INSTRUCTIONS:

a) Answer all questions in section A.
b) In section B answer question 6 and any other two questions.
c) All answers must be written in the answer foolscaps provided.
SECTION A

1. a) Mention two theories which have been advanced to explain the origin of the earth. (2 marks)
   b) State three reasons why the interior of the earth is very hot. (3 marks)

2. a) Name type of rocks that result from metamorphosis of:
   i) Granite. (1 mark)
   ii) Clay. (1 mark)
   b) Give three reasons why sedimentary rocks are widespread in the coastal plain of Kenya. (3 marks)

3. The diagram below represents a river capture.

   ![Diagram of river capture]

   a) Name the parts marked A, B and C. (3 marks)
   b) State any two characteristics of the torrential stage of a long river profile. (2 marks)

4. The diagram below shows an island surrounded by a coral formation.

   ![Diagram of island and coral formation]

   a) Name the feature marked X. (1 mark)
   b) State four conditions for the growth of feature X. (4 marks)

5. a) State three conditions for the formation of an artesian basin. (3 marks)
   b) Name two ways in which underground water reaches the surface. (2 marks)

SECTION B

6. Study the map of Kitale 1:50,000 (sheet 75/3) provide and answer the following questions.
   a) i) Convert the scale of the map into a statement scale. (2 marks)
      ii) Name two ways in which relief has been shown on the map. (2 marks)
      iii) Calculate the area of Kapolet forest. (2 marks)
b) i) Give the direction of the Air photo principal point at grid square 4015 from the Air photo principal point at grid square 3516. (2 marks)

ii) Measure the distance of the dry weather road from the junction at grid reference 303227 to the point at grid reference 347270. Give your answer in kilometers. (2 marks)

c) Draw a rectangle measuring 14 cm by 10 cm to represent the area enclosed by the Easting 23 and 30 and Northing 13 and 18. (1 mark)

On the rectangle, mark and name the following features:
- Kitale town (1 mark)
- Koitobos River (1 mark)
- All weather road, loose surface (1 mark)
- Kibomet Estate (1 mark)
- Swamp (1 mark)

d) i) Describe the drainage of the area covered by the map. (5 marks)

ii) Citing evidence from the map, give two economic activities carried out in the area covered by the map other than cattle keeping. (4 marks)

7. a) i) Differentiate between weather and climate. (2 marks)

ii) Describe how the following conditions influence climate of a place.
   - Altitude (2 marks)
   - Ocean currents (2 marks)

b) The table below represents rainfall and its temperature of station Y. Use it to answer the questions (i) and (ii).

<table>
<thead>
<tr>
<th>Station Y</th>
</tr>
</thead>
<tbody>
<tr>
<td>Months</td>
</tr>
<tr>
<td>Temp (°C)</td>
</tr>
<tr>
<td>Rainfall (mm)</td>
</tr>
</tbody>
</table>

i) Calculate the mean annual range of temperature of the station. (1 mark)

ii) Calculate the annual rainfall for the station Y. (2 marks)

iii) Calculate the average rainfall for the station Y. (2 marks)

c) Describe the climatic characteristics of station Y. (6 marks)

d) i) Using well labeled diagram, describe how relief rainfall is formed. (6 marks)

ii) State the significance of weather forecasting to human activities. (2 marks)

8. a) i) Define a desert. (2 marks)

ii) Identify four features resulting from water action in desert areas. (2 marks)

b) Explain three factors that influence wind deposition in desert areas. (6 marks)

c) With the aid of well labeled diagrams describe the formation of:

i) Barchans (6 marks)

ii) Zeugens (5 marks)
d) State four negative effects of deserts on human activities. (4 marks)

9. a) i) Apart from the rift valley name two other resultant features of faulting. (2 marks)
ii) State three characteristics of Gregory rift valley. (3 marks)

b) Explain four ways in which faulting influences drainage. (2 marks)

c) With the aid of a well labeled diagram describe how rift valley was formed due to compressional forces. (7 marks)

d) Your class intends to carry out a field study on a section of rift valley;
   i) State two preparations they will make before the study. (2 marks)
   ii) State three follow up activities that your class will engage in after the study. (3 marks)

10. a) i) What are ice sheets? (2 marks)
ii) State three factors that influence the movement of ice. (3 marks)

b) i) Describe two processes of glacial erosion. (2 marks)
   ii) Explain three factors influencing glacial erosion. (3 marks)

b) i) Describe two processes of glacial erosion. (4 marks)
ii) Explain three factors influencing glacial erosion. (6 marks)

c) The feature below represents a glacial erosion feature in glaciated lowland.
   Use it to answer the questions (i) and (ii).

   ![Diagaram of glacial erosion feature]

   i) Name the parts labeled X and Y. (2 marks)
   ii) Describe how the above feature is formed. (4 marks)

d) Explain two benefits of glaciated landscapes to human environment. (4 marks)