 **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**

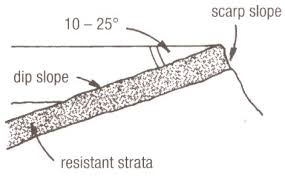
* The Dip slope shows the direction in which the rock layers dip.
* the dip slope is less steep than the scarp slope.
* The soils are thinner on the dip slope because of the resistant nature of the rock layer

**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. |
| 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. |

**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]**