 **Province of the**

**EASTERN CAPE**

**EDUCATION**

**DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)**

**HOME SCHOOLING SELF-STUDY WORKSHEET**

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| **SUBJECT** | **GEOGRAPHY** | **GRADE** | **11** | **DATE** | **18 May 2020** |
| **TOPIC** | **GEOMORPHOLOGY** | **TERM 2****REVISION** | **√√** | **TERM 2 CONTENT** | **√√** |
| **TIME ALLOCATION** | **1HOUR** | **TIPS TO KEEP HEALTHY****1. WASH YOUR HANDS thoroughly with soap and water for at least 20 seconds. Alternatively, use hand sanitizer with an alcohol content of at least 60%.****2. PRACTICE SOCIAL DISTANCING – keep a distance of 1m away from other people.****3. PRACTISE GOOD RESPIRATORY HYGIENE: cough or sneeze into your elbow or tissue and dispose of the tissue immediately after use.****4. TRY NOT TO TOUCH YOUR FACE. The virus can be transferred from your hands to your nose, mouth and eyes. It can then enter your body and make you sick.** **5. STAY AT HOME.**  |
| **INSTRUCTIONS** |  |

1. **Notes on Topography Associated with Inclined/Tilted Strata**
2. **Worksheet on Incline strata**
3. **Please revise all concepts before going through your worksheet.**
4. **Revise at least 1 hour per day.**
5. **Please revise question papers from 2014 to 2019 on the ECEXAMS website**

**NB: Answer sheets will follow on Friday**

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| **2. Topography associated with Inclined/Tilted rock strata** |

 **Dip Slope**

* The Dip slope shows the direction in which the rock layers dip.
* the dip slope is less steep than the scarp slope.
* The soils are thinner on the dip slope because of the resistant nature of the rock layer

**Scarp slope**

* The scarp slope is steeper than the dip slope
* Forms a cliff face
* Eroded rock from the scarp face lands on the Ta;us slope below the cliff
* Concave in shape

**Horizontal line**

* This line is parallel to the horizon
* This line is used to measure the angle at which the slope dips



**Angle of Dip**

* Angle formed between the dip slope and the horizontal line
* This angle is used to classify the homoclinal ridge as being a Hogsback or cuesta

1. **Characteristics and processes associted with the development of Homoclinal ridges**
* A homoclinal ridge is the collective name given to landforms formed when rock layers are tilted
* Sedimentary rocks that were once horizontal become inclined as a result of folding or the intrusion of magma below the sedimentary rock.
* Hoocinal ridges for a a result of the tilted rock strata
* Erosion removes the layers of the material above the inclined rock layer
* The gentler slope is the dip slope and the steeper slope is the scarp slope
* The landform is is referreto as a **Homoclinal ridge.**
* The more resistant rock layers forms the ridge and the softer rock layers forms the valleys between the ridges

**Cuestas and Hogsbacks**

|  |  |  |
| --- | --- | --- |
| Feature | Cuestas | Hogsbacks |
| Diagram | The South African Landscape - ppt video online download | The South African Landscape - ppt video online download |
| Characteristics | * Angle of dip slope is less than 45
* Assymmetrical in shape
* Has a gentle dip slope and a steeper scarp slope
 | * Angle of dip is greater than 45
* Symmetrical in shape
* Dip and scarp slopes are nearly equally steep
* Forms a narrow crested ridge.
 |
| Similarities | * Forms an inclined Strata
* Alternating layers of hard and soft rocks
 |  |

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| 1. **Cuesta Dome**
* Formed in layered sedimentary rocks
* Forces deep beneath the surface of the earth thrust up a portion of the earth.
* Intruding batholiths or laccoliths causes the overlying rock strata to become tilted.
* The tilted sedimentary rock forms an anticline on the surface of the earth
* Erosion and weathering will further lead to the formation of a circular cuesta dome landscape.The dip slope faces outwards and the steeper scarp slope towards the centre of the dome

Harry Williams, Geomorphology1 Diastrophism - Folded, Faulted and ...**B. Cuesta Basin*** Are circular depressions on the Earth’s surface
* The sedimentary rock strata are intruded by magma.
* When the magma cools down it shrinks and sags causing the sedimentary rock strata to sag as well.
* The sagging cause the rock strata to become tilted.
* Erosion and weathering results in circular cuesta
* The dip slope will face inwards towards the centre of the basin and the scarp slopes face outwards.
* The bushveld Igneous complex is a local example of a cuesta.
 |

1. **Utilization of these landcapes by people**

|  |  |
| --- | --- |
| Landform | Utlization |
| Cuesta Basins | * Allow for the seepage of water into the centre of the basin resulting in a good source of ground water.
* Sandstone acts as a aquifer sand shale acts as a aquiclude.
* Farmers can use the water for irrigation.
* New Settlements can be established.
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| Cuesta Domes | * Domes have prous sandstone and impermeable shale,this allows for the buid up of Petroleum which can be mined
* Salt domes have a similar effet,trapping petroleum between the sandstone and the shale.
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**Questions on Topography associated with massive inclined/tilted Strata**

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| **1.1** Refer to FIGURE 1.1 which indicates a cuesta and a hogsback. Match each of the descriptions below with sketches **A** or **B**.  **FIGURE 1.1 : INCLINED STRATA**   |
| **1.1** |  |  |  |  |
|  | 1.1.1 | Can form in a dome or basin  |  |  |
|  |  |  |  |  |
|  | 1.1.2 |  Has a steep scarp slope and a gentle dip slope  |  |  |
|  |  |  |  |  |
|  | 1.1.3 | Scarp slope is more than 45° |  |  |
|  |  |  |  |  |
|  | 1.1.4 | It is a suitable location for dams |  |  |
|  |  |  |  |  |
|  | 1.1.5 | An example of this ridge is found in Alice in the Eastern Cape |  |  |
|  |  |  |  |  |
|  | 1.1.6 | The gentle dip slope can be used for farming |  |  |
|  |  |  |  |  |
|  | 1.1.7 | Composed of steeply tilted strata of rock  |  |  |
|  |  |  |  |  |
|  | 1.1.8 | Formed by gently tilted rock strata  | **(8x1)** | **(8)** |
|  |  |  |  |  |
| Refer to FIGURE 2.1 showing landforms that formed because of inclined/tilted strata. |
|  **FIGURE 2.1**     **Homoclinal Ridge**   **Cuesta** [Source:[google/image](http://www.google/images)[s](http://www.google/images)[]](http://www.google/images)  |
| **2.1** |  |  |  |  |
|  | 2.1.1. | Differentiate between the dip slope of a homoclinal ridge and a cuesta.  | (2x1) | (2) |
|  |  |  |  |  |
|  | 2.1.2 | Did the landforms in the sketches of FIGURE 2.5, develop because of igneous or sedimentary rocks?  | (1x1) | (1) |
|  |  |  |  |  |
|  | 2.1.3 | Name the tectonic process that may have caused these landforms to be tilted.  | (1x1) | (1) |
|  |  |  |  |  |
|  | 2.1.4 | Refer to the dip slope and scarp slope in landforms **A** and **B**.  (a)Describe the difference between the *dip*  *slope* and *scarp* *slope*.  1. Comment on the fact that erosion is faster at the scarp slope than at the dip slope.
 | (1x2) (2x2)  | (2)(4) |
|  |  |  |  |  |
|  | 2.1.5 | Why is it difficult to farm in tilted/inclined landscapes?  | (2 x 2) | (4) |

 **[14]**