

**CST - Domestic Electricity
and Plumbing**

T029

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

WORKFORCE DEVELOPMENT AUTHORITY



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**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

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? **1mark**
- 12.** What is the formula used for calculating a combined resistance if 3 resistances R_1 , R_2 and R_3 are in parallel? **1mark**

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 toilets problems. Enumerate them, symptoms for each and plumbing diagnosis. **15marks**