Decision 1 Shortest Path Answers

5(a)
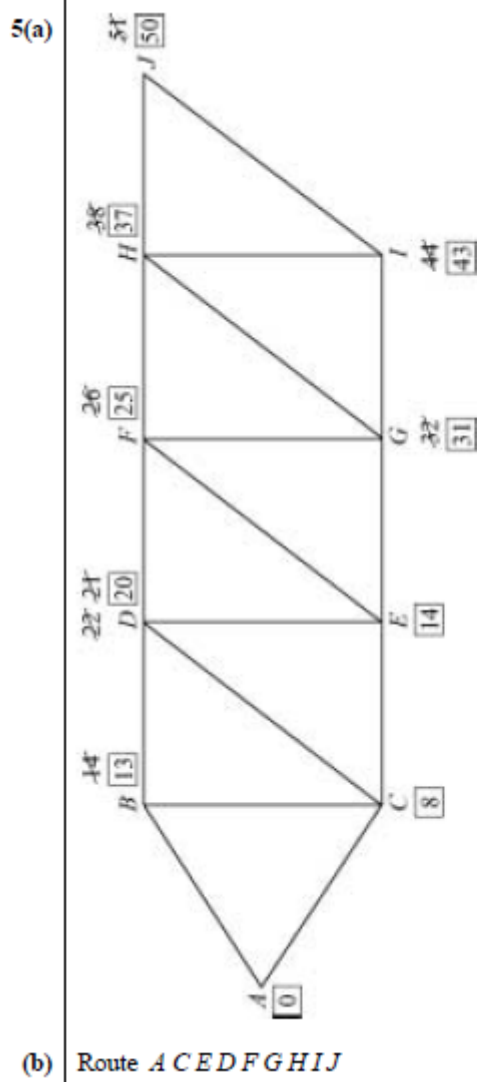
M1		SCA
A1		2 correct values at B
M1		3 values at D
M1		2 values at I
A1		all correct
B1	6	for 50 at J

(Diagram nodes: J 51/50, H 38/37, I 44/43, F 26/25, G 32/31, D 22/21/20, E 14, B 14/13, C 8, A 0)

(b) Route $A\,C\,E\,D\,F\,G\,H\,I\,J$ B1   1

7(a)(i)	$m-1$	B1	1	
(ii)	$n \geq m-1$	B2	2	B1 for $>$ or $(n>m)$ OE
(b)	$m\,(=n)$	B1	1	
(c)		M1		$m=6$ and eulerian
		A1	2	All correct
	Total		6	

3(a)(i)

A —15— B [15] —10— [25] C —15— [40] D

12 (A-E), 12 (B-F), 12 (C-G), 12 (D-H)

[12] E —20— ~~32~~ F —9— ~~37~~ G —20— H [52]
[27]   [36]   ~~56~~

20 (E-I), 20 (F-J), 20 (G-K), 20 (H-L)

[32] I —14— ~~47~~ J —20— K [56] —15— ~~72~~ L [71]
~~32~~   [46]   72
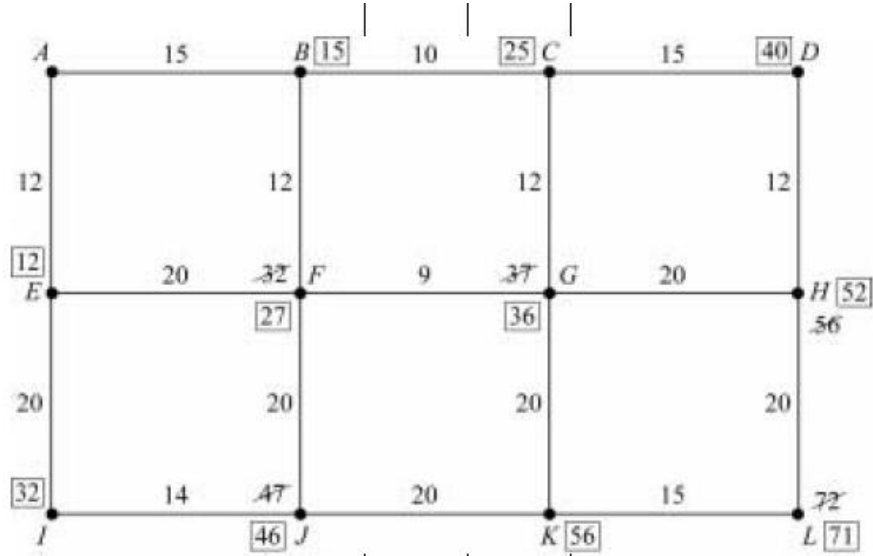
M1		SCA
A1		Correct at F
M1		2 values at G
M1		2 values at J
M1		2 values at H
A1		All correct
71 B1	7	

OR

(a)(i) Working back from L

35 at G
47 at C
44 at F
49 at I   } B1 × 7
56 at B
64 at E
71 at A

(ii)	*A B F G K L*	B1	1	
(b)	*ADL* gives 62	M1		OE
	AIL gives 69	A1		OE Either, considering routes *ADL* or *AIL*
	∴ *A* to *D*	A1	3	CSO
	Total		11	