

(2 ½ Hours)

[Total Marks:75]

N.B: (1) All questions are compulsory.

(2) Figures to the right indicate marks.

(3) Illustrations, in-depth answers and diagrams will be appreciated.

(4) Mixing of sub-questions is not allowed.

Q1. Attempt the following (**any THREE**): (15)

- (A) Differentiate between classful and classless addresses.
- (B) Discuss IPv4 protocol packet format
- (C) Write a short note on BGP
- (D) What is routing table? how it is used in forwarding a packet to destination.
- (E) How RIP works? Explain with an example.
- (F) Why do we need IPv6? Discuss advantages of the same.

Q2. Attempt the following (**any THREE**): (15)

- (A) How Process to process delivery happens in an untrusted network.
- (B) Which among UDP, TCP is reliable protocol? Justify your answer.
- (C) Write a short note on the following
 - 1. Congestion Control
 - 2. Quality of Service
- (D) What is DNS? Explain with neat labeled diagram.
- (E) How HTTP works? Explain with an example.
- (F) Discuss importance of FTP in WWW.

Q3. Attempt the following (**any THREE**): (15)

- (A) Discuss different types of security attacks.
- (B) How do we provide security to our network? Discuss in detail.
- (C) List and explain different types of Malicious software.
- (D) How denial of service attack occurs? Explain with an example.
- (E) Define the term Hacking. What is ethical Hacking?
- (F) Write a short note on Worm and explain its advantage and disadvantage.

Q4. Attempt the following (any THREE): (15)

- (A) Explain Modern Symmetric-Key Cipher in detail with an example.
- (B) State and explain DES algorithm in detail.
- (C) Explain in brief Digital Signature.
- (D) How Asymmetric key cryptography works during encryption and decryption of plaintext
- (E) Explain with an example additive cipher and multiplicative cipher.
- (F) How Pretty Good Privacy (PGP) Protocol works with e-mail to provide privacy, integrity and authentication

Q5. Attempt the following (any THREE): (15)

- (A) How Address Resolution protocols works?
- (B) Find the error, if any, in the following IPv4 addresses and give a reason for the error.
 - 1. 233.345.278.23
 - 2. 44:44:23:12
- (C) Discuss the remote logging facility of Telnet.
- (D) Write a short note on demilitarized zone (DMZ) network.
- (E) Define intruder. List and discuss different classes of intruders.
- (F) Write a short note on IPSec.