



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: CARPENTRY

Subject: Wooden Staircase construction

DURATION: 3 hours

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) State four (4) methods of setting out used in stair construction.
(5 marks)
- (02) When working in the construction site, a lot of the work that you do will be at height. Discuss the main measures to take for preventing the hazard and working conditions to follow for your protection against these hazards.
(5 marks)
- (03) Explain what a carpenter can do to reduce the possibility of injury or collapse on stairway.
(5 marks)
- (04) Mention common rises sizes for different types of stairs for buildings given below:
a) for Garden and open air stair
b) for stairs in public building
c) for Stairs in flats and dwellings
d) for Stair of minor importance.
(5 marks)
- (05) In stair construction, it is required to apply the finishes products for increasing the appearances. Describe the method of applying finishes on stair.
(5 marks)
- (06) Illustrate the surface finishes products used for stair structural.
(5 marks)
- (07) Indicate the quality requirements of timber used for stair construction.
(5 marks)

(08) What are the quality requirements of timber used for stair construction? **(5 marks)**

(09) Calculate the slop angle of the stair having the flight rise of 1900mm and total run of 3500mm and draw the figure illustrating your answer. **(5 marks)**

(10) A TVET School located in Nyagatare District; offered a tender of constructing a wooden stair in one of their administrative office in order to solve the problem of inadequate way of accessing the upper floor. The stair specifications are detailed as follows:

Height between ground level and upper floor is 1.20m

The width of a stair should be 90cm.

- a) Calculate the number of rises
- b) Calculate the size of rise
- c) Calculate the number of going
- d) Calculate the size of going
- e) Calculate the length of flight

(5 marks)

(11) With stair plan elevation sketch, demonstrate five (5) stairs found in type of turning stair. **(5 marks)**

(12) Illustrate the factors to consider for selection of types of stair to be installed in specific building **(5 marks)**

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

(13) Identify any ten (10) tools or equipment used for constructing staircase. **(10 marks)**

(14) Explain the following terminologies used in stair construction:

- a) Straight run
- b) circular stair
- c) unit run
- d) Rise
- e) Going from tread.

(10 marks)

(15) A) choose the best answer to each question:

- a) What is the term for stairway that leads to a basement?
 - i. Secondary stairway
 - ii. Primary stairway
 - iii. Service stairway
 - iv. Finish stairway
- b) What is the long term for a long piece of 2xlumber that supports a stair?
 - i. Step
 - ii. Stringer
 - iii. Tread
 - iv. Riser
- c) When laying out stringers, what should your goal be?
 - i. To do quick, efficient work
 - ii. To save money on materials
 - iii. To follow the plans closely
 - iv. To have a structurally strong, safe stairway

B) Identify the importance of stair in building. **(10 marks)**

(16) A Turing stair should have a breaking part called landing, with neat sketches represent and name three (3) forms of landing. **(10 marks)**

(17) Design a dog-legged staircase for a residential building in a stairwell of 4.5 mX3.0m and vertical span between two floors of 3.0m. Assume that the height of rise is 150mm. Draw a neat sketch to support your design

a) Calculate the number of rises

b) Calculate the size of rise

c) Calculate the number of going

d) Calculate the size of going

e) Calculate the length of flight.

(10 marks)

(18) By using sketch, identify the following terms related to stair construction

a) Wall,

b) String,

c) Baluster,

d) Tread

e) Rise

f) Newel Post.

g) Landing

h) Handrail.

(10 marks)

