

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VI (OLD) - EXAMINATION – SUMMER 2017****Subject Code: 161704****Date: 03/05/2017****Subject Name: Analog and Digital Communication****Time: 10:30 AM to 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain frequency spectrum of AM wave. **07**  
(b) Write short note on External Noise. **07**
- Q.2** (a) Explain in details with necessary derivation & example **07**  
(1). Signal to noise Ratio (2). Noise figure.  
(b) Explain Pulse Width Modulation (PWM) with example. **07**
- OR**
- (b) Explain Pre-emphasis and De-emphasis with its circuit diagram & enlist its advantages and applications. **07**
- Q.3** (a) Derive formula for instantaneous value of FM voltage. Define modulation index & draw the waveforms of information signal and its FM modulated signal. **07**  
(b) Explain Cyclic Redundancy Check (CRC) with example. **07**
- OR**
- Q.3** (a) Explain OSI model architecture with necessary diagram. **07**  
(b) Explain Network topology with diagram. **07**
- Q.4** (a) Explain UART receiver using timing/data relationship. **07**  
(b) Explain V.34 and V.90 Modems. **07**
- OR**
- Q.4** (a) Explain CODEC transmit block with its diagram. **07**  
(b) Explain in brief Synchronous data link control (SDLC) Protocol. **07**
- Q.5** (a) Explain in brief IEEE 802.4 Token Bus. **07**  
(b) Explain the following: **07**  
(1) Light-Emitting diodes. (2) LASER
- OR**
- Q.5** (a) Explain Cellular Digital Multiple Access (CDMA) in detail. **07**  
(b) Explain different types of fiber cable losses. **07**

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