THE UNITED REPUBLIC OF TANZANIA
NATIONAL EXAMINATIONS COUNCIL
CERTIFICATE OF SECONDARY EDUCATION EXAMINATION

071 **BUILDING CONSTRUCTION**

(For Private Candidates Only)

Time: 3 Hours **Tuesday, 17th November 2015 a.m.**

Instructions

1. This paper consists of sections A, B and C.
2. Answer **all** questions in sections A and B, and **two (2)** questions from section C.
3. Calculators and cellular phones are **not** allowed in the examination room.
4. Write your **Examination Number** on every page of your answer booklet(s).

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SECTION A (20 Marks)

Answer **all** questions in this section.

1 For each of the items (i) – (x), choose the correct answer from among the given alternatives and write its letter beside the item number in the answer booklet provided.

(i) A person engaged by the building owner as an agent of designing, advising and ensuring that the project is kept within cost and complies the design is called

A Architect B Surveyor C Estimator
D Quantity surveyor E Contractor's manager.

(ii) One of the following is a property which serves the purpose of the foundations on the building:

A Combined footings B Safety against undermining
C Determine ground water level D Site reconnaissance
E Uplift pressure.

(iii) Load-bearing walls are generally provided with

A foundation B large thickness C partition walls
D hollow concrete blocks E extra non load bearing wall.

(iv) One of the following provides a level surface capable of supporting the occupants of a building, furniture, equipment and sometimes internal partitions:

A Hard core B Concrete bed C Oversite concrete
D Floor E Compaction of hard core.

(v) The roof members that runs from the ridge to the eaves and support the battens underneath the roof covering are knows as

A Hip rafters B Common rafters C Valley rafters
D Jack rafters E Barge boards.

(vi) The vertical member running through the middle of the framework of a shutter is called

A Transom B Style C Jamb
D Ledge E Mullion

(vii) The wooden block fixed on the back side of a door or window frame to prevent damaging of the plastering of jambs is called

A Chock B Sill C Stop
D Reveal E Rebate

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(viii) The upper horizontal portion of a step upon which the foot is placed while ascending or descending the stair is called

A	Landing	B	Going	C	Tread
D	Run	E	Flight.		

(ix) A bidet can be connected to waste-pipe system by using a pipe with diameter of

A	100mm	B	50mm	C	45mm
D	75mm	E	32mm		

(x) To prevent an overflow of a cold water storage cistern every supplying pipe must be fitted with

A	Gate valve	B	Stop valve	C	Stop cock
D	Float valve	E	Non return valve		

2. Match the items in **List A** with responses in **List B** by writing the letter of the corresponding response beside the item number in the answer booklet provided.

	List A		List B
(i)	Load-bearing members spanning from the ridge to the valley.	A	Dragon ties
(ii)	Beams used to give support to ceiling joists and counter-act excessive deflections.	B	Collars
(iii)	Fixing media for roof members and distribute the roof loads evenly all around the building.	C	Hangers
(iv)	Main load-bearing members of a roof spanning between the wall and the ridge.	D	Binders
(v)	Acts as beams reducing the span of the main load-bearing members from the ridge.	E	Purlins
(vi)	Compression members which transfer loads to a suitable load-bearing support.	F	Struts
(vii)	Extra ties that give additional strength to the truss.	G	Soffits
(viii)	Members running from the ridge forming the spine of an external angle.	H	Common rafters
(ix)	Vertical members used to give support to beams carrying the ceiling joists.	I	Jack rafters
(x)	Members running from the ridge forming an internal angle.	J	Hip rafters
		K	Valley rafters
		L	Wall plates
		M	Wall boards
		N	Wall battens
		O	Fascia boards

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SECTION B (40 Marks)

Answer **all** questions in this section.

3. Enumerate eight chemical ingredients of Portland cement.

4. (a) What is the need of sub-surface investigation?
   (b) Name four methods applicable in boring method of sub-surface investigation.

5. (a) Explain "workability" of concrete.
   (b) How is "workability" of concrete measured at site?

6. Sketch the conventional symbols for the following sanitary items:
   (a) Urinal wall hung.
   (b) Urinal stall.
   (c) Shower head.
   (d) Urinal corner hung.

7. (a) When is a revolving door preferred to a hinged door?
   (b) Define "shutter" and "sill" in a door opening.

8. With the aid of sketches, define the following terms:
   (a) Open eave.
   (b) Closed eave.

9. Describe four effects of dampness in a structure.

10. Describe the following terms as applied to the floors:
    (a) Base course.
    (b) Under layer.
    (c) Topping.
    (d) Floor finish.

11. Give four disadvantages of timber flat roofs.

12. Differentiate cornices from the architraves.

SECTION C (40 Marks)

Answer **two (2)** questions from this section.

13. (a) Differentiate lime sand mortar from cement sand mortar.
    (b) Give two classifications of aggregates and describe their technical requirements.
    (c) Explain the preparation of plastered surface before painting.
    (d) (i) Enumerate eight types of paint defects.
    (ii) Outline two causes of paint defects and explain remedies to overcome the effects.

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14. (a) Why it is not advised to introduce winders in stairs?

(b) Explain the requirements of a good stair by considering the following:

(i) Pitch of the stair.

(ii) Head room.

(iii) Handrail.

(c) With the aid of plan sketches, distinguish between Straight Stairs and Quarter-turn Stairs.

15. (a) Explain the following parameters in relation to the principles of a good drainage:

(i) Quality.

(ii) Water tight.

(iii) Straightness.

(b) Describe 'straightness test' method and its procedure of testing the drainage pipe.

(c) (i) List down four types of waste water fittings.

(ii) Name two types of urinals.

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