Q1-Which of the following is an application of clustering?
**Answer-d) All of the above**

**Q2-**On which data type, we cannot perform cluster analysis?
**Answer- d. None**

**Q3-** Netflix's movie recommendation system uses?
**Answer- c. Reinforcement learning and Unsupervised learning**

**Q4-**The final output of Hierarchical clustering is▯
**Answer-  b. The tree representing how close the data points are to each other**

**Q5-**Which of the step is not required for K-means clustering?
**Answer-   d. None**

**Q6-**Which is the following, is wrong?
**Answer- c . k- Nearest neighbour is same as k-means**

**Q7-**Which of the following metrics, do we have for finding dissimilarity between two clusters in hierarchical clustering?
Answer- d. 1, 2 and 3

Q8- Which of the following are true?
Answer-a. 1 only

Q9- In the figure above, if you draw a horizontal line on y-axis for y=2. What will be the number of clusters formed?
**Answer-a.2**

Q10-For which of the following tasks might clustering be a suitable approach?
**Answer-   b. Given a database of information about your users, automatically group them into different market segments.**

**Q11-** Given, six points with the following attributes:
Which of the following clustering representations  and dendrogram depicts the use of MIN or Single link proximity function in hierarchical clustering:
**Answer-a.**

**Q12-Given, six points with the following attributes:**
Which of the following clustering representations and dendrogram depicts the use of MAX or Complete link proximity function in hierarchical clustering.
**Answer-b**

**Q13-**What is the importance of clustering?
**Answer-Clustering is used to find structure in unlabeled data. It's the most common form of unsupervised learning. Given a dataset you don't know anything about; a clustering algorithm can discover groups of objects where the average distances between the members of each cluster are closer than to members in other clusters.**

**Q14-**How can I improve my clustering performance?
   **Answer-**
   - **Graph-based clustering performance can easily be improved by applying ICA blind source separation during the graph Laplacian embedding step.**
   - **Applying unsupervised feature learning to input data using either RICA or SFT, improves clustering performance.**

- Surprisingly for some cases, high clustering performance can be achieved by simply performing K-means clustering on the ICA components after PCA dimension reduction on the input data. However, the number of PCA and ICA signals/components needs to be limited to the number of unique classes.