Notice of the Final Oral Examination
for the Degree of Doctor of Philosophy

of

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B.ASc (University of British Columbia, 1989)
B.Ed (University of British Columbia, 1994)

“Broadcast Independence in Graphs”

Department of Mathematics and Statistics

Thursday, July 25, 2019
10:00 A.M.
Clearihue Building
Room B021

Supervisory Committee:
Dr. Kieka Mynhardt, Department of Mathematics and Statistics, University of Victoria (Supervisor)
Dr. Rick Brewster, Department of Mathematics and Statistics, UVic (Member)
Dr. Aaron Gulliver, Department of Electrical and Computer Engineering, UVic (Outside Member)

External Examiner:
Dr. David Erwin, Mathematics and Applied Mathematics, University of Cape Town

Chair of Oral Examination:
Dr. Tim Pelton, Department of Curriculum and Instruction, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies
Abstract

The usual graph quantifiers related to independent and dominating sets can be adapted to broadcasts on graphs. We examine some possible definitions for an independent broadcast. We determine the minimum maximal and the maximum broadcast weight for all our independence parameters on both paths and grids. For graphs in general, we examine the relationships between these broadcast independence parameters and the existing minimum and maximum minimal broadcast domination weight (or cost). We also determine upper and lower bounds for maximum boundary independent broadcasts and a new upper bound for hearing independent broadcasts.