NESA NATIONAL EXAMINATION AND SCHOOL INSPECTION AUTHORITY

WEL – Technical Drawing and DCG

T147

Thursday, 29/7/2021

08:30 – 11:30 AM

Names: .....

Index number: .....

TVET NATIONAL EXAMINATIONS, RTQF LEVEL 5, 2020-2021

QUESTIONS and ANSWERS BOOKLET

OPTION/ TRADE : **WELDING**

SUBJECT : **TECHNICAL DRAWING AND DCG**

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: Technical Drawing and DCG

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)**

1. What is plane geometry? **(5 marks)**

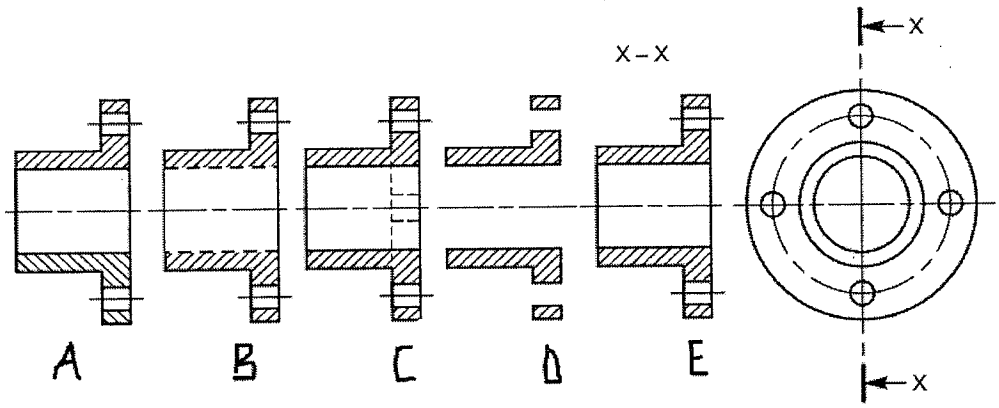
2. Divide a line of 120mm into five equal parts. **(5 marks)**

3. Draw symbols of first and third angle projection. **(5 marks)**

4. What is the actual length when the drawing length is 400 mm and scale is 5:1? **(5 marks)**

5. What is the actual length in scale? Give three (3) uses of scale. **(5 marks)**

6. Mention the drawing section which is correct. **(5 marks)**



7. Draw an arc of radius 90mm to touch internally two circles A of 20mm radius and B of 35mm radius. The Centre distance of the two circles is 100mm. **(5 marks)**

8. Give three (3) grades of pencil, and give their difference. **(5 marks)**

9. State the classification of Engineering drawing. **(5 marks)**

10. Give the meaning of the following abbreviations used in dimensioning.

(a) CL (b) CSK HD (c) PCD (d) DIA (e) A/F **(5 marks)**

11. Name five (5) types of views. **(5 marks)**

12. Give five (5) applications of CAD Software in Mechanical. **(5 marks)**

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

13. a) Draw four (4) 2D shapes. **(5 marks)**

b) Draw four (4) 3D Shapes. **(5 marks)**

14. a) What are degrees representing the following angles? **(5 marks)**

i. Acute angle

ii. Right angle

iii. Obtuse angle

iv. Straight angle

v. Reflex angle

vi. Full angle

b) Represent the following on circle. **(5 marks)**

i. Chord

ii. Normal

iii. Diameter

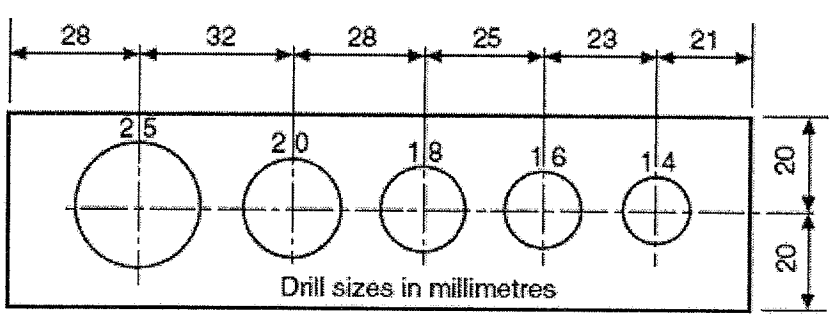
iv. Radius

v. Tangent

vi. Circumference

vii. Arc

15. The figure below is dimensioned in using chain method. Dimension it using parallel methods. **(10marks)**



16. Construct a regular polygon within an 80 mm diameter circle: **(10 marks)**

1. Draw a circle of 80mm diameter
2. Draw The vertical diameter QR and divide it into five (5) equal parts
3. Draw arcs radius RQ from R and Q to meet at point S
4. Draw line ST through point 2 on Vertical diameter RQ
5. Draw line RT as the side of the required polygon
6. State the name of that polygon.

17. What is a polygon? Mention five (5) names of polygons. **(10 marks)**

18. Describe the following mating shaft and holes for determining the:

25 H7/g6

a) hole tolerance,fondumental deviation, upper and lower limits.

b) shaft tolerance,fondumental deviation, upper and lower limits.

(10 marks)

Do not write anything on this page !

NESA2021