Answer:

$$J(\theta) = -\frac{1}{n}\sum_{i=1}^{n}\left(y^{(i)}\log(h_\theta(x^{(i)})) + (1-y^{(i)})\log(1-h_\theta(x^{(i)}))\right),$$

So then

$$\begin{aligned}
\nabla J(\theta) &= -\frac{1}{n}\sum_{i=1}^{n}\left(y^{(i)}\frac{1}{h_\theta(x^{(i)})}h(1-h)x^{(i)} - (1-y^{(i)})\frac{1}{1-h_\theta(x^{(i)})}h(1-h)x^{(i)}\right)\\
&= -\frac{1}{n}\sum_{i=1}^{n}\left(x^{(i)}\left[(1-h)y^{(i)} - (1-y^{(i)})h\right]\right)\\
&= -\frac{1}{n}\sum_{i=1}^{n}\left(x^{(i)}\left[(1-h)y^{(i)} - (1-y^{(i)})h\right]\right)\\
&= -\frac{1}{n}\sum_{i=1}^{n}\left(x^{(i)}\left[y^{(i)} - h\right]\right)
\end{aligned}$$

And then

$$\nabla\nabla J(\theta) = -\frac{1}{n}\sum_{i=1}^{n}\left(-xx^T h(1-h)\right) = H$$

So

$$z^T H z = \frac{1}{n}\sum_{i=1}^{n}\left(zx^{(i)}(x^{(i)})^T z^T h_\theta(x^{(i)})(1-h_\theta(x^{(i)}))\right) \geq 0$$

as $h, (1-h) \in (0,1)$