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Assignment 4

1(a) A, 1, B, 5, C, 6, D, 9, F, 11, G, 10, D, 7, E, 8, G, 12, H, 4, A, 2, K, 3, J, 15, I, 13, H, 14, I

Vertices are not even, not circuit, cannot go back

(b) Not possible.
It is not hamilton circuit
It have repeated at G and D

2(a)

S	N	B	A	C	D	E	F
{0}	{BCDEF}	∞	∞	∞	∞	∞	∞
{B}	{ACDEF}	0	3	1	6	∞	∞
{BA}	{CDEF}	0	3	1	6	∞	8
{BAC}	{DEF}	0	3	1	5	5	∞
{BACD}	{EF}	0	3	1	5	8	8
{BACDE}	{F}	0	3	1	5	5	7

(b) Shortest path
B → C → E → F
1+4+2 = 7 hours

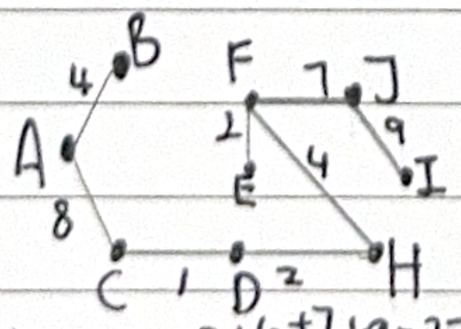
3(a) q, d, i, n, P

(b) k, e, l, b, a, f, c, m, g, h, d, p, h, i, o, j

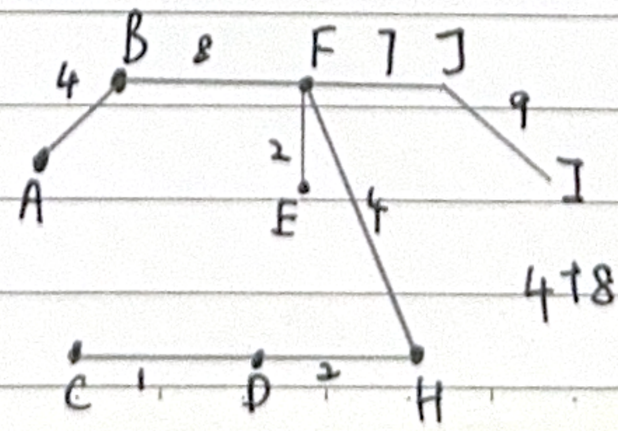
4(a) because it highlighted A, B

(b) (C, D) → (D, H) → (F, H)
(B, F) → (A, B) → (F, J)
(J, I) → (E, F)
Length = 1+2+4+8+4+7+9+2 = 37 m
Cost = 37 x 100 = 3700

(c) Yes,



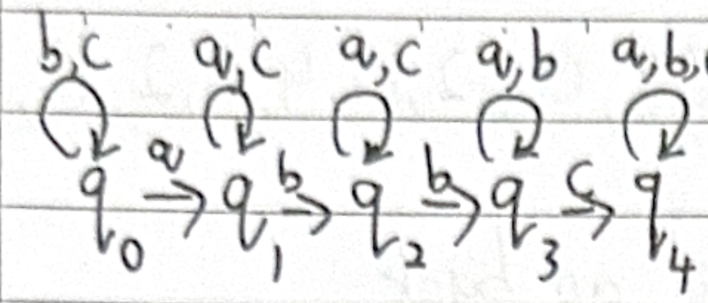
4+8+1+2+2+4+7+9 = 37



4+8+7+9+2+4+1+2 = 37

No.:

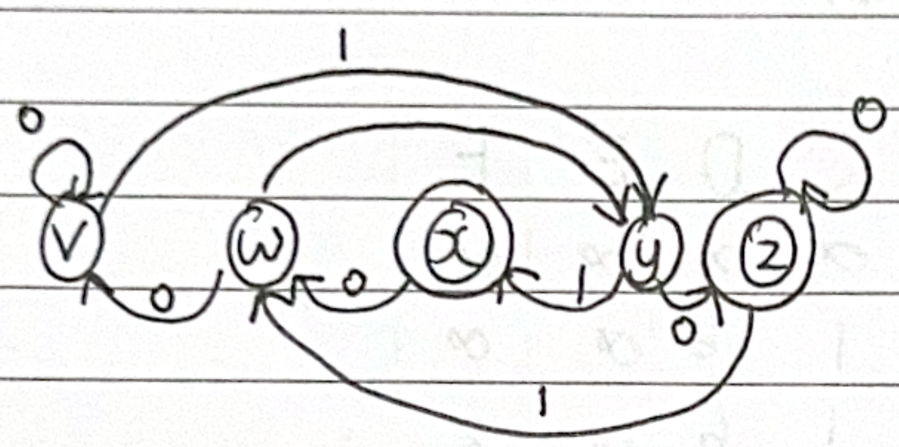
5.



6(a) $S = \{v, w, x, y, z\}$

Initial state = w

(b)



$w \xrightarrow{0} v \xrightarrow{0} v \xrightarrow{1} y \xrightarrow{1} x$

Final state: accepting state

7.

	f_s			f_o		
	0	1	2	0	1	2
L0	L0	L1	L2	0	1	1
L1	L0	L1	L2	1	0	1
L2	L0	L1	L2	1	1	0