

**CST – Cost Estimation**

**T018**

**Friday, 30/11/2018**

**08:30 – 11:30 AM**

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2018,  
TECHNICAL AND PROFESSIONAL STUDIES**

**EXAM TITLE: COST ESTIMATION**

**OPTION: Construction (CST)**

**DURATION: 3 hours**

**INSTRUCTIONS:**

The paper is composed of **three (3) main Sections** as follows:

**Section I: Fourteen (14) compulsory questions. 55 marks**

**Section II: Attempt any three (3) out of five questions. 30 marks**

**Section III: Attempt any one (1) out of three questions. 15 marks**

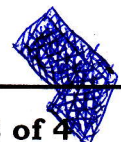
**Note:**

***Every candidate is required to carefully comply with the above instructions. Penalty measures will be applied on their strict consideration.***

**Section I. Fourteen (14) Compulsory questions**

**55 marks**

01. What do you understand by the term construction cost? **(3 marks)**
02. Explain briefly the following terms with respect to preparation of bills of quantities.  
a) Taking off;                      b) Working -up **(5 marks)**
03. Calculate the depth of circular swimming pool if the diameter is 8.22m and the total cost of internal finishing is 1,750,950 FRW, the unit price being 16,700 FRW. **(4 marks)**
04. What do you understand by bills of quantities? **(3 marks)**
05. Explain five roles of quantity survey during preparation of tenders. **(5 marks)**
06. A foundation has 2m of length and its area is 0.40m×0.35m. This foundation is made in concrete with a ratio of 200kg/cum.  
Calculate: a) Volume of foundation  
b) Quantity of cement, gravel and sand. **(5 marks)**
07. In a tabular form, give a clear difference between " details of measurement form and an abstract of estimate cost". **(5 marks)**
08. Which measurement do you use in measuring the following units of work?  
a) Plastering                                      c) Foundation concrete  
b) Doors and windows                      d) Pipes **(4 marks)**
09. Enumerate at least 6 items of building construction works. **(3 marks)**
10. Give at least 6 tenders enquiry documents that a tender should have. **(3 marks)**
11. List out any three problems that can interrupt the execution of the work progress. *> delaying of project*  
*> disasters* **(3 marks)**
12. What can you do if the estimated cost is greater than the money available? **(2marks)**
13. Identify ten construction documents including drawing which are used in the construction work. **(5marks)**
14. State any five cases when a bid documents can be rejected. **(5 marks)**



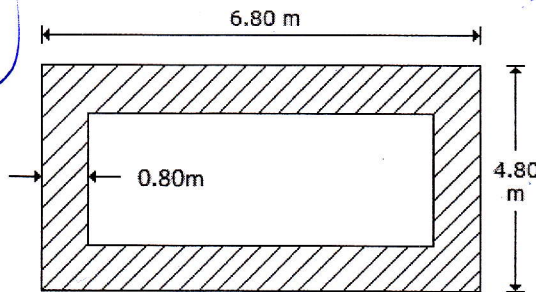
**Section II. Choose and answer any three (3) questions.**

**30 marks**

15. Explain briefly three types of tendering methods in construction. **(10 marks)**

16. Site conditions may affect the overall cost of the project. Outline 8 ways from which the site conditions will be affecting overall cost of the project. **(10 marks)**

17. Referring to the figure below,



Find out the total length of the centre line of the 4 walls. **(10 marks)**

18. From the information provided in the table below, complete the table with the missing information: **(10 marks)**

S/N	Items	Unit of measurement
1.	Tiling works	Sqm
2.	Doors and windows fittings	
3	Painting	
4	Reinforced brick work	Cum
5	Water supply and sanitary arrangement	
6	Plastering	Cum
7	Stone masonry	Cum
8	Earthwork in foundation filling	Sqm
9	Shutters of doors	Sqm
10	Thin partition wall	Cum

19. An arch of 2.5 m span subtends an angle of  $80^\circ$  at the centre. The thickness of arch is 30 cm and the breadth of wall is 40 cm. Calculate the quantity of arch masonry work. **(10 marks)**

**Section III. Choose and answer any one (1) question.**

**15 marks**

20. There are many types of contracts that are used for general construction work, name and define six (6) types of them. **(15 marks)**
21. Enumerate and clearly describe five (5) types of estimate. **(15 marks)**
22. Prepare an approximate estimate of building project if total plinth area of all building is 800 sqm. And from following data:
- i) Plinth area rate 45000 FRW per sqm
  - ii) Cost of water supply at  $7\frac{1}{2}\%$  of cost of building.
  - iii) Cost of Sanitary and Electrical installations each at  $7\frac{1}{2}\%$  of cost of building.
  - iv) Cost of architectural features at 1% of building cost.
  - v) Cost of roads and lawns 5% of building cost.
  - vi) Cost of contingencies 4% of building cost.
- Determine the total cost of building project. **(15 marks)**

