CIV103

USN | | | | | | | | | | |

First Semester B.E Degree Examination, July/August 2004

Common to all Branches

(Old Scheme)

Elements of Civil Engineering

Time: 3 hrs.] [Max.Marks : 100

Note: *(1) Answer any EIGHT full questions from question No 1 to 12 and SIX questions from question No. 13 to 21.*
(2) Missing data if any may be suitably assumed.

1. Explain the different types of defects in timber. **(5 Marks)**

2. List the ingredients of Portland Cement. **(5 Marks)**

3. What are the requirements of good building stone? **(5 Marks)**

4. State the advantages of plastic. **(5 Marks)**

5. Explain the principle of transmissibility with neat figure. **(5 Marks)**

6. Distinguish between plywood and laminates. **(5 Marks)**

7. Explain cross product and dot product, with relevant examples. **(5 Marks)**

8. State and explain D'Alembert's principle. **(5 Marks)**

9. Using first principle, locate the centroid of a semi circle. **(5 Marks)**

10. State the uses of aluminium. **(5 Marks)**

11. What is workability of concrete and how is it measured? **(5 Marks)**

12. Show that a force can be resolved into a force and a couple. **(5 Marks)**

13. (a) Explain different types of timber generally adopted in construction. **(5 Marks)**

(b) An electric fixture weighing 20N hangs from point C by two strings AC and BC. AC is inclined to horizontal by 70^0 and BC at 30^0 to vertical as shown in figure 1. Find the force in AC and BC by vector approach. **(5 Marks)**

14. (a) List the different types of flooring adopted in construction. **(4 Marks)**

(b) The three like parallel forces $100N$, F and $300N$ are acting as shown in figure 2. If the resultant $R = 600N$ and is acting at C at a distance of $450mm$ from A, then find the magnitude of force F and the distance x from A, by using vector approach. **(6 Marks)**

15. (a) State and prove Varignon's theorem. **(5 Marks)**

(b) State and prove parallel axis theorem. **(5 Marks)**

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