ADVANCED LEVEL NATIONAL EXAMINATIONS, 2016, TECHNICAL AND PROFESSIONAL STUDIES

EXAM TITLE: Construction Surveying and Site Management

OPTION: Construction (CST)

DURATION: 3 hours

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

01. List any five protective clothing used in a Construction building site.  
5 marks

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.  
5 marks

03. Mention any four possible contents of a First aid box in a construction site.  
4 marks

04. Highlight at least SIX things which are included in a completed site survey drawing (map).  
6 marks

05. Give a brief meaning of the following terms used in surveying:  
i) Datum level mark
ii) Spot levels
iii) Building line
iv) Contours  
6 marks

06. Describe clearly any SIX steps of setting out a rectangular building.  
9 marks

07. (a) Mention the two Primary Classifications of Surveying.  
2 marks
(b) Describe briefly each of the classes of surveying in question above.  
4 marks

08. Explain the simple meaning of the following terms as used in surveying:  
a) Chain surveying
b) Traverse surveying
c) Levelling
d) Tacheometry
e) Engineering surveying  
10 marks

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.

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

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

   a) Differential leveling  e) Surveying datum
   b) Precise leveling.    f) An assumed datum
   c) A level surface.     g) A reduced level
   d) A level datum        h) A bench mark

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

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:
   a) Height of collimation.
   b) Reduced level of station point B.
   c) Rise/fall of B with respect to A.

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

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