Notes for discrete math UAS final exam:

Study materials:

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/u4dm2023.docx

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/u5dm2023.docx

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/10graphs.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/11shortest.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/12trees.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/13trees.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/14circuits14etc.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/14boolean14algebra14.ppt

https://discrete4math.weebly.com/uploads/2/5/3/9/25393482/15boolean15algebra15.ppt

Instructions:

Write all your answers in this Word Document and email the Word Document with your answers to me.

Try to write only text. Try to avoid pictures, videos and other things, which make files big.

Write your name(s)

Write your student number(s)

s is your student number.

k = s mod 10000 = m10000

T = s mod 100 = m100

m = s mod 35 = m35

a = s mod 25 = m25

L = s mod 10 = m10

m9 = s mod 9

e = s mod 8 = m8

m7 = s mod 7

m6 = s mod 6

m5 = s mod 5

m4 = s mod 4.

m3 = s mod 3

m2 = s mod 2

1. Simplify the Boolean expression.

Simplify the expression for your *e*.

e = 0: A´BC + BC + AB´ + ABC + AC´ + BC´

e = 1: AB´C + B´C + A´B´ + ABC´ + AC´ + BC´

e = 2: B´C + B´C + A´B´C´ + ABC´ + AB´C´ + BC´

e = 3: BC´ + B´C + A´B´C´ + ABC´ + AB´C´ + B´C´

e = 4: A´BC + BC + AB´ + ABC + AC´ + BC´ + A´B´C

e = 5: A´BC + AB´ + ABC + AC´ + BC´ + A´B´C

e = 6: BC + AB´ + ABC + AC´ + BC´ + A´B´C

e = 7: A´BC´ + BC + AB´ + AC´ + BC´ + A´B´C

Question:

How many edges are in KT and KT,T?

2. Find adjacency and incidence matrixes for the graph.

m6 = 0: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student16number16graph16.docx

m6 = 1: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees16graphs2solve16.docx

m6 = 2: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student4number4graph.docx

m6 = 3: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student3number3graph.docx

m6 = 4: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees24graphs2solve.docx

m6 = 5: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees4graphs2solve.docx

3. Apply Dijkstra’s, Prim's and Kruskal’s algorithms to graphs. Traverse trees.

m6 = 0: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student16number16graph16.docx

m6 = 1: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees16graphs2solve16.docx

m6 = 2: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student4number4graph.docx

m6 = 3: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student3number3graph.docx

m6 = 4: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees24graphs2solve.docx

m6 = 5: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees4graphs2solve.docx

4. Give Euler’s, Hamiltonian’s cycles, paths in graphs.

m4 = 0: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student16number16graph16.docx

m4 = 1: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees16graphs2solve16.docx

m4 = 2: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/euler6cycle.ppt

m4 = 3: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/question2euler.ppt

5. Is the graph planar? Why?

m7 = 0: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/graph22jun16.docx

m7 = 1: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/graph7am22jun16.docx

m7 = 2: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/graph8am22jun16.docx

m7 = 3: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/graph1pm22june16.docx

m7 = 4: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/student16number16graph16.docx

m7 = 5: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/trees16graphs2solve16.docx

m7 = 6: http://discrete4math.weebly.com/uploads/2/5/3/9/25393482/planar4graphs.ppt

Question:

Color your graphs using as few colors as possible.

6. Color the map of the country number T using as few colors as possible.

7. Find the number of regions for graph with L+20 edges, e+10 vertices.

8. Explain the laws of the discrete math.

Explain the formulas, equations, concepts, laws, theories of the discrete math.