King Fahd University of Petroleum and Minerals
College of Computer Sciences and Engineering
Department of Computer Engineering

COE 202 – Digital Logic Design (T131)

Homework # 04 (*due date & time: Sunday 24/11/2013 during class period*)

*** Show all your work. No credit will be given if work is not shown! ***

Problem # 1 (25 points): Use a 4×16 **non-inverted-output decoder** and external gate(s) to implement the following function:

$$F(A,B,C,D) = C \cdot (\overline{A} + \overline{D}) \cdot (\overline{B} + \overline{D})$$

Problem # 2 (25 points): Repeat problem # 1 but use a **4×16 inverted-output decoder** and external gate(s).

Problem # 3 (25 points): Repeat problem # 1 but use a **16×1 MUX** and external gate(s).

Problem # 4 (25 points): Repeat problem # 1 but use an **8×1 MUX** and external gate(s). Connect **C, B, and D** to S_2, S_1, and S_0, respectively.