Key Management Protocol: Key management protocol is like the keeper of secrets in the world of cryptography. It deals with everything related to cryptographic keys, which are essential for keeping our digital information safe.

Why it's important: Imagine keys as the codes that lock and unlock secret messages. If these keys are mishandled, someone could gain unauthorized access to our sensitive data. The key management protocol ensures that these keys are handled securely throughout their lifecycle.

Functions of Key Management Protocol:

a. Generation:

- *What it does:* It's like creating a secret code. The system picks a key that will be used to lock and unlock messages.
- *Why it matters:* Without a good key, your messages won't be safe.

b. Distribution:

- *What it does:* Moving the key from where it's made to where it's needed.
- *Why it matters:* If the key doesn't reach the right place safely, your messages could be at risk.

c. Installation:

- *What it does:* Putting the key into the device or process that will use it.
- *Why it matters:* The key needs to be in the right place to protect your messages.

d. Storage:

- *What it does:* Keeping the key secret and safe while it's stored.
- *Why it matters:* If someone steals the key, they can unlock your messages. So, it needs to be guarded.

e. Change:

- *What it does:* Switching from using one key to another.
- *Why it matters:* If a key is compromised, you want to use a new one to keep your messages secure.

f. Control:

- *What it does:* Making sure the key is used the right way.
- *Why it matters:* You want to make sure no one is using the key to do something they shouldn't.

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6. How can an organization protect its computer system hardware ?
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24. What do you understand by format string vulnerabilities ?
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27. Define and explain the term confidentiality policy.
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29. What are the issues related Bell-LaPadula model?
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33. What are the problems related with MAC ?

34. What are the advantage and disadvantages of DAC and MAC ?
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46. Explain various types of rootkits.
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48. What is Intrusion Detection System (IDS) ?
49. Explain the types of intrusion detection system.
50. Discuss the need of intrusion detection system.
51. Explain advantages and disadvantages of different types of IDS.
52. What are the features of intrusion detection system ?
53. What are the components of IDS ?
54. What is an intrusion detection system ? What are the difficulties in anomaly detection ?
55. Why is security hard ?
56. What is Access Control list (ACL) and also define what are the technologies used in access control ?
57. Write short notes on Software Fault Isolation (SFI)i. Goal and solution, ii. SFI approach.
58. Explain briefly the term access control.
59. Describe different models of access control.

60. Discuss implementation of access control ABAC and MAC.
61. Briefly explain the uses of access control system.
62. What are the components of access control system ?
63. Discuss access control principle and security principle used for access control.
64. What are the characteristics and features of Unix ?
65. Differentiate between Unix and Windows.
66. What are the various issues in access control ?
67. Describe browser isolation.
68. Explain working of browser isolation.
69. Define browser isolation technology. What are browser isolation vendors ?
70. Define web security with its goals.
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72. Discuss threat modelling methodologies.
73. Explain tools used for threats modelling.
74. How to create a threat model ?
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76. Explain security interface framework.
77. Describe cookies and frame busting.
78. Discuss web server threats in details.
79. Describe cross-site request forgery in details.
80. How can we prevent CSRF attack ?
81. When does CSRF attack takes place ?
82. Write short note on cross-site scripting (XSS).
83. Explain different ways used to prevent XSS.
84. Describe XSS vulnerabilities.
85. What is the principle of public key cryptography ? Discuss the applications for public

key cryptography.

86. Difference between symmetric and asymmetric key cryptography.
87. What are the advantages and disadvantages of RSA ?
88. Write a short note on hybrid cryptosystem.
89. Describe briefly the term digital envelope.
90. Explain the digital signatures.
91. Describe the steps used in creating digital signature.
92. Write a short note on Message Digest (MD) hash function.
93. What are the properties and requirements for a digital signature ?
94. Explain the variants of digital signatures.
95. What is hash function ? Discuss SHA-512 with all required steps, round function and block diagram.
96. What are the characteristics of SHA function ?
97. Discuss public key distribution. Describe the various schemes used for public key distribution.
98. Discuss X.509 certificates in detail. What is the role ofX.509 certificates in cryptography ?
99. Discuss X.509 digital certificate format.
100. What do you mean by PGP ? Discuss its application.
101. Discuss the steps that are followed for the transmission and reception of PGP messages.
102. Explain real world protocols.
103. List the basic terminology used in cryptography.
104. Discuss the functionality of S/MIME.
105. What is email security ?
106. What is an email certificate ?
107. What is Transport Layer Security (TLS) ?

108. What are the components of TLS ? Explain the working of TLS.
109. Explain internet protocol security (IPSec) in detail.
110. Write a short note on the applications of IP security.
111. What are the advantages of IPSec ?
112. What are the uses of IP security ?
113. Discuss components of IP Security.
114. Explain the working of IP Security.
115. Describe briefly Domain Name Server (DNS).
116. How DNS security works ?
117. Explain the DNS security threats.
118. Discuss measures against DNS attacks.
119. Explain SSL encryption. What are the steps involved inSSL server authentication ?
120. What is DES ? Why were double and triple DES created and what are they ?
121. Write short note on secret key cryptography. Also list its advantages, disadvantages and examples.
122. Define internet infrastructure. What are different internet infrastructures ?
123. Explain the advantages and disadvantages of in TCP/IP model.
124. Give a short summary of IP protocol functions.
125. Define routing protocols.
126. What are the types of routing protocols ?
127. Discuss the advantages and disadvantages of different routing protocols.
128. What do you mean by DNS ? Explain DNS rebinding attack.
129. How DNS rebinding work ?
130. Discuss the features of DNS rebinding attack.
131. How can we prevent DNS rebinding attack ?
132. What are the advantages and disadvantages of key management protocol ?
133. What are the security and operational requirements forkey management protocol ?

134. Write a short note on VPN and tunnel mode.
135. Discuss link layer connection in TCP/IP model.
136. Write short note on firewall.
137. What is packet filtering firewall ? Explain its advantage and disadvantage.
138. Write short note on telnet.
139. Explain briefly fragmentation at network layer.
140. Write short note on proxy firewall.
141. Write short note on intrusion detection.
142. What is packet filtering firewall ? Explain its advantage and disadvantage.
143. What is Cyberethics?