3.a

Yes, parameter sharing outperforms having separate models.

3.b

No, parameter sharing doesn’t outperform having separate models.

3.c

Changing the task weights would affect the prioritization of tasks. In the case where Lambda F =0.99 and Lambda R =0.01, the shared model would be tailored and prioritized for matrix factorization task. Hence we could observe a faster improvement on the factorization loss and Mean Reciprocal Rank from the matrix factorization task compared to weight setting of Lambda F =0.5 and Lambda R =0.5.