INSTRUCTIONS: Answer FOUR questions in ALL

SECTION A: Answer ALL Questions

1) Differentiate between synoptic and numerical forecasting.

2) (a) Plot the station model
   Windspeed is at 32 knots with pressure 987.5mb, after falling 2.8mb in the past 3 hours. Wind direction is ENE and \( \frac{1}{4} \) of the sky is covered with
   i) Small Cumulus
   ii) Stratus
   iii) Alto-Stratus
   iv) Cirrus
   Air temperature is 28°C and there has been continuous moderate rain

   \[ \text{Diagram of the station model} \]

SECTION B: Answer any TWO Questions

1) (a) What is a cyclone
   (b) Differentiate between tropical and extra-tropical cyclone

2) (a) Outline the source regions of extra-tropical cyclone
   (b) Describe the size and shape of extra-tropical cyclones

3) (a) Define an air mass
   (b) Describe how a cold air mass becomes a warm air mass.
   (c) Discuss the types of source regions of an air mass