



2020	NESA2020	NESA2020	N
2020	NESA2020	NESA2020	N
2020	NESA2020	NESA2020	N
2020	NESA2020	NESA2020	N
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T045

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TSS NATIONAL EXAM

NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024 NESA2024

QUESTIONS 1 ANSWERS BOOKLET

[illegible]

SUBJECT/EXAM: ELEVATION AND SCAFFOLDING OPERATIONS

DURATION: 3 Hours[illegible][illegible][illegible]

FOR EXA

QUESTIONS	1	2	3	4	5	6	7	8	9	10
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9	10	Total
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TSS NATIONAL EXAMINATIONS, LEVEL 5, 2023-2024

INSTRUCTIONS TO CANDIDATES (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.
2. It is illegal for a candidate to write any of names, Index number or school name inside the answer booklet.
3. No candidate should remove or tear any pages or part of it in the answer booklet.
4. A candidate should answer in the language in which the examination is set.
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 16 lined pages (From page 7 to page 22).
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.

N.B: 1) After results publication, there is no remarking and no candidate is given his/her answer booklet for review. This answer booklet is a property of NESAs.

2) Claims are only received online within 30 days after results publication. A link will be provided after results publication.

T 045_ Elevation and Scaffolding operations

TSS NATIONAL EXAMINATIONS, LEVEL 5, 2023-2024

OPTION/TRADE: MASONRY

SUBJECT/EXAM: ELEVATION AND SCAFFOLDING OPERATIONS

DURATION: 3 HOURS

INSTRUCTIONS TO CANDIDATES: (MARKING GUIDE)

This Exam paper is composed of Three Sections (A, B, and C). Follow the instructions given below, and answer the indicated questions for a total of 100 marks

Section **A**: Fourteen (14) questions, all **Compulsory** **55 marks**

Section **B**: Among the five (5) questions, attempt any three (3) **30 marks**

Section **C**: Among the two (2) questions, attempt any one (1) **15 marks**

Allowed materials:

- Blue pen
- Pencil
- Ruler
- Calculator

Note:

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

T 045_ Elevation and Scaffolding operations

SECTION A: Attempt all questions

(55 marks)

- 01.** Define the following terms: **(4marks)**
- a)** Bricks
 - b)** Footing
- 02.** Describe any five (5) of the following properties for a good brick to be used in construction domain: **(5marks)**
- (1)** Color; **(2)** Shape; **(3)** Size; **(4)** Texture;
(5) Soundness; **(6)** Hardness; **(7)** Strength
- 03.** Identify five (5) important elements to consider while clearing work area for wall elevation works. **(5marks)**
- 04.** Differentiate Tear from Wear scaffold defects. **(4marks)**
- 05.** Match the following tools from column A with its corresponding function described in the Column B. Write the answer in the “Answer column” here shown below. **(5marks)**

Answer	COLUMN A (tools)	COLUMN B (Function)
A=.....	A. Spirit level	1. Is used for making scratches on plaster while plastering.
B=.....	B. Scratching tool	2. They are used for jointing and pointing
C=.....	C. Hoe	3. Is used to remove extra mortar from walls, floors, and to scrap the wall ready for painting
D=.....	D. Jointers	4. Is used for leveling the horizontal plane of masonry works.
E=.....	E. Scraper	5. Is used for digging

(3marks)

- 06.** Calculate the quantity of materials for RCC (1:2:4) used in foundation for 20m³ of work. If 1 bag of cement= 50kg, Dry factor: 1.52 Specific weight of cement: 1440kg/m³
- 07.** State three (3) functions of a wall. **(3marks)**

T 045_ Elevation and Scaffolding operations

- 08.** List any three (3) types of bonds. **(3marks)**
- 09.** Explain four (4) ways of arranging scaffold elements after removing or dismantling. **(4marks)**
- 10.** Describe three (3) of the following types of mortar used in masonry. **(3marks)**
- a)** Lime mortar
 - b)** Cement mortar
 - c)** Cement-lime mortar
 - d)** Mud mortar
- 11.** As supervisor in construction field, identify any four (4) causes of foundation failures. **(4marks)**
- 12.** Use the numbered letters (A, B, C, D, E) in the “matching column” to show the relationship between the type of work with their recommended mortar in the table below. **(4marks)**

Type of work	Matching	Recommended mortar
A. The structure members that are heavily stressed.	1:3 to 1:6 cement mortar or 1:2 lime mortar
	1:4 cement mortar
B. Plastering of walls inside.	1:5 to 1:6 cement mortar or 1:2 lime mortar
C. Plastering of walls outside.	1:1 cement mortar
D. Stone masonry in foundations and super Structure of ordinary buildings.		
E. Plastering underside of ceiling.		

- 13.** Differentiate bearing capacity from bearing pressure. **(4marks)**

T 045_ Elevation and Scaffolding operations

- 14.** Distinguish the following types of bricks according to their geometry. **(4marks)**
- a)** Perforated bricks
 - b)** Cellular bricks
 - c)** Solid bricks
 - d)** Hollow bricks

Section B: Attempt any three (3) questions

(30 marks)

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- 15.** Mongoria Company has got an offer to carry out a final inspection of erected Scaffolding, and wishes your assistance to perform that task. Explain clearly the way you will do the work, in order to end up with tangible results. **(10marks)**
- 16.** Determine the number of bricks we must use for building a water tank which has **160 cm** of internal radius and thickness of wall is **0.2m**. The height is **25dm**. The mortar of construction is **1/4** of total volume, and size of bricks is **(210*110*60)** mm. **(10marks)**
- 17.** Mortar is composed of three main ingredients which are cement, sand and water. Before mixing these ingredients, they need to be measured so that the only required amount for each ingredient will be used. Make a comparison of mixing steps involved in hand mixing and mechanical mixing. **(10marks)**
- 18.** Identify five (5) advantages and five (5) disadvantages of steel scaffolding. **(10marks)**
- 19.** By using a neat sketch, draw and show the different parts of an independent scaffolding (double scaffolding). **(10marks)**

T 045_ Elevation and Scaffolding operations

Section C: Attempt only one (1) question

(15 marks)

- 20.** Make a sketch and indicate the following technical terms used for bonding masonry structures particularly in bricklaying. **(15marks)**

- | | |
|-------------------|-------------|
| a) vertical joint | g) toothing |
| b) stopped end | h) quoin |
| c) lap | i) 3/4bat |
| d) racking back | j) course |
| e) bed joint | k) hang |

- 21.** English bond is the strongest bond widely used in brick work. **(15marks)**
With clear sketches, construct 1st and 2nd Courses of Right Angle in English bond and demonstrate at least five (5) tools used for erecting that bond.

END OF ASSESSMENT

