### [6262]-57

# T.E. (Artificial Intelligence and Data Science Engineering)

## CYBER SECURITY

## (2019 Pattern) (Semester - II) (317530)

*Time : 2½ Hours]*          *[Max. Marks : 70*

*Instructions to the candidates:*

1) *Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
2) *Neat diagrams must be drawn whenever necessary.*
3) *Draw neat figures wherever necessary.*
4) *Figures to the right side indicate full marks.*
5) *Use of calculator is allowed.*
6) *Assume suitable data if necessary.*

*Q1)* a) Explain Public Key Cryptography.      **[6]**

b) Perform encryption and decryption using RSA algorithm for p=l 7, q=31, e = 7 and M = 2.      **[6]**

c) Explain the operations of Kerberos.      **[6]**

### OR

*Q2)* a) Explain operation of MD5 message digest algorithm.      **[6]**

b) User A and B use the Diffie-Helliman key exchange technique with a common prime q = 71 and a primitive root $\alpha = 7$.      **[6]**

    i) If user A has private key $X_A = 5$, what is A's public key $Y_A$?

    ii) If user B has private key $X_B = 12$, what is B's public key $Y_B$?

    iii) What is the shared secret key?

c) Explain X.509 Authentication Service.      **[6]**

*Q3)* a) List and explain components of IPSec protocol.      **[6]**

b) What is VPN? Explain components of VPN.      **[6]**

c) Explain working of PGP in details.      **[6]**

### OR

*P.T.O.*

*Q4)* a) List and explain various participants involved in Secure Electronic Transaction (SET). **[6]**

b) Describe the SSL protocol in details. **[6]**

c) What is S/MIME'? What are the benefits of S/MIME? **[6]**

*Q5)* a) Explain the architecture of firewall. **[6]**

b) What is trusted system? Explain in brief. **[6]**

c) Difference between IDS and IPS. **[5]**

OR

*Q6)* a) List and explain types of Intrusion Detection System. **[6]**

b) What is access control security service? **[6]**

c) Describe operation of packet filtering firewall. **[5]**

*Q7)* a) What is Cyber Staking. **[6]**

b) Write short note on Mobile Hacking. **[6]**

c) Explain Indian IT Act. **[5]**

OR

*Q8)* a) Explain PII impact level with examples. **[6]**

b) Write short note on Cybercrime. **[6]**

c) Write Advantages of cyber law. **[5]**

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