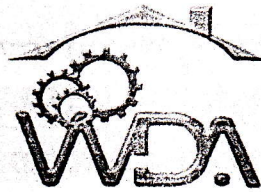


**CST - Domestic Electricity
and Plumbing**

T029

**Thursday, 07/11/2013
8:30 - 11:30 AM**

WORKFORCE DEVELOPMENT AUTHORITY



P.O. BOX 2707 Kigali, Rwanda Tel: (+250) 255113365

**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2013,
TECHNICAL AND PROFESSIONAL TRADES**

EXAM TITLE: Domestic Electricity and Plumbing

OPTION: Construction (CST)

DURATION: 3hours

INSTRUCTIONS:

The paper contains **three (3)** parts:

Part I: Fifteen (15) questions, **all Compulsory;** **55marks**

Part II: Five (5) Questions, **choose any three (3);** **30marks**

Part III: Three (3) Questions, **choose any one (1);** **15marks**

The use of calculator is not necessary

Culture: is the something which present in country how the activity of your people's of country are practice in our days life.

Museum of Culture of Rwanda (BUTARE in MUKURAZI) - museum of Rwanda
Museum of memory of genocide (Kigali city in Rwanda) - animals (activity in museum)

Part I: Attempt all the 15 Questions (compulsory) 55marks

01. a) Calculate the change in length (in inches) of 350-ft steel pipe that will be exposed to the temperature ranging from 55 to 200°F. The coefficient of linear expansion to be considered for steel is 0.0000065 per °F. 4marks

b) Calculate the change in length of a 120m steel pipe that will be exposed to temperature ranging from 12 to 950°C if linear expansion is 0.0000117 per °C. 4marks

02. What are the aims of house drainage? 5marks

03. What is :
a) a plumbing water supply system? 2marks
b) a plumbing drainage system? 2marks

04. Galvanized pipe is generally required in water supply and drainage piping. Give all uses of galvanized pipes in plumbing. 4marks

05. What skill interests and values that a skilled plumber needs? 9marks

06. In electricity, matter can be broken down into which groups? Explain. 6marks

07. Give the Ohm's law. 4marks

08. What is the resistance of a lamp which draws 120mA when connected to a 12.6V battery? 3marks

09. Calculate the power if E=50V and R=135 ohms. 4marks

10. What kind of injuries results from electrical current? 4marks

11. What instrument do we use in measuring electrical current? 2marks

12. What is the formula used for calculating a combined resistance of 3 resistances R₁, R₂ and R₃ are in parallel? 3marks

2/5/

- * Dancing and singing.
- * Poems
- * Artister
- * Artisan

13. What happens if the above three (3) resistances (in question 12) are in series? 1mark
14. Why can we say that the flow of charge in a conductor is often compared with the flow of water in a water pipe? 0.5mark
15. What is the smallest unit of electrical current? 0.5marks

Part II: Choose and Answer any three questions 10marks

16. In a house drainage system, give different designations of pipes and their sizes, depending upon the function they carry. 10marks
17. Give the principles of house drainage. 10marks
18. a) What are the most important plumbing tools to keep at home? Explain the reason.
- b) My water bill is unusually high, what should I do? 10marks
19. What is a sample checklist for basic electrical safety? 10marks
20. What are the tips for working with power cards? 10marks

Part II: Choose and Answer any One (1) question. 15marks

21. What are the general safety tips for working with or near electricity? 15marks
22. What are the tips for working with power tools? 15marks
23. Among common plumbing problems, we have common toilet problems. Enumerate them, symptoms for each and plumbing diagnosis. 15marks

Common sense & common ml for plumber

10
11
12

13. What is the principle of operation of a transformer?

14. In a transformer, what is the relationship between the number of turns in the primary and secondary windings and the voltage ratio?

15. What is the main purpose of a transformer?

16. What is the relationship between the power input and power output of a transformer?

17. What is the relationship between the current in the primary and secondary windings of a transformer?

18. What is the relationship between the impedance of the primary and secondary windings of a transformer?

19. What is the relationship between the efficiency of a transformer and the core losses?