

**CST - Construction Technology  
and R.C.C**

**T021**

**Friday, 01/11/2013  
8:30 - 11:30 AM**

**WORKFORCE DEVELOPMENT AUTHORITY**



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

**EXAM TITLE: Construction Technology and R.C.C**

**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.** Give qualities that indicate the usefulness of aggregate particles to the construction industry. **7marks**
- 02.** Give four (4) basic chemicals compounds which compose Portland cements. **4marks**
- 03.** Compressive strength is a very important property of hardened concrete.  
a) What do you understand by Compressive strength?  
b) Calculate Compressive strength if the cylinder diameter is 6 inch and load at failure is 115,000 lb. **4marks**
- 04.** What do you understand by "setting out "in construction project? How do we do it? Give all steps that should be followed. **4marks**
- 05.** Give three (3) examples of deep foundation. **3marks**
- 06.** What is the function of walls? **4marks**
- 07.** Enumerate all basic materials used in construction project. **5marks**
- 08.** Give at least five (5) main functions that all primary construction materials must perform. **5marks**
- 09.** In which types the reinforced concrete floors can be classified? **5marks**
- 10.** Give (in details) the classification of stairs. **3marks**
- 11.** Give the formula (rule) used when determining rise and going of stairs. **2marks**
- 12.** Cements may be classified into five (5) groups. Enumerate them. **5marks**
- 13.** What do you understand by "concrete masonry"? **1mark**
- 14.** Give the two (2) essential components of bricks masonry. **2marks**
- 15.** What do you understand by "mortar"? **1mark**

**Part II: Choose and Answer any three questions 30marks**

- 16.** What are the most important properties to be considered in selecting aggregate for a particular application? **10marks**
- 17.** a) Enumerate all important properties of concrete which govern the design of a concrete mix. **4marks**  
b) Disintegration and decay of concrete may be due to which reasons? **5marks**

- c) The water required for chemical reactions in concrete is about which percentage of weight of cement? **1mark**
- 18.** Find the number of clays bricks required for a wall of height 10 ft and length 25 foot. Use modular bricks of size 4\*2.66\*8 in. (Provide 5% allowance for wastage). **10marks**
- 19.** a) Give at least 6 important properties of concrete. **6marks**  
b) What is the purpose of using reinforced steel in concrete? **4marks**
- 20.** a) How do we prepare a surface in masonry to be painted? **4marks**  
b) Draw a section of a reinforced rectangular concrete beam (show stresses elastic and section uncracked at very small loads). **6marks**

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

- 21.** Give all points that should be kept in mind while supervising the stone masonry work. **15marks**
- 22.** Enumerate at least 15 tools that are used for stone masonry dressing. **15marks**
- 23.** Give all precautions that should be taken while supervising a brick masonry construction. **15marks**