

(3 Hours)

[Total Marks : 80

- N.B. :** (1) Question No. 1 is **Compulsory**.
 (2) Attempt any **Three** questions from the remaining **Five** questions.
 (3) **Figures** to the **right** indicate **full** marks.

1. Explain any **four** of the following:- **20**
- Packet Switching
 - What are the basic security services? Explain the significance of security in networking
 - What is Supernetting?
 - What are the different benefits and challenges of HL7?
 - List and explain the various domains of IHE.
2. (a) Explain the basic types of network topologies **10**
 (b) Explain addressing system used in TCP/IP protocols **10**
3. (a) Given **10**
- | | |
|-------------------------------|-------------|
| Number of needed subnets | 14 |
| Number of needed usable hosts | 14 |
| Network Address | 192.10.10.0 |
- Find
- Address class
 - Default subnet mask
 - Custom subnet mask
 - Total number of subnets
 - Total number of host addresses
 - Number of usable addresses
 - Number of bits borrowed
- (b) Explain in detail the following security services: **10**
- Message Integrity.
 - Message Authorization.
4. (a) Draw a labelled diagram and explain the generic PACS workflow. **10**
 (b) Explain the Radiology Information System **10**

[Turn Over

5. (a) Define and the following terms: 10
- (i) Virus
 - (ii) Worm
 - (iii) Trojan horse
- (b) What is Archive? Explain the different archives used in PACS 10
6. (a) Explain typical IHE workflow model with suitable diagram 10
- (b) Explain the DICOM data communication model 10
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