NESA NATIONAL EXAMINATION AND SCHOOL INSPECTION AUTHORITY

WEL – Gas welding and Brazing

T143

Tuesday, 20/7/2021

08:30 – 11:30 AM

Names: .....

Index number: .....

TVET NATIONAL EXAMINATIONS, RTQF LEVEL 5, 2020-2021

QUESTIONS and ANSWERS BOOKLET

OPTION/ TRADE : **WELDING**

SUBJECT : **GAS WELDING AND BRAZING**

ACADEMIC YEAR: **2020-2021**

Read carefully the instructions on page (i) & (ii).

FOR EXAMINER'S USE ONLY

QUESTIONS	1	2	3	4	5	6	7	8	9	10	Total
Marks											

QUESTIONS	11	12	13	14	15	16	17	18	19	20	Total
Marks											

QUESTIONS	21	22	23	24	25	26	27	28	29	30	Total
Marks											

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

INSTRUCTIONS TO CANDIDATES: PART I (Answer Booklet)

1. A candidate should fill in the actual names and the index number on the cover of this questions and answer booklet on the provided place (Black Box).

2. It is illegal for a candidate to write any of his/her names, index number or a school name inside the answer booklet.

3. A candidate should check if all pages of the answer booklet are complete. No candidate should remove or tear any pages or part of it from the answer booklet.

4. A candidate should answer in the language in which the examination is set. (See page ***(ii)***)

5. A candidate should sign on the sitting plan when submitting the answer booklet. He/she has also to check if the answer booklet is well sealed.

6. No extra paper is allowed in the examinations room. If a candidate is caught with it his/her results will be nullified.

7. No candidate is allowed to write answers not related to the subject being sat for, otherwise it will be considered as a cheating case.

8. Write your answers on the 12 lined pages (From page 1 of 12 to page 12 of 12).

9. Use the last non-lined pages as draft.

10. Results for any candidate who is caught in examination malpractices are nullified. The cheating can be recognized during examinations administration, marking exercise or even thereafter.

TVET NATIONAL EXAMINATION, RTQF LEVEL 5, 2020-2021

OPTION/TRADE: WELDING

SUBJECT: Gas welding and Brazing

DURATION: 3 hours

INSTRUCTIONS TO CANDIDATES: PART II Question paper)

The paper is composed of two (2) Sections as follows:

Section I: Attempt all the Twelve (12) questions **(60 marks)**
Section II: Attempt any Four (4) questions out of Six (6) **(40 marks)**

Allowed materials:

- Ruler or square
- Calculator

Note:

Every candidate is required to carefully comply with the provided assessment instructions.

Section I : Attempt all the Twelve (12) questions **(60 marks)**

01. List ten (10) consumable materials used in gas welding production. **(5 marks)**

02. State five (5) elements used in making a filler rod production. **(5 marks)**

03. State five (5) applications of ferrous metals and nonferrous metals. **(5 marks)**

04. Give five (5) examples of accessories used in oxyacetylene gas welding. **(5 marks)**

05. Mention at least five (5) functions of flux. **(5 marks)**

06. Choose the correct answer: **(5 marks)**

1. The quality expected from flux used in silver soldering is that it should be able to:

A. Dissolve oxides formed on the work

B. Fill up any gap in the joint

C. Vitrify after the solder has become molten

D. Form an oxide during the soldering operation

2. The melting temperature range for soldering process is:

A. 40°C to 100°c

B. 180°C to 450°C

C. 300°C to 500°C

D. 600°C to 900°C

E. 1000°C to 2000°C

3. Brazing is the process of:

A. Joining plastic sheets

B. Hard soldering using brass spelter

C. Casing in brass

D. Making steel look like brass

4. The melting temperature range of brazing process is:

A. Equal 450^0c

B. Above 450^0c

C. Less than $450\ ^0c$

D. Any of the above

5. A solder is made of:

A. Brass

B. Tin and lead

C. Steel

D. Copper and zinc

07. **a)** Identify four (4) typical major components of organic fluxes. **(2 marks)**

b) What is the form of flux? **(3 marks)**

08. With neat sketch state all types of flames and their applications. **(5 marks)**

09. With neat sketch draw oxy acetylene gas welding equipment. **(5 marks)**

10. Give five (5) examples of measuring tools used in gas welding production. **(5 marks)**

11. What is the purpose of using a pressure regulator in gas welding? **(5marks)**

12. Step by step what are the procedures of adjusting welding flame? **(5marks)**

Section II: Attempt any Four (4) questions out of Six (6) **(40 marks)**

13. Make a comparison between oxygen cylinders and acetylene cylinder. **(10 marks)**

14. Discuss about three (3) types of oxy acetylene gas welding flames and their applications. **(10 marks)**

15. Identify five (5) limitations and advantages of brazing process. **(10 marks)**

16. BRARIRWA enterprise wishes you to fabricate tanks which are used to store water with the following characteristics:

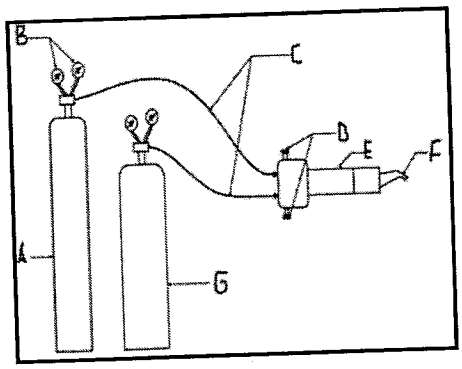
- Resist for corrosion and rust
- Have the attractive color
- Have thermal conductivity
- Must be installed in 200cm height above the ground surface

Questions:

a) Give four (4) examples of metals you have to request in order to perform this work. **(4 marks)**

b) Identify three (3) tools and three (3) equipment needed to perform this work. **(6 marks)**

17. a) Provide the names of the following points on oxy-acetylene gas welding process. (Long cylinder is Acetylene and shorter is oxygen). **(7 marks)**



b) Differentiate back fire from flash back. **(3 marks)**

18. Describe the procedures for lighting the flame. **(10 marks)**

Do not write anything on this page !

NESA2021