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Reg. No. : .....

Name : .....

Combined First and Second Semester B.Tech. Degree Examination, December 2015
(2013 Scheme)
13.106 : BASIC CIVIL ENGINEERING (ABEFHMNPRSTU)

Time : 3 Hours Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. What is Total Station ?
2. List out the difference between combined footing and Mat foundation.
3. What are the desirable qualities of fine and coarse aggregate used for concreting ?
4. What is green house effect ?
5. Explain briefly the materials used for partition. **(5×4=20 Marks)**

PART – B

Answer **one full** question from **each** module.

Module – I

6. a) Write in details the various tape corrections. 10

   b) A nominal distance of 20 m was set out with a 20 m steel tape from a mark on the top of one peg to a mark on the top of another, the tape being in catenary under a pull of 10 kg and at a mean temperature of 70°F. The top of one peg was 0.25 m below the top of the other. The top of the higher peg was 460 m above mean sea level. Calculate the exact horizontal distance between the

marks on the two pegs and reduce it to mean sea level, if the tape was standardised at a temperature of 60°F in catenary, under a pull of :

a) .8 kg

b) 12 kg

c) 10 kg.

Take : Radius of earth = 6370 km

Density of tape = 7.86 g/cm^3

Section of tape = 0.08 cm^2

Coeff. of expansion = 6×10^{-6}/°F

Young's modulus = 2×10^6 kg/cm^2 10

OR

7. a) Explain the various adjustment's of a dumpy level. 7

b) The following consecutive readings were taken with a level and 3 m levelling staff on continuously sloping ground at a common interval of 20 m.

0.602, 1.234, 1.860, 2.574, 0.238, 0.914, 1.936, 2.872, 0.568, 1.824, 2.722. The reduced level of the first point was 192.122. Rule out a page of a level field book and enter the above readings. Calculate the reduced levels of the points and also the gradient of the line joining the first and the last points. 13

Module – II

8. a) What are the desirable qualities of stone and brick used for building construction ? 8

b) With neat sketches explain the various types of brick masonry. Distinguish between English and Flemish bond. 12

OR

9. Explain in details the various component's of a building structure and its function. Also mention the suitable material for each component according to your view point. 20

Module – III

10. a) Explain the different types of steel used for construction their properties and uses. 12

    b) What are the advantages of RCC over PCC. 8

OR

11. a) How will you conduct the compressive strength of concrete as per IS specifications ? 6

    b) Explain the ingredients of concrete and the process of manufacturing. 14

Module – IV

12. Explain in detail the causes of air pollution, its effects on environment and the air quality standards. 20

OR

13. Explain in detail the global environmental issues. 20