SMZ

ZANZIBAR EXAMINATIONS COUNCIL

FORM THREE ENTRANCE EXAMINATION

055   **BUILDING CONSTRUCTION**

TIME   2:30 HOURS   **FRIDAY 1ST DECEMBER, 2017 pm**

INSTRUCTIONS TO CANDIDATES

1. This paper consists of sections A, B and C.

2. Answer ALL questions in sections A, B and any two questions from section C.

3. All answers must be written in the space provided.

4. Write your examination number on every page of this booklet

5. Calculators and cellular phones are not allowed in the examination room.

FOR EXAMINER'S USE ONLY					
QUESTION NUMBER	**MARKS**	**SIGNATURE**	**QUESTION NUMBER**	**MARKS**	**SIGNATURE**
1			9		
2			10		
3			11		
4			12		
5			13		
6			14		
7			15		
8					
TOTAL					

This paper consists of 14 printed pages.

SECTION A: (20 Marks)

Answer ALL questions in this section.

1.   Choose the letter of the correct answer and write it below the item number in the table below.

i)   Timber seasoning is the process of

   A. Timbering to trench   B. Timber conversion

   C. Timber drying   D. Timber hardening

ii)   The cement that commonly used in ordinary work is

   A.   Rapid hardening Poland cements

   B.   High alumina cements

   C.   White and colored cement.

   D.   Extra rapid hardening Poland cement.

iii)   Bearing capacity of soil means

   A.   The load to a sub-soil at point over the ground.

   B.   The load to subsoil some distance below the ground floor.

   C.   The load that soil can safely carry without appreciable settlement.

   D.   Deformation of soil due to imposed loads.

   E.   The force to be resisted by a foundation.

iv)   The main functions of window are to

   A.   Admit day light and to pass ventilation

   B.   Allow people to pass through

   C.   Weather proof building and admittance of people and their goods.

   E.   Allows wind escaping from it.

v)   The function of cement in making concrete is to

   A.   Fill the voids between aggregates

   B.   Bind the aggregates together.

    C.   Produce the chemical reactions when mixed with water.

    D.   Avoid segregation.   E. Colors the concrete before use.

vi)   The method of preventing the side of execution from falling down

    A.   Dewatering   B. Timbering to trench

    C.   Temporary execution   D. Polling board

    E.   Puncheon

vii)   Which one is the temporary structure used to support workers and materials during construction above the ground level

    A. Shore   B. Strut   C. Brialle   D. Scaffold   E. Formwork

viii)   The following are functional requirements of a floor except

    A.   Durability   B. Exclusion of wind and rain

    C.   Fire resistance   D. Transmission of sound

    E.   Strength

ix)   The first task to be accomplished when setting a foundation on a building site is to

    A. Obtain a datum level   B. Set profile board

    C. Set right angle   D. Establishing a building line

    E. Measure the size of the building

x)   The equipment used to measure accurate amount of materials in the preparation of concrete batch is called

    A. Wheel barrow   B. Gauge box

    C. Shovel   D. Spirit level   E. Trough

ANSWERS

Item number	i	ii	iii	iv	v	vi	vii	viii	ix	x

2. Match the items in **List A** with the responses in **List B**. Write the letter of the correct response in the table below.

LIST A	LIST B
i. To maintain alignment of courses.	A. Jointer
ii. Used for pointing the joints.	B. Trowel
iii. A tool used for accurate cutting of bricks.	C. Hawk
iv. An instrument suitable for checking right angles	D. line and pins
v. Used with straight edge, for getting horizontal surfaces also used for leveling.	E. Bolster
	F. Plumb bob
vi. It help in lifting and spreading of motor.	G. Spirit level
vii. Used with club hammer when cutting holes or chases.	H. Masons square
viii. Used for laying floors creeds.	I. Brick hammer
ix. It is used for carrying motor when pointing process is done.	J. Scutch
	K. Laying on trowel
x. To check verticality of brick walls.	L. Club hammer
	M. Braces

Item number	i	ii	iii	iv	v	vi	vii	viii	ix	x

SECTION B: (40 Marks)

Answer ALL questions in this section

3. a)   What do you understand by "segregation of concrete"?

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  b)   Write down a binding agent used in motor and concrete.

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4. a)   State the main function of reinforcement bars in a concrete beam.

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  b)   At what position of the beam does the reinforcement bars are placed?

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5. a)   Define the term architect.

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b)   Identify the two (2) classes of walls.

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6.   a)   Mention the size (in mm) of a sieve that allows fine aggregates to pass through.

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b)   Distinguish between English bond and Flemish bond.

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7. Briefly explain the purposes of soil investigation.

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8. List four (4) temporary services which are important at a site during construction work.

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9. a) Define the term **timbering.**

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b) List down three (3) common types of shores.

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10. Why is the clay for brick making weathered?

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11. Write short explanation on the following,

   i) Fine aggregates.

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   ii) Course aggregates.

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12. List down four (4) precautions that should be taken to avoid accidents in a workshop.

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SECTION C: (40 Marks)

Answer any two (2) questions in this section.

13. a) Briefly explain how to prepare the following

   i) Lime motor.

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   ii) Cement motor.

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   iii) Ganged motor.

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b) A brick pier $0.45m \times 0.45m$ exerts a force of $200KN$ including the mass of the pier. Determine,

   i) The pressure in KN/m^2 on the brick pier.

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   ii) The minimum area of the foundation required if the soil has bearing capacity of $150KN\text{m}^{-2}$

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14. a) Outline five (5) important requirements of a wall.

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b) Briefly explain any four (4) advantages of cavity wall over solid wall.

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c) What is the difference between

i) Uniform settlement and differential settlement of foundation.

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ii) Initial setting time and Final setting time of cement.

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15. a) Mention two (2) methods that can be used to ensure that square corners are obtained when setting out a building.

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b)   i) Define the term **scaffold.**

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ii) Distinguish between single scaffolding and double scaffolding.

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c) Explain the importance of curing a concrete.

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