## ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
## General Certificate of Education Advanced Level

# GEOGRAPHY                                    6037/3
PAPER 3 Practical Test

**TIME** 3 hours

**INSTRUCTIONS TO CANDIDATES**

Write your name, centre number and candidate number in the spaces provided on the answer paper/answer booklet.

Answer question 1, one question in Section B and one question in Section C.

Write your answers on the separate answer paper provided.

If you use more than one sheet of paper, fasten the sheets together.

**INFORMATION FOR CANDIDATES**

The number of marks is given in brackets [ ] at the end of each question or part question.

Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

_____

**This specimen paper consists of 7 printed pages and 1 blank page.**

## SECTION A: STATISTICS

Answer **all** questions in this section.

**1**     **(a)**     **(i)**     Outline **four** characteristics of a normal distribution curve.     **[4]**

**Table 1.1** shows number of vehicles passing a traffic count point on selected days in Harare

**Table 1.1**

| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----|---|---|---|---|---|---|---|---|---|----|
| Number of vehicles | 50 | 75 | 80 | 92 | 60 | 70 | 63 | 42 | 75 | 82 |

**(ii)**     Using the data on **Table 1.1** calculate the mean, median, mode and range.  [4]

**(b)**     **(i)**     Calculate the spread of the data around the mean using standard deviation. [7]

**(ii)**     Using the formula $V = \dfrac{\sigma}{\bar{X}} \times 100$ calculate the variance.     [3]

**(iii)**     Comment on the deviation of the data from the mean.     [3]

**(c)**     In a certain area 60% is underlain by granite rock, 25% by limestone and 15% by basalt.

Find the probability that

**(i)**     a sample taken at random from the area is from basalt area.     [2]

**(ii)**     a sample taken at random from the area is from either the granite or limestone part.     [2]

## SECTION B:  MAPPING

Answer one question in this section.

**2** **TOPOGRAPHICAL MAP**

With reference to the map provided (1: 50 000, Stapleford Forest, Zimbabwe),

**(a)** draw an annotated sketch section showing the main relief features along horizontal  gridline 48. [6]

**(b)** describe and explain how the landforms along the sketch section might have been formed. [10]

**(c)** explain the drainage features shown on the map extract. [9]

**[Turn over**

## 3 GEOGRAPHICAL INFORMATION SYSTEM

**(a)** You are required to make a point map for Mr Zulu's orchard using coordinates for fruit trees. The co-ordinates were obtained from GPS, recorded and saved on a spreadsheet.

You are provided with the following materials:

**Table 3.1**

| I.D | FRUIT TREE | EAST ($x$) | SOUTH ($y$) |
|-----|-----------|-----------|------------|
| 1. | Orange | 31.32347 | $-17.3168$ |
| 2. | Orange | 31.32351 | $-17.3168$ |
| 3. | Orange | 31.32355 | $-17.3167$ |
| 4. | Orange | 31.32361 | $-17.3167$ |
| 5. | Orange | 31.32365 | $-17.3167$ |
| 6. | Orange | 31.32367 | $-17.3167$ |
| 7. | Orange | 31.32371 | $-17.3167$ |
| 8. | Orange | 31.32358 | $-17.3167$ |
| 9. | Orange | 31.32354 | $-17.3167$ |
| 10. | Orange | 31.32349 | $-17.3167$ |
| 11. | Orange | 31.32346 | $-17.3168$ |
| 12. | Orange | 31.32344 | $-17.3167$ |
| 13. | Orange | 31.32341 | $-17.3167$ |
| 14. | Orange | 31.32343 | $-17.3167$ |
| 15. | Paw paw | 31.32325 | $-17.3161$ |
| 16. | Paw paw | 31.32319 | $-17.3161$ |
| 17. | Mango | 31.32361 | $-17.3166$ |
| 18. | Mango | 31.32374 | $-17.3162$ |
| 19. | Mango | 31.32378 | $-17.3162$ |

- Computer

- GPS software

- Colour printer

- 1 white bond paper

Proceed as follows:

**(i)** create an excel file and save it as Mr Zulu's Orchard. [5]

**(ii)** Open QGIS software. [1]

**(iii)** Open the file saved as Mr Zulu's orchard in QGIS. [1]

**(iv)** Create a new shape file for orange trees and change the colour to yellow [2]

| | | | |
|---|---|---|---|
| | **(v)** | Create a new shape file for paw-paw trees and change the colour to red. | [2] |
| | **(vi)** | Create a new shape file for mango trees and change the colour to green. | [2] |
| **(b)** | **(i)** | Open new print composer | [1] |
| | **(ii)** | Add new map | [1] |
| | **(iii)** | Add title | [1] |
| | **(iv)** | Add new scale bar | [1] |
| | **(v)** | Add new legend | [1] |
| | **(vi)** | Add direction arrow | [1] |
| | **(vii)** | Export the map as image | [1] |
| | **(viii)** | Print the map | [1] |
| **(c)** | | Describe and explain the distribution of fruit trees in Mr Zulu's orchard. | [4] |

**4** **(a)** You are provided with a mirror stereoscope and photographs of Gweru 1:25 000 of 21/07/85. Interpret the image based on the following characteristics (use cardinal points to give directions) (see Printers' copy)

| | | | |
|---|---|---|---|
| | **(i)** | Shape | [2] |
| | **(ii)** | Pattern | [2] |
| | **(iii)** | Texture | [2] |
| | **(iv)** | Size | [2] |
| | **(v)** | Association | [2] |
| | **(vi)** | Shadow | [2] |

**[Turn over**

**(b)** Identify the importance of each of the following components of the remote sensing system in image acquisition

    **(i)** Radiation [2]

    **(ii)** Energy Source [2]

    **(iii)** Target Sensor [2]

    **(iv)** Image [2]

**(c)** Using examples explain passive and active sensors in remote sensing

Passive

Active

[5]

## SECTION C: RESEARCH TECHNIQUES

Answer **one** question from this section.

**5** **PHYSICAL COMPONENTS**

You are undertaking an investigation into the vegetation characteristics along a hill slope.

**(a)** Describe how you would prepare to carry out the investigation. [5]

**(b)** How would you carryout the investigation to establish the characteristics of the vegetation in your study area? [8]

**(c)** Describe a technique which you would use to present your findings. [7]

**(d)** Describe and suggest reasons for the variations in vegetation characteristics downslope. [5]

# 6 HUMAN COMPONENTS

**(a)** **Table 6.1** shows results from an investigation on population of Zambia in 1989.

**Table 6.1**

| AGE | TOTAL NO. | MALE % | FEMALE% |
|-----|-----------|--------|---------|
| 0-4 | 7 195 | 7.2 | 6.8 |
| 5-9 | 7 624 | 7.7 | 7.8 |
| 10-14 | 6 638 | 7.3 | 5.6 |
| 15-19 | 5 392 | 6.0 | 4.4 |
| 20-24 | 4 737 | 5.0 | 4.2 |
| 25-29 | 3 876 | 3.8 | 3.7 |
| 30-39 | 6 149 | 6.1 | 5.8 |
| 40-49 | 4 007 | 4.7 | 3.6 |
| 50-59 | 2 677 | 2.8 | 2.4 |
| 60$^{++}$ | 3 286 | 3.4 | 3.0 |
| TOTALS | 51 586 | 53.5 | 46.5 |

    **(i)** Use the data in **Table 6.1** to draw an age sex pyramid for Zambia. [8]

    **(ii)** Account for the shape of your pyramid. [5]

**(b)** Outline the advantages and disadvantage of the data presentation above. [7]

**(c)** Identify and describe another technique that can be used to show the same data in **Table 6.1** above. [5]

# 7 MITIGATION AND ADAPTATION

**(a)** Outline practical skills that you will employ to trace the development of a gully in your community. [6]

**(b)** Give the steps you would use to reclaim the gully in 7(a) above.
[12]

**(c)** Assess the successes of measures taken to reduce siltation in rivers in Zimbabwe. [7]

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