms, security services. |
| ACS013.02 | Explain Define various substitution techniques such as play-fair cipher, mono-alphabetic cipher and hill cipher. |
| ACS013.03 | Understand various Transposition techniques such as row transposition and rail fence. |
| ACS013.04 | Describe the role of key in encryption and key size. |
| ACS013.05 | Apply the symmetric algorithm for message transmission and analyze the security level of it. |
| ACS013.06 | Understand various asymmetric key encryption algorithms for message encryption and decryption. |
| ACS013.07 | Understand the block cipher modes of operation for encryption and decryption. |
| ACS013.08 | Describe the need of stream ciphers in message encryption. |
| ACS013.09 | Understand the role of elliptic curve cryptography in security. |
| ACS013.10 | Analyze the drawbacks of RSA and students will be able to design a security algorithm which overcomes that drawbacks. |

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| ACS013.11 | Explain the role of the message authentication in message transmission. |
| ACS013.12 | Explain the need of digital signature in message transmission. |
| ACS013.13 | Explain and demonstrate the role of different types of hash functions for providing security. |
| ACS013.14 | Understand the differences between the symmetric and asymmetric cryptography algorithms for providing security. |
| ACS013.15 | Explain S/MIME and PGP for transmitting mail from sender to receiver. |
| ACS013.16 | Explain IP security for internet protocol and analyze how it provides security. |
| ACS013.17 | Describe the security socket layer and transport layer security for web security. |
| ACS013.18 | Analyze various types of intrusion detection techniques. |
| ACS013.19 | Describe various types of viruses and its threats. |
| ACS013.20 | Describe various types of firewalls and analyze the security level of these. |

TUTORIAL QUESTION BANK

| UNIT - I | | | | |
|-----------------------------------|---|-----------------------|-----------------|--------------------------|
| PART - A (SHORT ANSWER QUESTIONS) | | | | |
| S.No | Question | Blooms Taxonomy Level | Course Outcomes | Course Learning Outcomes |
| 1. | Explain security attacks. | Remember | CO1 | ACS013.01 |
| 2. | Enumerate traffic analysis? | Understand | CO1 | ACS013.01 |
| 3. | Categorize active attacks. | Understand | CO1 | ACS013.01 |
| 4. | Categorize passive attacks. | Understand | CO1 | ACS013.01 |
| 5. | Mention the key principles of security. | Remember | CO1 | ACS013.01 |
| 6. | Distinguish active and passive attacks? | Understand | CO1 | ACS013.01 |
| 7. | Enumerate the mechanisms implemented for | Remember | CO1 | ACS013.01 |
| 8. | List briefly categories of security mechanisms. | Understand | CO1 | ACS013.01 |
| 9. | Specify basic tasks for defining a security services? | Remember | CO1 | ACS013.01 |
| 10. | Differentiate symmetric and asymmetric encryption? | Remember | CO1 | CAIT004.01 |
| 11. | Define cryptanalysis? | Understand | CO1 | ACS013.01 |
| 12. | List various Security approaches? | Understand | CO1 | ACS013.03 |
| 13. | Specify model for Network Security. | Remember | CO1 | ACS013.01 |
| 14. | Explain the need for security. | Remember | CO1 | ACS013.01 |
| 15. | Distinguish substitution techniques? | Understand | CO1 | ACS013.01 |
| 16. | Distinguish transposition techniques? | Understand | CO1 | ACS013.02 |
| 17. | Differentiate encryption and decryption? | Understand | CO1 | ACS013.03 |
| 18. | Differentiate symmetric and asymmetric key | Understand | CO1 | ACS013.04 |
| 19. | Define steganography. | Remember | CO1 | ACS013.04 |
| 20. | Enumerate key range and key size? | Understand | CO1 | ACS013.04 |
| PART -B (LONG ANSWER QUESTIONS) | | | | |
| 1. | Explain security attacks, security services and security mechanisms with neat diagrams. | Understand | CO1 | ACS013.01 |
| 2. | Define cryptanalysis? Mention the types of cryptanalysis and explain the amount of information known to cryptanalytic? | Remember | CO1 | ACS013.04 |
| 3. | Demonstrate model for internetwork security with neat diagram? | Understand | CO1 | ACS013.01 |
| 4. | Explain various types of transposition techniques. | Understand | CO1 | ACS013.03 |
| 5. | Define Caesar cipher? And calculate the encryption and decryption for the plain text P="COME TO MY HOME" by using caser cipher with Key k=3? | Remember | CO1 | ACS013.03 |
| 6. | Convert the following plain text message P="THIS IS NOT A GOLD" into cipher text with key k="play fair example" by using playfair cipher technique? | Understand | CO1 | ACS013.03 |
| 7. | Convert the following plain text P="TRUST MEE" into cipher text by using Hill cipher with key K= which is a 2X2 matrix (only encryption). | Understand | CO1 | ACS013.03 |
| 8. | Explain poly-alphabetic ciphers with examples and its | Understand | CO1 | ACS013.03 |
| 9. | Explain the following i) Transposition Techniques ii) Steganography | Remember | CO1 | ACS013.03 |
| 10. | Explain Hill cipher with examples. | Understand | CO1 | ACS013.03 |
| 11. | Explain Caesar cipher and mono-alphabetic ciphers with examples? | Remember | CO1 | ACS013.03 |

| PART -C (CRITICAL THINKING QUESTIONS) | | | | |
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| 1. | Define Caesar cipher? And calculate the encryption and decryption for the following plain text P="MEET ME" by using caser cipher with Key k =3? | Understand | CO1 | ACS013.03 |
| 2. | Convert the following plain text message P="Hide the gold in the tree stump" into cipher text with key k="play fair example" by using play fair cipher technique? | Understand | CO1 | ACS013.03 |
| 3. | Convert the following plain text P="Come To School" into cipher text byusing Hill cipher with key K= 3. | Understand | CO1 | ACS013.03 |
| 4. | Convert the following plain text message P="I discovered a gravitational force "into cipher text by using mono alphabetic cipher technique | Understand | CO1 | ACS013.03 |
| . | Understand and contrast all kinds of cipher techniques in the cryptography? | Remember | CO1 | ACS013.02 |
| 5. | Convert the following plain text message P="we are discovered save yourself" into cipher text with key K="deceptive" with key repetition. | Understand | CO1 | ACS013.03 |
| 6. | Convert the following plain text message P="cryptography provides high security" into cipher text by using simple columnar transposition technique basic technique with multiple rounds | Understand | CO1 | ACS013.03 |
| 7. | Differentiate transposition techniques and substitution techniques? | Remember | CO1 | ACS013.02 |

UNIT – II

| PART - A (SHORT ANSWER QUESTIONS) | | | | |
|--|--|------------|-----|-----------|
| 1. | Understand stream and block ciphers with examples? | Understand | CO2 | ACS013.07 |
| 2. | Differentiate DES, AES, Blowfish algorithms? | Understand | CO2 | ACS013.06 |
| 3. | Differentiate Differential and Linear Cryptanalysis? | Remember | CO2 | ACS013.06 |
| 4. | Enumerate design parameters of feistel cipher structure? | Understand | CO2 | ACS013.05 |
| 5. | Define product cipher? | Understand | CO2 | ACS013.07 |
| 6. | Listoutblock cipher modes of operation? | Remember | CO2 | ACS013.07 |
| 7. | Differentiate link and end-to-end encryption? | Understand | CO2 | ACS013.06 |
| 8. | Differentiate session key and master key? | Understand | CO2 | ACS013.05 |
| 9. | State advantages of counter mode? | Understand | CO2 | ACS013.08 |
| 10. | Explain essential ingredients of symmetric cipher. | Understand | CO2 | ACS013.05 |
| 11. | Specify the design criteria of block cipher? | Understand | CO2 | ACS013.07 |
| 12. | Explain RC4 Location. | Understand | CO2 | ACS013.08 |
| 13. | Enumerate placement of encryption function? | Understand | CO2 | ACS013.06 |
| 14. | List key distribution Asymmetric key Ciphers? | Remember | CO2 | ACS013.06 |
| 15. | Explain principles of public key cryptosystems. | Remember | CO2 | ACS013.06 |
| 16. | Differentiate RSA Diffie-Hellmann, ECC Key Distribution Algorithm? | Understand | CO2 | ACS013.09 |
| 17. | Explain the procedure for DES algorithm. | Understand | CO2 | ACS013.05 |
| 18. | List the steps in AES algorithms? | Understand | CO2 | ACS013.05 |
| 19. | Explain the procedure for RSA algorithm. | Understand | CO2 | ACS013.10 |
| 20. | Describe the steps in ECC Key Distribution algorithm? | Understand | CO2 | ACS013.09 |

PART -B (LONG ANSWER QUESTIONS)

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|-----|---|------------|-----|-----------|
| 1. | Justify how DES algorithm uses feistel cipher structure. | Remember | CO2 | ACS013.05 |
| 2. | Describe how Compile the process how RC4 decryption is reverse of its encryption? | Understand | CO2 | ACS013.05 |
| 3. | Enumerate the principles of conventional encryption algorithms? | Understand | CO2 | ACS013.05 |
| 4. | Demonstrate how encryption is misused to attack the system? | Remember | CO2 | ACS013.05 |
| 5. | Recite round function evaluation in feistel cipher structure? | Remember | CO2 | ACS013.05 |
| 6. | Understand and contrast DES, 3-DES and AES? | Remember | CO2 | ACS013.05 |
| 7. | Illustrate the procedure of key distribution in conventional encryption | Remember | CO2 | ACS013.06 |
| 8. | Explain block cipher modes of operations. | Remember | CO2 | ACS013.07 |
| 9. | Explain Diffie- Hellman algorithm. | Remember | CO2 | ACS013.09 |
| 10. | Justify how DES algorithm uses feistel cipher structure? | Understand | CO2 | ACS013.05 |
| 11. | Formulate AES encryption and decryption process with neat sketch? | Understand | CO2 | ACS013.05 |
| 12. | Differentiate between AES and DES in a brief manner? | Understand | CO2 | ACS013.05 |

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| 13. | Demonstrate how the placement of encryption will works? | Remember | CO2 | ACS013.06 |
| 14. | Explain briefly about RSA algorithm and ECC in a detail manner. | Understand | CO2 | ACS013.09 |
| 15. | Explain all the principles of the public key crypto systems. | Remember | CO2 | ACS013.06 |
| 16. | Explain how key is distributed in the RSA algorithm. | Understand | CO2 | ACS013.10 |
| 17. | Explain briefly how diffusion and confusion increases complexity to thwart the cryptanalyst. | Remember | CO2 | ACS013.06 |
| 18. | Explain elliptic curve cryptography. | Remember | CO2 | ACS013.05 |
| 19. | Explain linear and differential cryptanalysis in a detail manner. | Understand | CO2 | ACS013.05 |
| 20. | Differentiate Blowfish, AES and RC4? | Understand | CO2 | ACS013.09 |

PART -C (CRITICAL THINKING QUESTIONS)

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|-----|---|------------|-----|-----------|
| 1. | Show that in DES the first 24 bits of each sub key come from the same subset of 28 bits of the initial key and that the second 24 bits of each sub key come from a disjoint subset of 28 bit initial key. | Remember | CO2 | ACS013.05 |
| 2. | If a bit error occurs in the transmission of a cipher text character in 8-bit CFB mode how far does the error propagate? | Understand | CO2 | ACS013.07 |
| 3. | Differentiate block cipher and stream cipher techniques? | Remember | CO2 | ACS013.07 |
| 4. | Differentiate diffusion and confusion in the cryptography | Understand | CO2 | ACS013.05 |
| 5. | Describe the differences between differential and linear cryptanalysis? | Remember | CO2 | ACS013.05 |
| 6. | Explain why do some block cipher modes of operation only use encryption while others use both encryption and decryption. | Understand | CO2 | ACS013.07 |
| 7. | Explain different types of stream ciphers with neat diagrams. | Remember | CO2 | ACS013.08 |
| 8. | Describe why it is important to study the feistel cipher? | Remember | CO2 | ACS013.05 |
| 9. | Explain briefly which parameters and design choices determine the actual algorithm of a feistel cipher. | Remember | CO2 | ACS013.05 |
| 10. | Describe the purpose of the S-boxes in DES? | Understand | CO2 | ACS013.05 |

UNIT – III

PART - A (SHORT ANSWER QUESTIONS)

| | | | | |
|-----|--|------------|-----|-----------|
| 1. | Explain Authentication requirements. | Understand | CO3 | ACS013.11 |
| 2. | List authentication codes? | Understand | CO3 | ACS013.11 |
| 3. | Explain Secure hash algorithm? | Understand | CO3 | ACS013.13 |
| 4. | Discuss whirlpool. | Understand | CO3 | ACS013.11 |
| 5. | Explain the steps in knapsack algorithm. | Understand | CO3 | ACS013.13 |
| 6. | Differentiate HMAC and CMAC? | Remember | CO3 | ACS013.11 |
| 7. | List authentication requirements? | Understand | CO3 | ACS013.11 |
| 8. | Differentiate MD4 and MD5? | Understand | CO3 | ACS013.11 |
| 9. | Define HMAC. | Remember | CO3 | ACS013.11 |
| 10. | Discuss CMAC. | Remember | CO3 | ACS013.11 |

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|-----|---|------------|-----|-----------|
| 1. | Discuss Public – Key Infrastructure. | Understand | CO3 | ACS013.14 |
| 2. | Mention key principles of Biometric Authentication?. | Remember | CO3 | ACS013.14 |
| 3. | Differentiate between private and public key? | Understand | CO3 | ACS013.14 |
| 4. | Enumerate uses of public key cryptography? | Understand | CO3 | ACS013.14 |
| 5. | Define digital signatures. | Understand | CO3 | ACS013.12 |
| 6. | Explain about X.509 certificate. | Remember | CO3 | ACS013.14 |
| 7. | Differentiate simple and secure authentication dialogue in Kerberos | Remember | CO3 | ACS013.12 |
| 8. | List X.509 services? | Understand | CO3 | ACS013.14 |
| 9. | Define message digest? | Understand | CO3 | ACS013.13 |
| 10. | List message authentication applications? | Understand | CO3 | ACS013.11 |

PART -B (LONG ANSWER QUESTIONS)

| | | | | |
|----|--|------------|-----|-----------|
| 1. | Describe the following terms in detail a)whirlpool b)knapsack algorithm | Remember | CO3 | ACS013.11 |
| 2. | Describe briefly what are the different kinds of the authentication requirements are there for message authentication? | Understand | CO3 | ACS013.11 |
| 3. | Explain secure hash algorithms protocol. | Understand | CO3 | ACS013.13 |
| 4. | Explain knapsack algorithm with an example. | Remember | CO3 | ACS013.13 |
| 5. | Explain whirlpool mechanism with an example. | Understand | CO3 | ACS013.11 |
| 6. | Describe how hash algorithms will provide security? | Understand | CO3 | ACS013.13 |

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| 7. | Describe the differences between HMAC and CMAC? | Remember | CO3 | ACS013.13 |
| 8. | Describe digital signatures with an example ? | Remember | CO3 | ACS013.12 |
| 9. | Describe the different types of the message authentication codes and explain with an example? | Understand | CO3 | ACS013.11 |
| 10. | Describe the message digest function in digital signatures and explain with an example? | Remember | CO3 | ACS013.12 |
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| 1. | Define biometric authentication and how it is important to support security in real time and suggest your answer? | Understand | CO3 | ACS013.12 |
| 2. | Differentiate public key and private key and explain public key infrastructure with an example? | Understand | CO3 | ACS013.14 |
| 3. | Define authentication service? Explain x.509 authentication services in a detail manner? | Understand | CO3 | ACS013.14 |
| 4. | Describe the Kerberos security mechanism and explain why it is important in real time for providing security? | Remember | CO3 | ACS013.13 |
| 5. | Differentiate Kerberos v4 and Kerberos v5? | Understand | CO3 | ACS013.13 |
| 6. | Describe why Kerberos is more secure than the other security mechanisms? | Understand | CO3 | ACS013.13 |
| 7. | List out management functions of PKIX and describe the process in public Key infrastructure? | Remember | CO3 | ACS013.14 |
| 8. | Discriminate how X.509 certificate is revoked? | Understand | CO3 | ACS013.14 |
| 9. | Describe the message digest function in digital signatures with an example? | Remember | CO3 | ACS013.12 |
| 10. | Explain X.509 certificates with neat diagram. | Understand | CO3 | ACS013.14 |
| PART - C (CRITICAL THINKING QUESTIONS) | | | | |
| 1. | Describe what changes in HMAC are required in order to replace one underlying hash function with another? | Understand | CO3 | ACS013.11 |
| 2. | Explain why has there been an interest in developing a message authentication code derived from a cryptographic hash function as opposed to one derived from a symmetric cipher? | Understand | CO3 | ACS013.11 |
| 3. | Describe what basic arithmetical and logical functions are used in MD5? | Remember | CO3 | ACS013.13 |
| 4. | What is digital signature? Explain in detail. | Remember | CO3 | ACS013.12 |
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| 5. | Describe the differences between MD4 and MD5. specifically, to what extent? Do you think that MD5 is stronger than MD4, and why? | Understand | CO3 | ACS013.13 |
| 6. | Explain what types of attacks are addressed by message authentication. | Understand | CO3 | ACS013.11 |
| 7. | List some approaches to producing message authentication? | Remember | CO3 | ACS013.11 |
| 8. | Describe what characters are needed in a secure hash function? | Remember | CO3 | ACS013.13 |
| 9. | Describe public key infrastructure? | Remember | CO3 | ACS013.14 |
| 10. | Explain SHA-1, show the values of W16,W17,W18,W19. | Understand | CO3 | ACS013.13 |
| 11. | Explain digital signature and need of digital signature. | Remember | CO3 | ACS013.12 |
| UNIT – IV | | | | |
| PART - A (SHORT ANSWER QUESTIONS) | | | | |
| 1. | What is PGP? | Remember | CO4 | ACS013.15 |
| 2. | Explain why PGP is open source. | Understand | CO4 | ACS013.15 |
| 3. | List out notations used in PGP? | Remember | CO4 | ACS013.15 |
| 4. | List out services of PGP? | Remember | CO4 | ACS013.15 |
| 5. | Explain e-mail compatibility. | Remember | CO4 | ACS013.15 |
| 6. | Explain why does PGP generate a signature before Remembering. | Understand | CO4 | ACS013.15 |
| 7. | Remember how does PGP provide public key management? | Understand | CO4 | ACS013.15 |
| 8. | List MIME content types? | Remember | CO4 | ACS013.15 |
| 9. | Write about IP Security. | Remember | CO4 | ACS013.16 |
| 10. | Explain the utility of a detached signature. | Understand | CO4 | ACS013.16 |
| 11. | Enumerate IP Security overview? | Understand | CO4 | ACS013.16 |
| 12. | Define Authentication Header? | Remember | CO4 | ACS013.16 |
| 13. | Explain encapsulating Security payload. | Remember | CO4 | ACS013.16 |
| 14. | List Combining Security associations? | Understand | CO4 | ACS013.16 |
| 15. | Discuss key management? | Understand | CO4 | ACS013.16 |
| 16. | Define the over view of security? | Understand | CO4 | ACS013.16 |

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| 17. | Define key management? | Understand | CO4 | ACS013.16 |
| 18. | What is header? | Understand | CO4 | ACS013.16 |
| 19. | Write short note on IP security? | Understand | CO4 | ACS013.16 |
| 20. | Describe the architecture of IP Security? | Understand | CO4 | ACS013.16 |
| PART -B (LONG ANSWER QUESTIONS) | | | | |
| 1. | Enumerate all services of PGP and explain with neat sketch? | Understand | CO4 | ACS013.15 |
| 2. | Formulate on what basis Zimmermann has developed PGP for e-mail security? | Understand | CO4 | ACS013.15 |
| 3. | Demonstrate the general format of PGP message with an example? | Understand | CO4 | ACS013.15 |
| 4. | Generalize why in spite of symmetric key, public key and private key, uses three separate requirements what are those and explain why are used? | Understand | CO4 | ACS013.15 |
| 5. | Demonstrate the general structure of Oakley key ? | Understand | CO4 | ACS013.15 |
| 6. | Illustrate ISAKMP key management? | Understand | CO4 | ACS013.15 |
| 7. | Justify why S/MIME is a security enhancement to MIME internet email format standard? | Understand | CO4 | ACS013.15 |
| 8. | Explain of MIME specification with an example. | Understand | CO4 | ACS013.15 |
| 9. | Demonstrate MIME transfer encoding techniques and certificate processing? | Understand | CO4 | ACS013.15 |
| 10. | Illustrate S/MIME message? | Understand | CO4 | ACS013.15 |
| 11. | Describe how encapsulating security payload is defined? | Understand | CO4 | ACS013.16 |
| 12. | Demonstrate combining security associations? | Understand | CO4 | ACS013.16 |
| 13. | Discuss about the key management in email security? | Understand | CO4 | ACS013.15 |
| 14. | Discuss about the IP security architecture in detail? | Understand | CO4 | ACS013.16 |
| 15. | Describe IP security overview? | Remember | CO4 | ACS013.16 |
| 16. | Describe and explain how the security will be provided in Email? | Understand | CO4 | ACS013.15 |
| 17. | Discuss the importance of the authentication header and explain its structure? | Remember | CO4 | ACS013.16 |
| 18. | Define payload? And discuss about encapsulating security payload? | Remember | CO4 | ACS013.16 |
| 19. | Discuss about the MIME content types? | Remember | CO4 | ACS013.15 |
| 20. | Differentiate PGP and MIME types? | Understand | CO4 | ACS013.15 |
| PART -C (CRITICAL THINKING QUESTIONS) | | | | |
| 1. | Explain why PGP generate a signature before remembering | Understand | CO4 | ACS013.15 |
| 2. | Explain why is R64 conversion is useful for an e-mail application. | Understand | CO4 | ACS013.15 |
| 3. | Describe the differences between MIME and S/MIME? | Understand | CO4 | ACS013.15 |
| 4. | Explain the examples of applications of IPSec? | Remember | CO4 | ACS013.16 |
| 5. | Define what are the services provided by IPSec? | Understand | CO4 | ACS013.16 |
| 6. | Describe what are the basic approaches to bundling SAs? | Understand | CO4 | ACS013.16 |
| 7. | Explain why is the segmentation and reassembly function in PGP | Remember | CO4 | ACS013.15 |
| 8. | Define what parameters to identify an SA and what parameters characterize the nature of particular SA? | Understand | CO4 | ACS013.16 |
| 9. | Describe and support your answer how PGP use the concept of trust? | Understand | CO4 | ACS013.15 |
| 10. | Explain why does ESP include a padding field? | Remember | CO4 | ACS013.16 |
| UNIT – V | | | | |
| PART - A (SHORT ANSWER QUESTIONS) | | | | |
| 1. | Collaborate different file access activities used for intrusion detection? | Understand | CO5 | ACS013.18 |
| 2. | Enumerate types of viruses? | Understand | CO5 | ACS013.19 |
| 3. | Remember how does a worm propagate? | Understand | CO5 | ACS013.19 |
| 4. | Remember how biometrics used instead of password for authentication? | Understand | CO5 | ACS013.20 |
| 5. | Discriminate three benefits that can be provided by an intrusion | Understand | CO5 | ACS013.18 |
| 6. | Differentiate statistical anomaly detection and rule based intrusion | Understand | CO5 | ACS013.18 |
| 7. | Explain firewall and principles of firewall? | Remember | CO5 | ACS013.20 |
| 8. | List files access activities used for intrusion detection? | Remember | CO5 | ACS013.18 |
| 9. | Demonstrate techniques used to avoid guessable password? | Remember | CO5 | ACS013.20 |
| 10. | List out design goals for a firewall? | Understand | CO5 | ACS013.20 |
| 11. | Demonstrate an application-level gateway? | Understand | CO5 | ACS013.20 |
| 12. | Discuss in the context of access control ? | Remember | CO5 | ACS013.17 |
| 13. | Evaluate hoe firewall is different from intrusion detection system? | Remember | CO5 | ACS013.20 |
| 14. | Differentiate packet filter routing and a state full inspection firewall? | Understand | CO5 | ACS013.20 |

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| 15. | Remember how biometrics used instead of password for authentication? | Understand | CO5 | ACS013.20 |
| 16. | Explain protocols that comprise SSL. | Understand | CO5 | ACS013.17 |
| 17. | State alert codes of TLS protocol? | Understand | CO5 | ACS013.17 |
| 18. | State parameters that define SSL session state? | Understand | CO5 | ACS013.17 |
| 19. | Differentiate SSL and TLS protocols? | Understand | CO5 | ACS013.17 |
| 20. | Explain services provided by SSL record protocol. | Understand | CO5 | ACS013.17 |
| PART -B (LONG ANSWER QUESTIONS) | | | | |
| 1. | Demonstrate how does the intrusion detection system work when the contents of the network message are encrypted? At what level can this packet be read and analyzed? | Remember | CO5 | ACS013.18 |
| 2. | Describe how hackers exploit vulnerabilities in the network-based computing systems? | Understand | CO5 | ACS013.18 |
| 3. | Analyze various approaches to prevention and detection from users? | Understand | CO5 | ACS013.18 |
| 4. | Remember software threats to systems with a special emphasis on viruses and worms? | Understand | CO5 | ACS013.19 |
| 5. | Enumerate counter measure for viruses and worms? | Understand | CO5 | ACS013.19 |
| 6. | Describe the different types of the secure electronic transaction | Understand | CO5 | ACS013.18 |
| 7. | Explain different types of the viruses and firewalls in web security? | Understand | CO5 | ACS013.20 |
| 8. | Explain the concept of the virtual electronics? | Understand | CO5 | ACS013.20 |
| 9. | Describe the firewall design principles in a detail manner? | Remember | CO5 | ACS013.20 |
| 10. | Discuss about the cross site scripting vulnerability? | Understand | CO5 | ACS013.18 |
| 11. | Define transaction? And explain the inter branch payment transactions? | Remember | CO5 | ACS013.17 |
| 12. | Discuss the different types of firewalls in a detail manner? | Understand | CO5 | ACS013.20 |
| 13. | Differentiate socket layer security and transport security ? | Understand | CO5 | ACS013.17 |
| 14. | Define term intruders? Discuss about intrusion detection password management? | Remember | CO5 | ACS013.18 |
| 15. | Define threat and attacks? And describe virus and related threats? | Remember | CO5 | ACS013.19 |
| 16. | Discuss standard approach to the protection of local computer assets external threats? | Understand | CO5 | ACS013.19 |
| 17. | Discuss firewall design principles and also explain techniques? | Understand | CO5 | ACS013.20 |
| 18. | Discuss how intrusion prevention is achieved through password management? | Understand | CO5 | ACS013.18 |
| 19. | Justify Intrusion provides early warning of an intrusion so that action can be taken to prevent or minimize damage? | Understand | CO5 | ACS013.18 |
| 20. | Differentiate statistical anomaly detection and rule-based intrusion detection? | Understand | CO5 | ACS013.18 |
| PART -C (CRITICAL THINKING QUESTIONS) | | | | |
| 1. | Briefly define the principal categories of SET participants? | Remember | CO5 | ACS013.17 |
| 2. | Briefly define the parameters that define an SSL session state? | Remember | CO5 | ACS013.17 |
| 3. | In SSL and TLS, why is there a separate change cipher Spec protocol rather than including a change cipher-Spec message in the Handshake protocol? | Understand | CO5 | ACS013.17 |
| 4. | Describe what is dual signature and what is its purpose? | Understand | CO5 | ACS013.17 |
| 5. | Briefly define three classes of intruders? | Remember | CO5 | ACS013.18 |
| 6. | Describe what are the two common techniques used to protect a password file? | Understand | CO5 | ACS013.20 |
| 7. | Define firewall? Explain the design principles in detail? | Remember | CO5 | ACS013.20 |
| 8. | Explain briefly about the secure inter branch transactions? | Understand | CO5 | ACS013.17 |
| 9. | Describe about the cross site scripting vulnerability? | Understand | CO5 | ACS013.19 |
| 10. | Explain briefly about the virtual elections? | Understand | CO5 | ACS013.17 |