Nepal college of information technology

(Unit test)

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| Level: Bachelor | Semester-Spring-2014 | Full Marks: 70 |
| Programme: BE CE | | Pass Mark: 35 |
| Course: Data Communication | | Time : 2hrs. |

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| *Candidates are required to give their answers in their own words as far as practicable.* |
| *The figures in the margin indicate full marks.* |
| Attempt all the questions. |

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|  | 1. Explain the block diagram of the data communication system. 2. Differentiate between digital and analog data transmission. 3. A TV channel has a signal with bandwidth of 6.1 MHz and it is transmitted with the average power of 2W. This signal has to travel through a channel which introduces an average noise of 0.1 mW. If this TV signal is digitized and sent, find the maximum data rate of the channel. | 5  5  5 |
|  | Differentiate between:   1. Synchronous and asynchronous communication 2. Bit rate and Baud rate 3. Power and energy signal | 3×5 |
|  | 1. Sketch the following signal: x(t) = A[u(t+a)-u(t-a)] for a>0. Determine whether the signal is a power or energy or neither. 2. Define the term signal and system. What are the basic properties of a system? Explain with the help of an example. | 8  7 |
|  | 1. What does topology refers to? Explain about star, bus, and mesh topology with an application of each. 2. Define signum function and find its fourier transform. | 8  7 |
|  | Write short notes on ***(Any Two)***   1. MAN 2. Shannon’s channel capacity theorem 3. Parallel Vs Serial communication 4. Standards | 2×5 |

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