



**Explain your answers with neat sketches when applicable.**

### **Assignment 8 – Choosing A suitable Projection**

1. Express your views about the following statements.
  - A. There are different criteria that control the selection of a specific map projection of an engineering project.
  - B. Mathematical projections are mostly used compared to geometrical types.
  - C. Conformality is a convenient global property for surveying maps.
  - D. Population maps are mostly produced using equivalent projections.
2. Comment on the following statements
  - A. A cartographer should aim to select the projection with the least distortion.
  - B. Distortion can be kept to a minimum by aligning the location of the map with the location of the standard line/s.
  - C. Some projections are popular and in widespread use, though this does not necessarily mean they are the best choice for your map.
  - D. The location of your project affects the selection of map projection.
  - E. Conical projections are expected to be optimal selection for Egypt maps.
  - F. Nautical charts are commonly produced using central cylindrical projections.
  - G. Oblique projections are used in high-latitude regions.
  - H. The true “geographic” north coincides with its projection on the map.
3. Let you have nominated as a consulting surveying engineer for the High-Speed Rail (HSR) in Egypt, which links cities of Ain Sukhna and Marsa Matrouh. It is required to establish a set of GNSS control points. Explain how could choose a map projection to compute the coordinates (E, N) of the network stations? Please be reminded to justify your decisions is in a step-by-step basis. A spot points that must be considered include type of projection/s, global property, FE, FN, origin, SF, etc.,