



Province of the
EASTERN CAPE
EDUCATION

DIRECTORATE SENIOR CURRICULUM MANAGEMENT (SEN-FET)

HOME SCHOOLING SELF-STUDY WORKSHEET

SUBJECT	WELDING & METALWORK	GRADE	12	DATE	MAY 2020
TOPIC	JOINING METHODS	TERM 1 REVISION	()	TERM 2 CONTENT	(√)
TIME ALLOCATION	1h30	<p style="text-align: center;"><u>TIPS TO KEEP HEALTHY</u></p> <ol style="list-style-type: none">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	Answer all questions				

QUESTION 1 JOINING METHODS (INSPECTION OF WELD)

- 1.1 Name THREE factors that should be observed to ensure a good welded joint during the arc-welding process.
- 1.2 State TWO causes of EACH of the following during arc welding:
 - 1.2.1 Welding spatter.
 - 1.2.2 Incomplete penetration
- 1.3 State ONE precautionary measurement that needs to be taken to prevent EACH of the following arc-welding defects:
 - 1.3.1 Porosity.
 - 1.3.2 Slag inclusion
- 1.4 What is the purpose of a nick-break test on a welded joint?
- 1.5 State TWO weld defects that can be detected when conducting a guided bend test on a welded joint.
- 1.6 What property of the weld deposit and the heat-affected area adjacent to the weld is measured by performing a free-bend test?
- 1.7 Name THREE elements that should be inspected during visual inspection of arc-welded joints.
- 1.8 Describe the procedures followed when performing a liquid dye penetration test on a welded joint.

QUESTION 2 JOINING METHODS (STRESSES AND DISTORTION)

- 2.1 What is weld distortion?
- 2.2 What is meant by residual stresses in a welded joint?
- 2.3 Name THREE factors which affect distortion and residual stress in a welded joint.
- 2.4 State THREE methods used to reduce distortion.
- 2.5 Describe the difference between cold working and hot working of steel.
- 2.6 Name TWO factors that affect the grain size of steel when it is being cold-worked.