

**B.Tech Sem – VI (2007 Course) (Inf. Tech.) : WINTER -  
2017**

**SUBJECT: HIGH PERFORMANCE COMPUTER NETWORKS**

Day: **Wednesday**  
Date: **22/11/2017**

Time: **10.00 AM TO 01.00 PM**  
Max Marks. **80**

**W-2017-2521**

**N.B.**

- 1) **Q. No. 1 and 5 are COMPULSORY.** Out of remaining attempt any **TWO** questions from each section
- 2) Answers to the two sections should be written in **SEPARATE** answer books.
- 3) Figures to the **RIGHT** indicate full marks.
- 4) Use of non – programmable calculator is **ALLOWED**

**SECTION - I**

- Q.1**
- a) Describe ISO's OSI reference model along with protocols associated with each layer. **(05)**
  - b) Describe simplex stop & wait protocol with an example. **(05)**
  - c) Describe limited contention free protocol with an example. **(04)**
- Q.2**
- a) Describe client server model & web based model along with differences between both the models. **(07)**
  - b) Describe network design issues along with example. **(06)**
- Q.3**
- a) Describe simplex protocol for noisy channel along with an example. **(07)**
  - b) Describe repeaters, bridges & switches along with an example. **(06)**
- Q.4**
- a) Frames arrive randomly at a 100 – Mbps channel for transmission. If the channel is busy when a frame arrives, it waits its turn in a queue. Frame length is exponentially distributed with a mean of 10,000 bits/ frame. For each of the following frame arrival rates give the delay experienced by the average frame including both queuing time & transmission time **(07)**
    - i) 90 frames / sec
    - ii) 900 frames / sec
    - iii) 9000 frames / sec
  - b) Describe wireless LAN protocols with an example. **(06)**

**SECTION - II**

- Q.5**
- a) Explain optimal design of computer communication networks. **(05)**
  - b) Enlist and describe ISDN services. **(05)**
  - c) Explain voice over ATM. **(04)**
- Q.6**
- a) Describe high speed switching and routing internet architectures. **(07)**
  - b) Explain objectives & requirements for quality of service (QoS) in high performance networks. **(06)**
- Q.7**
- a) Enlist and explain frame relay protocols & services. **(07)**
  - b) Explain B – ISDN functional architecture. **(06)**
- Q.8**
- a) Enlist & explain applications of ATM. **(07)**
  - b) Describe ATM protocol architecture. **(06)**