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

071 **BUILDING CONSTRUCTION**

(For Both School and Private Candidates)

Time: 3 Hours **Thurday, 03rd November 2016 p.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).

SECTION B (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) Timber seasoning is the process of
A timbering to trench B timber conversion C timber drying
D timber treatment E timber hardening.

(ii) The foundation wall between base concrete and floor level is known as
A parapet B skirting C dado D plinth E footing.

(iii) The function of wall-ties in the cavity wall is
A to increase the width of the whole wall
B to increase the width of the wall above eave level
C to strengthen the foundation wall and concrete base
D to strengthen the wall by tying outer and inner leaves
E to allow equal settlements of both leaves of the wall

(iv) A sold floor is composed of two essential components which are
A Floor base and flooring B Base concrete and flooring
C Timbering and bettering D Stones, lime and cement
E Suspended floor and floor finish

(v) What is a "verge" in roof construction?
A The projected part of the roof on the gable side.
B The projected part of the roof on the sides of the hipped roof.
C The timber member forming a valley in a hipped roof.
D The timber member giving shape of mansard roof.
E The timber member supporting the gutter in the roof.

(vi) The suitable door for internal rooms is
A panel doors and match boarded doors B match boarded doors and flush doors
C match boarded doors D hollow core flush doors
E ledged battened and braced doors.

(vii) In public buildings, the window area required compared to the room floor area is
A 70% B 40% C 10% D 5% E 20%

(viii) Which one of following member can be used as an alternative to landing?
A Balustrade B Hand rail C Winder
D Banister E Balcony.

(ix) The recommended minimum height for the chimney stack passing through the ridge is
A 750mm B 915mm C 815mm
D 1000mm E 600mm

(x) Which type of pipes are **not** recommended in soft water supply schemes?
A Galvanized steel pipes B Steel pipes C PVC pipes
D Cast iron pipes E Lead pipes.

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) A series of steps without a landing.	A Head room
(ii) The height between the lines of nosing to the soffit of ceiling or roof immediately above.	B Flier
(iii) The space in which the series of steps and landing are housed.	C Soffit
(iv) The actual means of ascension or dissention from one level to another.	D Going
(v) The member that connects the nosing of all treads in any series of steps.	E Stringer
(vi) An inclined member at a convenient height projecting above steps of stair to provide assistance and safe guard to users.	F Baluster
(vii) The member receiving the ends of steps which are generally housed to the inclined support and secured by wedges.	G Stairs
(viii) The vertical member between two consecutive treads.	H Rise
(ix) The vertical height between two consecutive treads.	I Winder
(x) The step of non-uniform width.	J Flight
	K Stairwell
	L Hand rail
	M Pitch line
	N Riser
	O Landing

SECTION B (40 Marks)

Answer **all** questions in this section.

3. (a) Define the following terms:
(i) Slump test.
(ii) Cube test.

(b) Briefly explain the importance of curing a concrete.

4. (a) What is site reconnaissance?

(b) What is the objective of site exploration?

5. (a) Briefly explain the function of a footing or foundation wall.
(b) State the difference between DPC and DPM in construction works.

6. (a) What is a 'standard' in scaffolding?
(b) State the difference between transom and put log.
(c) Why is important to provide guide rail in scaffolding?

7. Give four parameters considered for the selection of site for dam construction.

8. (a) Name four roof covering materials commonly used for pitched roofs.
(b) State four factors on which the selection of roofing material will depend upon.

9. (a) Why doors and windows are provided in the room of a building?
(b) What type of door you suggest for bath rooms and dining room of modern residential building?

10. Describe the following types of hinges:
(a) Strap hinges.
(b) Hook and band hinges.

11. Calculate the moisture content of a piece of timber 120cm long, 25mm x 150mm cross section it weighs 4000gms before seasoning and 3000gm after seasoning.

12. State four properties of concrete.

SECTION C (40 Marks)

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

13. (a) (i) Name four functional requirements of a good wall.
(ii) Name two instruments/equipment used for setting out the circular walls. **(08 marks)**

(b) (i) Differentiate between sleeper wall and cavity wall.
(ii) State the function of parapet wall. **(03 marks)**

(c) Define the terms 'corbel' and 'coping' as applied in building construction. **(03 marks)**
(d) Aided with a neat sketch, differentiate between weathering and throating **(06 marks)**

14. Briefly describe the construction of the following types of floors:
(a) Glass flooring **(04 marks)**
(b) Mosaic flooring **(04 marks)**

(c) Industrial flooring **(04 marks)**

(d) Field flooring **(04 marks)**

(e) Timber flooring **(04 marks)**

15- (a) The main cause of foundation failure is unequal settlement of the subsoil. Explain three remedial measures to be taken in order to avoid it. **(06 marks)**

(b) With the aid of a neat sketch, explain the precautions which must be observed when excavating a trench near an existing building. **(10 marks)**

(c) With the aid of sketch, briefly explain the pad foundation. **(04 marks)**