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P8867

SEAT No. :

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Oct-22/TE/Insem-629

**T.E. (Artificial Intelligence and Data Science)**  
**COMPUTER NETWORKS**  
**(2019 Pattern) (Semester - I) (317521)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4 & Q.5 or Q.6.
- 2) Neat diagram must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.

**Q1) a) Match the following functions to one or more layers of OSI model. [3]**

- i) Transmission of bit stream across physical medium.
- ii) Defines Frames.
- iii) Error correction and retransmission.
- iv) Reliable Process-to-process message delivery.
- v) Route selection.
- vi) Provides user services such as e-mail and file transfer.

**b) Define FHSS and explain how it achieves bandwidth spreading. [5]**

**c) Which are the types of guided media? [2]**

OR

**Q2) a) What is the difference between port address, logical address & Physical address? [4]**

**b) Generate CRC code for message 1101010101. Generator polynomial is  $g(x) = x^4 + x^2 + 1$ . [6]**

*P.T.O.*

**Q3)** a) Explain various networking Devices - Bridge, switch, Router, gateway & Access point. [5]

b) For the bit sequence 1000010111 draw the waveform for [5]

- i) Manchester Encoding
- ii) Differential Manchester Encoding

OR

**Q4)** a) Explain pure and slotted ALOHA. [5]

b) What are various design issues of data link layer? [5]

**Q5)** a) Explain peer to peer network architecture with diagram. [5]

b) Which are the different types of transmission medium? [5]

OR

**Q6)** a) Explain IEEE 802.11 with protocol stack diagram. [5]

b) Explain working of CSMA/CD with flowchart. [5]