 Province of the

EASTERN CAPE

EDUCATION

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

**HOME SCHOOLING SELF-STUDY WORKSHEET**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SUBJECT** | **WELDING & METALWORK** | **GRADE** | 12 | **DATE** | APRIL 2020 |
| **TOPIC** | **MATERIALS** | **TERM 1**  **REVISION** | (√) | **TERM 2 CONTENT** | ( ) |
| **TIME ALLOCATION** | 2 hrs | **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** | Below are QUESTIONS based on Term 1 content for revision purposes. Answer ALL questions. |

**QUESTION 1**

|  |  |  |
| --- | --- | --- |
| 1.1 | Describe the three steps that should be followed for all heat treatment processes. | 6 |
| 1.2 | Define the term ‘Critical Temperature’ | 2 |
| 1.3 | Where does the structural change take place during heat treatment? | 4 |
| 1.4 | Which heat treatment must be applied to a work piece in order to improve the machinability of the machinability? | 1 |

**QUESTION 2**

|  |  |  |
| --- | --- | --- |
| Define each of the following heat treatment processes, and indicate its application. | | 3 |
| 2.1 | Annealing | 3 |
| 2.2 | Normalizing | 3 |
| 2.3 | Hardening | 3 |
| 2.4 | Tempering | 3 |
| 2.5 | Carburizing | 3 |

**QUESTION 3**

|  |  |
| --- | --- |
| With the aid of a sketch, show the changes in metal structure that take place during the ‘Annealing’ process. | 5 |