Bangladesh University of Engineering and Technology
Department of Computer Science and Engineering

Course: CSE 206
Digital Logic Design Sessional

Experiment No. 6

Topic: Design using Multiplexers

Design and implement the following problems:

1. Design and implement each of the two following functions using one 4×1 MUX (IC – 74153) and necessary gates.
   i) f = ∑(0, 2, 7, 10, 14, 15)
   ii) f = ∏(0, 3, 5, 6, 12, 15)

2. Design a 16×1 MUX using 4×1 MUXs (IC – 74153) only. Use this MUX to implement the function:
   f = ∑(0, 2, 7, 10, 14, 15)

Answer the following question:

3. Design a binary to excess-3 code converter using 8×1 MUXs (IC-74151) and necessary basic gates.

Report:

For each of the problems/questions report should cover:

- Problem definition.
- Truth table and minimized equation with minimization steps (if applicable)
- Circuit diagram with pin number.
- Required instruments for implementation.
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Moreover, include the following sections to your report.

- Answer to the questions.
- Observations (if any)