

Question			Marks
1	1	Mark is for AO2 (apply) Jib;	1
1	2	Mark is for AO2 (apply) Jib;	1
1	3	All marks for AO1 (understanding) (Until the queue is empty) repeatedly remove / delete (the front item) from the queue and push it on to the stack; (Until the stack is empty) repeatedly pop items from the stack and add them to the (rear of the) queue;	2

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2	1	All marks AO1 (understanding) Connected; Undirected; A. explanations of connected/undirected	2																																																																																																																																					
2	2	All marks AO2 (apply) <table><tr><th colspan="2"></th><th colspan="3">Temp</th><th></th><th></th></tr><tr><th>Done</th><th>Pos</th><th>[0]</th><th>[1]</th><th>[2]</th><th>Current</th><th>OUTPUT</th></tr><tr><td>False</td><td>-1</td><td></td><td></td><td></td><td>0</td><td></td></tr><tr><td></td><td>0</td><td>0</td><td></td><td></td><td>1</td><td></td></tr><tr><td></td><td>1</td><td></td><td>1</td><td></td><td>2</td><td></td></tr><tr><td></td><td>2</td><td></td><td></td><td>2</td><td>-1</td><td>Y</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>-1</td><td></td></tr><tr><td></td><td>1</td><td></td><td></td><td></td><td></td><td>K</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>3</td><td></td></tr><tr><td></td><td>0</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>1</td><td></td><td>3</td><td></td><td>-1</td><td>H</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>-1</td><td></td></tr><tr><td></td><td>0</td><td></td><td></td><td></td><td></td><td>U</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>4</td><td></td></tr><tr><td></td><td>-1</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>0</td><td>4</td><td></td><td></td><td>-1</td><td>M</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>-1</td><td></td></tr><tr><td></td><td>-1</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>True</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Mark as follows: 1. Done set to False, Pos set to -1 and Current set to 0 2. Pos set to 0, Temp[0] set to 0 and Current set to 1 3. Pos set to 1, Temp[1] set to 1 and Current set to 2 4. First output is Y 5. Temp[2] set to 2 with no other values after this, Temp[1] set to 3 with no other values after this and Temp[0] set to 4 with no other values after this; 6. Done column correct 7. Correct order for K, H, U and M in output column with no incorrect outputs I. unnecessary repeated values in a column Max 6 if any errors			Temp					Done	Pos	[0]	[1]	[2]	Current	OUTPUT	False	-1				0			0	0			1			1		1		2			2			2	-1	Y						-1			1					K						3			0							1		3		-1	H						-1			0					U						4			-1							0	4			-1	M						-1			-1						True							7
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2	3	All marks AO2 (analyse) There is no child node to the right of any node // each child node is to the left of its parent node;; Note for examiners: if answer is not correct then max one mark for any of the following points: • each node has, at most, one child node R. each node has one child node • there are no nodes with two child nodes • tree has a depth of five	2
2	4	Mark is for AO2 (analyse) Stack // LIFO (data structure);	1
2	5	Mark is for AO2 (analyse) Change the line <code>Current ← Dir1[Current]</code> to <code>Current ← Dir2[Current]</code> Change the line <code>Current ← Dir2[Temp[Pos]]</code> to <code>Current ← Dir1[Temp[Pos]]</code>; // Change Dir1 to Dir2 and change Dir2 to Dir1;	1