



Tuesday, 20/7/2021
08:30 – 11:30 AM

Names

Index number

TVET NATIONAL EXAMINATION, RTOF LEVEL 5, 2020-2021

QUESTIONS and ANSWERS BOOKLET

OPTION/TRADE: HYDROPOWER ENERGY

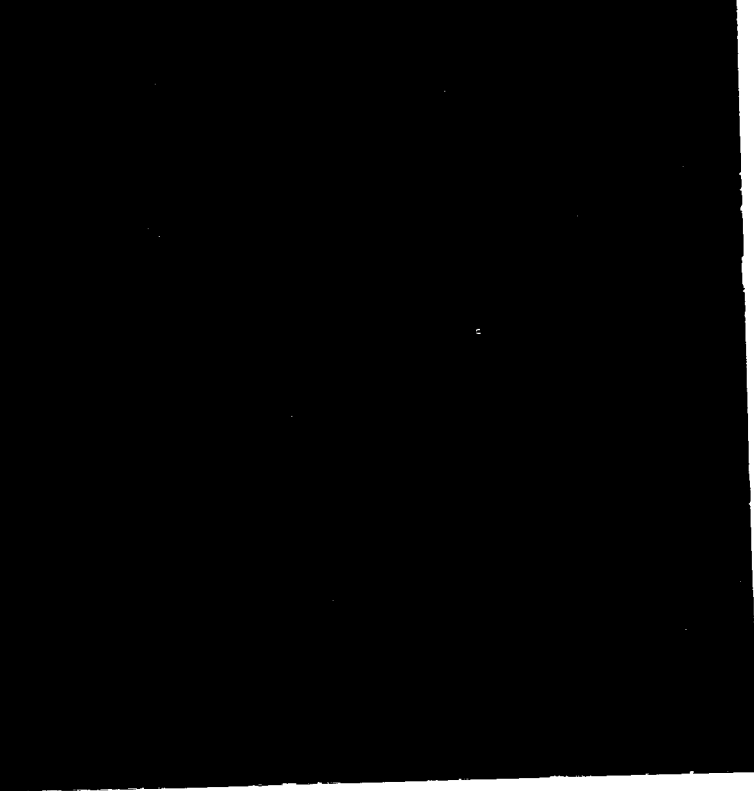
SUBJECT: Technical and Electrical Drawings

ACADEMIC YEAR 2022-2023

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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: HYDROPOWER ENERGY

SUBJECT: Technical and Electrical Drawing

DURATION: 3hours

INSTRUCTIONS TO CANDIDATES:PART II (Question Paper)

The paper is composed of two (2) main 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 and 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.** Define the term: 'Drawing' **(5 marks)**
- 02.** List and differentiate any two (2) types of drawing. **(5 marks)**
- 03.** List down any five (5) categories of engineering drawing. **(5 marks)**
- 04.** **a)** What do you understand by the term scale?
 b) Mention the main uses of scales in engineering practice. **(5 marks)**
- 05.** **a)** Explain the term 'dimensioning' used in technical drawing.
 b) List at least three (3) types of dimensioning. **(5 marks)**
- 06.** Draw and indicate the application of the following lines:
 a) Continuous thick line
 b) Continuous thin line. **(5 marks)**
- 07.** **a)** Define the term "lettering"
 b) What are the features of lettering? **(5 marks)**
- 08.** By using symbols, differentiate first angle projection from third angle projection. **(5 marks)**
- 09.** Draw a complete wiring diagram of one lamp controlled in two (2) different positions. **(5 marks)**

10. a) Define a Triangle.
b) What are any four (4) types of triangles and its characteristics?
(5 marks)

11. Explain clearly the purpose of intermediate switching system.
(5 marks)

12. a) Enumerate two (2) types of projection
b) Draw the three (3) types of axonometric projections of cube where the edge of the cube is 2cm.
(5 marks)

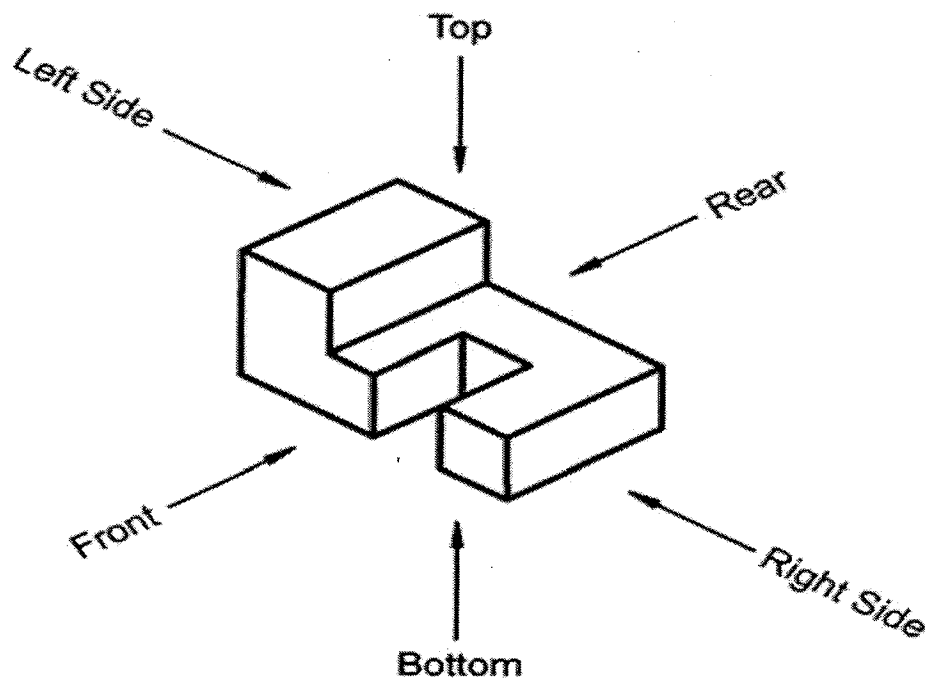
Section II: Attempt any Four (4) questions out of Six (6) (40 marks)

13. Define the following acronyms:
a) HRC
b) MCB
c) MCCB
d) ELCB
e) RCCB.
(10 marks)
14. Indicate the symbols of the following elements:
a) Contractor
b) Thermal relay
c) Magnetic relay
d) Magneto thermal relay
e) NO push button
f) NC push button
g) SPST
h) SPDT
i) DPST
j) DPDT.
(10 marks)
15. a) What do you understand by the term CAD?
b) List down any five (5) applied fields of Auto CAD.
(10 marks)

16. On the ceiling a hexagonal area is reserved for a big lamp containing a support with a hexagonal base. Before the lamp is fixed you should draw a hexagonal regular polygon. Follow the given steps to draw that hexagon.

- a) Draw a circle with AD equals to 60 mm as diameter.
 - b) Divide the diameter AD into equal six (6) parts.
 - c) With AD as radius and A&B as centres, draw arcs intersecting each other at G
 - d) Join G-2 and extend to intersect the circle at B
 - e) A-B is one side of the hexagon.
- (10 marks)**

17. From the sketch given below. Sketch the bottom view, right view, top view, front view, left view, rear view in first angle projection.



(10 marks)

18. Draw wiring diagram of lighting circuit consisting of One Lamp which controlled in three (3) different positions.
- (10 marks)**

Do not write anything on this page !

