

Kathmandu University

Department of Computer Science and Engineering

First Internal Examination 2025

Computer Science : II/II || COMP 204 || Time 1 hr || FM: 20 || PM: 08

x.e. 20

1. Explain OSI reference model in detail. Briefly make an analogy with TCP/IP model (4+1)
2. Explain the working mechanism of Hamming code $C(7,4)$ with neat diagram. Suppose a dataword 1011 is sent. Demonstrate how this coding scheme decides no error, correct single bit error and detects more than single bit error. (7)
3. Explain in detail about Stop and Wait ARQ protocol with flow diagram demonstrating all the possible conditions. (3)
4. A. Can a channel of 3000 Hz bandwidth with a signal to noise ratio of 30 dB transmit much more than 30 kbps? Prove your answer. (2)
B. One hundred stations on a pure ALOHA network share a 1-Mbps channel. If frames are 1000 bits long, find the throughput if each station is sending 10 frames per second. (3)

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