

**CST – Construction Surveying and  
Site Management**

**T015**

**Wednesday, 16/11/2015  
08:30 – 11:30**

WORKFORCE DEVELOPMENT AUTHORITY



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**ADVANCED LEVEL NATIONAL EXAMINATIONS, 2016,  
TECHNICAL AND PROFESSIONAL STUDIES**

**EXAM TITLE: Construction Surveying and Site Management**

**OPTION: Construction (CST)**

**DURATION: 3hours**

**INSTRUCTIONS:**

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

**Section I: Ten (10) 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**

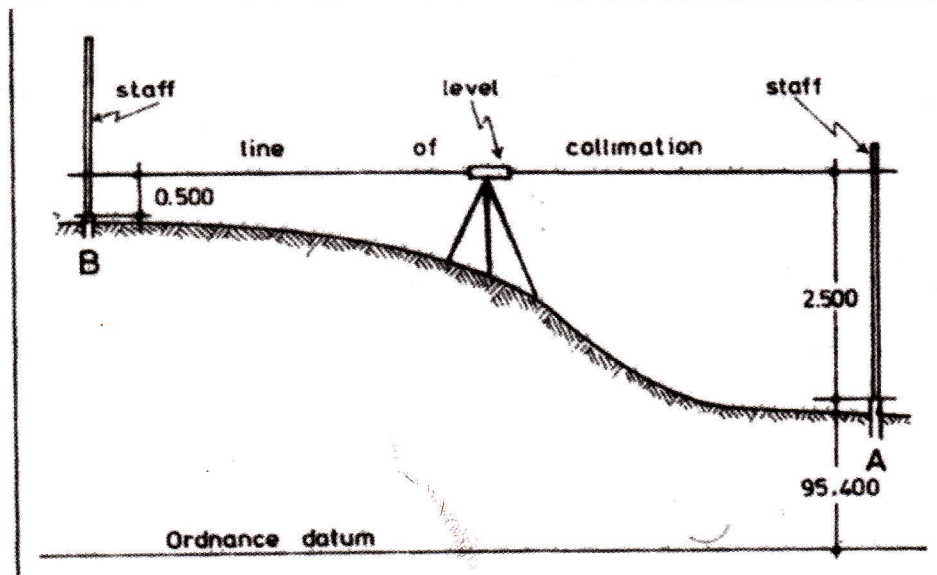
**Note:**

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

**Section I. Ten (10) Compulsory questions**

**55marks**

- 01. List any five protective clothing used in a Construction building site. **5marks**
- 02. If a worker suffers from an electric shock on a building site, write any five important steps which can be followed to help him. **5marks**
- 03. Mention any four possible contents of a First aid box in a construction site. **4marks**
- 04. Highlight at least SIX things which are included in a completed site survey drawing (map). **6marks**
- 05. Give a brief meaning of the following terms used in surveying:
  - i) Datum level mark      iii) Building line
  - ii) Spot levels            iv) Contours**6marks**
- 06. Describe clearly any SIX steps of setting out a rectangular building. **9marks**
- 07. (a) Mention the two Primary Classifications of Surveying. **2marks**  
(b) Describe briefly each of the classes of surveying in question above. **4marks**
- 08. Explain the simple meaning of the following terms as used in surveying:
  - a) Chain surveying                      d) Tacheometry
  - b) Traverse surveying                    e) Engineering surveying
  - c) Levelling**10marks**
- 09. The figure hereafter shows the leveling of a peg A situated beside a manhole cover at the bottom of a slope and peg B on top of the slope, the reduced level of Peg A is 95.400m above ordinance datum (AOD). Record this information in field book and calculate the Reduced level of Peg B.



**4marks**

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

**30marks**

**10.** Discuss on the technical terms below used in construction surveying:

- |                          |                     |            |
|--------------------------|---------------------|------------|
| a) Differential leveling | e) Surveying datum  | i) A run   |
| b) Precise leveling.     | f) An assumed datum | j) A close |
| c) A level surface.      | g) A reduced level  |            |
| d) A level datum         | h) A bench mark     |            |

**10marks**

**11.** Describe ten (10) precautions to take while handling a level.

**10marks**

**12.** If the reduced level of Bench Mark A is 50.000 m, the Reading on staff held at A is 2.435 m; the Reading on staff held at station point B is 1.650 m.

Find:

- Height of collimation.
- Reduced level of station point B.
- Rise/fall of B with respect to A.

**10marks**

**13.** With full description, talk on five comparisons between *height of collimation method* and *rise and fall method*.

**10marks**

**14.** Explain with clear and complete descriptions any five sources of errors in leveling.

**10marks**

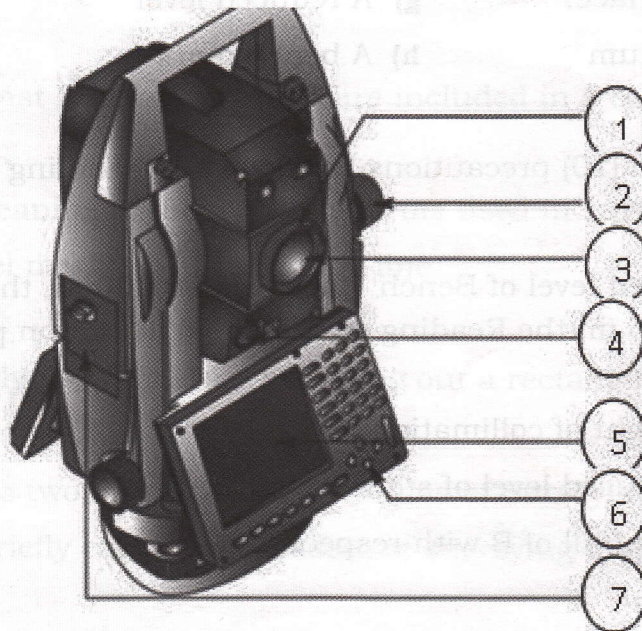


**Section III. Choose and answer any one (1) question.**

**15marks**

**15.** Briefly discuss on the level's accuracy checking method. Use the sketch for more clarification.

**16.** Name the parts of a digital Theodolite below:



**17.** Shortly describe the FIVE important features of a total station as favorite equipment than level and Theodolite due to various reasons.