

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. *137 274* **(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. **(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.

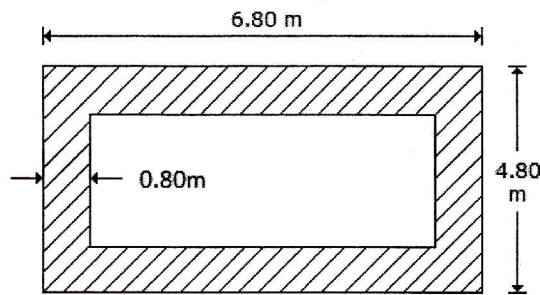
30 marks

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	m ²
2.	Doors and windows fittings	number
3.	Painting	m ²
4.	Reinforced brick work	m ³
5.	Water supply and sanitary arrangement	m ³
6.	Plastering	m ²
7.	Stone masonry	m ³
8.	Earthwork in foundation filling	m ³
9.	Shutters of doors	m ²
10.	Thin partition wall	m ²

19. An arch of 2.5 m span subtends an angle of 80° 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

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- 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 7½% of cost of building.
 - iii) Cost of Sanitary and Electrical installations each at 7½% 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)**