Answer **all** questions.

1.   (a)   Identify **two** reasons why *NextStar* would use infrastructure as a service (IaaS).   [2]

     (b)   Define the term *stochastic gradient descent*.   [2]

     (a)   Discuss whether the benefits of *NextStar* using implicit behavioural data outweigh
           the concerns.   [4]

     (b)   Describe how the K-nearest neighbour (k-NN) algorithm uses item–feature
           similarity to make recommendations.   [4]

3.   Explain **two** limitations of collaborative filtering recommender systems.   [6]

     Discuss whether the challenges associated with the development of an effective
     recommender system can be overcome through the choice of algorithm, training
     data and methods of evaluation.   [12]