7a)

Date	Time	load(kW)
01.09.2019	0000	5551.82
01.09.2018	1:00	4983.13

Since, the load has to predicted based on the same hour load in the previous day. the dataset has to be modified

Day-1(x)	Day-2(y_p)
5551.82208	4931.26380
4983.13184	4726.53968

(1) Read dataset, $\eta = 0.1$, epochs = 2, $m = 1$, $c = -1$, $\gamma = 0.9$,

$v_m = 0$ & $v_c = 0$

(2) Set iteration = 1

(3) Set sample = i = 1

(4) $y = (1)(5551.82208) - 1 = 5550.82208$

(5) $\frac{\partial E}{\partial m} = -(4931.26380 - (1(5551.82208) + 1))5551.82208$

$= 34396727.338750$

$\frac{\partial E}{\partial c} = -(4931.26380 - (1(5551.82208) + 1))$

$= 619.055828$

(6). $v_m = 0.9(0) - (0.1)(34396727.338750)$

$= -3439672.733875$

$v_c = 0.9(0) - (0.1)(619.055828)$

$= -61.9055828$

(7) $m = 1 + (-3439672.733875)$

$= -3439670.733875$

$$c = -1 * (-61.955783)$$

$$= -62.955783$$

(8) Sample point =>

(9) $Y = (-343966.734)(4983.17184) + (-62.955783)$

$$= -1714045405.22$$

(10) $$\frac{\partial E}{\partial m} = -((4775.53968 - (-343966.734)(4983.17184) - (-62.955783))(4983.17184)$$

$$= -(4775.53968 + 1714045405.22)(4983.17184)$$

$$= -8541466595607.112$$

$$= -1714050181.261$$

(11) $v_m = 0.9(-343967.734) - (0.1)(-8541466595607.112)$

$$= -8541409689131.67$$

$v_c = 0.9(-61.955783) - (0.1)(-1714050181.261)$

$$= -1714050273.88634$$

(12) $m = -343966.734 - 8541409689131.67$

$$= -8541413130098.4$$

$c = -62.955783$

(13) Iteration no = 2, Sample = 1

(14) $Y = (-8541413130098.4)(5551.82208) + (-62.955783)$

$$= -47420406014 * 10^{5}$$

(15) $$\frac{\partial E}{\partial m} = -(4931.26380 + 47420406014 * 10^{5})(5551.82208)$$

$$= -2.63269652156 * 10^{19}$$

$$\frac{\partial E}{\partial c} = -4.742040601605 * 10^{5}$$

(16) $V_m = 0.9(-864140969131867) - (0.1)(-2.632696872186 \times 10^{18})$

$= 2.63269658 \times 10^{18}$

$V_c = (0.9)(-17140573.88634) - (0.1)(-4.742040601 \times 10^{15})$

$= 4.74203906 \times 10^{14}$

(17) $m = -864413130498.4 + 2.63269658 \times 10^{18}$

$= 2.632694495 \times 10^{18}$

$c = -62.955834 + 4.74203906 \times 10^{14}$

$= 4.74203906 \times 10^{14}$

(18) Sample = i+1 = 2

(19) $Y = (2.632694495 \times 10^{18})(4983.17184) + 4.74203906 \times 10^{14}$

$= 1.3119121 \times 10^{22}$

(20) $\frac{\partial E}{\partial m} = -((4775.63968 - (2.632694495 \times 10^{18})(4983.17184)$

$- 4.74203906 \times 10^{14}))(4983.171)$

$= -6.5375068775 \times 10^{25}$

$\frac{\partial E}{\partial c} = -(4775.63968 - 1.31191218 \times 10^{22})$

$= -1.31191218 \times 10^{22}$

(21) $V_m = (0.9)(2.63269658 \times 10^{18}) - (0.1)(-6.53750875 \times 10^{25})$

$= 6.53751112 \times 10^{24}$

$V_c = (0.9)(4.74203906 \times 10^{14}) - (0.1)(-1.31191218 \times 10^{22})$

$= 1.31191261 \times 10^{21}$

(22) $m = 2.632694495 \times 10^{18} + 6.53751112 \times 10^{24}$

$= 6.53751375 \times 10^{24}$

$c = 4.74203906 \times 10^{14} + 1.31191261 \times 10^{21}$

$c = 1.31191808 \times 10^{21}$