(Time: 3 Hours)   **Total Marks: 100**

N.B. :   1) Question No.1 is **compulsory.**
2) Attempt any **four** from the remaining **six** questions.
3) Figures to the right indicate full marks.

Q1. (a) Explain OSI Model with the functionalities of each layer in detail with a neat diagram.   [10]

(b) Explain CSMA, CSMA/CD and CSMA/CA in detail.   [10]

Q2. (a) (i) Show how an error is detected using hamming code with example.   [05]
(ii) Construct the cyclic redundancy code for the frame sequence 1101011011 and the generator is 10011.   [05]

(b) Explain the stop- and-wait protocol in detail.   [10]

Q3. (a) What is asymmetric key encryption? Explain RSA crypto system with suitable example.   [10]

(b) Define Congestion. Explain different methods of handling congestion.   [10]

Q4. (a) Discuss Ethernet standards in detail.   [10]

(b) What is optimality principle? Explain shortest path routing with example.   [10]

Q5. (a) What is ARP? Explain how the host get its physical address using ARP with a suitable example.   [10]

(b) Discuss IPV4 frame format in detail.   [10]

Q6. (a) Explain TCP connection establishment and termination in detail.   [10]
(b) Discuss the IPV4 addresses with formats and special addresses   [10]

Q7.   Write Short notes on any **four** of the following: [20]
(a) ASK,FSK and PSK
(b) HTTP
(c) LEO, MEO, GEO
(d) Pure Aloha
(e) Wired media

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