Last name	
First name	
Group	

Grade

Algorithmics Undergraduate 2^{nd} year (S4) Midterm #4 (C4) 6 March 2018 - 14:45 Answer Sheets

1	
2	
3	
4	

Answers 1	(Cut points,	cut edges –	3 points)
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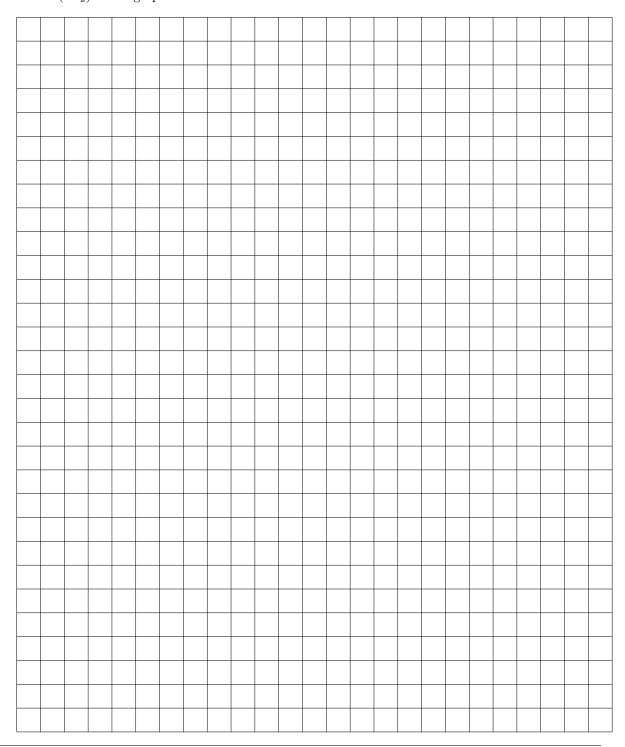
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Answers 2 (SCC and condensation -5 points)

	C_1 :					C_2 :		
	C1					-		
	:					: _		
	:					:		
(b)	Condensati	on of G_2	:				_	
							_/	
(c)	Can the ad-	dition of	a single ec	lge make the	e digraph sti	congly con	nnected?	OUI – I
(c)		dition of	a single ec	lge make the	e digraph str	congly con	nnected?	OUI – I
(c)	Can the add	dition of	a single ec	lge make the	e digraph sti	rongly con	nnected?	OUI – I
(c)		dition of		lge make the				
(c)		dition of						
	Justify:							
Con	$\begin{array}{c} \text{Justify:} \\ \hline \\ \\ \\ \text{densation} \rightarrow \end{array}$	· digraph	1					
Con (a)	$\begin{array}{c} \text{Justify:} \\ \hline \\ \\ \\ \text{densation} \rightarrow \\ \\ \text{Vertices un} \end{array}$	· digraph	e from 0:					
Con (a)	Justify: $$	· digraph reachabl followin	e from 0:	hich ones car		n <i>G</i> ₃ ?		
Con (a)	$\begin{array}{c} \text{Justify:} \\ \hline \\ \\ \\ \text{densation} \rightarrow \\ \\ \text{Vertices un} \end{array}$	· digraph reachabl followin	e from 0:					
Con (a) (b)	Justify: $$	· digraph reachabl followin 7	e from 0: g paths, w	hich ones can $4 \rightsquigarrow 21$	n not exist i	$ \frac{18 \rightsquigarrow 2}{} $		11 ~> 1
Con (a) (b)	Justify: $$	· digraph reachabl followin 7	e from 0: g paths, w	hich ones can $4 \rightsquigarrow 21$	n not exist i	$ \frac{18 \rightsquigarrow 2}{} $		11 ~> 1
Con (a) (b)	Justify: densation \rightarrow Vertices un Among the $3 \rightsquigarrow$ Minimum r	· digraph reachabl followin 7 number c	e from 0: g paths, w	hich ones can $4 \rightsquigarrow 21$ added to G_3	n not exist i	n G_3 ? $18 \rightsquigarrow 2$ make it s		11 ~> 1
Con (a) (b)	Justify: $$	· digraph reachabl followin 7 number c	e from 0: g paths, w	hich ones can $4 \rightsquigarrow 21$ added to G_3	n not exist i	n G_3 ? $18 \rightsquigarrow 2$ make it s		11 ~> 1

2. Specifications:

The functions indexes(G) computes both "connectivity indexes" simple (IC_1) and weighted (IC_2) of the graph G.



Answers 4 (Strongly Connected? - 7 points)

1.	Property(ies)	of the first	component ro	ot met:		

2. Specifications:

The function $is_strong(G)$ tests whether the digraph G is strongly connected.

