No. of Printed Pages : 4

BET-015

DIPLOMA IN CIVIL ENGINEERING (DCLE(G)) / ADVANCED LEVEL CERTIFICATE COURSE IN CIVIL ENGINEERING (DCLEVI / ACCLEVI)

Term-End Examination

June, 2017

00905

BET-015 : ENGINEERING MATERIALS

Time : 2 hours *Maximum Marks : 70*

Note : *Question number **1** is **compulsory**. Attempt any **four** more questions out of questions no. 2 to 8. All questions carry equal marks.*

1. Choose the most appropriate answer from the alternatives given below : *7×2=14*

(a) Which of the following is a rock ?

(i) Quartz

(ii) Mica

(iii) Gypsum

(iv) None of the above

(b) A jumper is a tool used for

(i) testing of stones

(ii) quarrying of stones

(iii) dressing of stones

(iv) None of the above

(c) The moisture content in a well seasoned timber is

(i) 4% to 6%

(ii) 10% to 12%

(iii) 15% to 20%

(iv) 100%

(d) First class timber has an average life of

(i) less than one year

(ii) 1 to 5 years

(iii) 5 to 10 years

(iv) more than 10 years

(e) The initial setting time for ordinary portland cement as per IS specifications should ***not*** be less than

(i) 10 minutes

(ii) 30 minutes

(iii) 60 minutes

(iv) 600 minutes

(f) Which of the following gradients exerts maximum influence on properties of steel ?

(i) Iron

(ii) Carbon

(iii) Manganese

(iv) Sulphur

(g) The proportion of lime and sand in mortar normally used in brick construction is

(i) 1 : 2

(ii) 1 : 4

(iii) 1 : 6

(iv) 1 : 8

2. Explain the characteristics of good building stones. Enumerate the tests which can be carried out on stones and explain one of them. *14*

3. (a) Discuss the harmful ingredients of brick earth, that render the resulting brick unsuitable for any safe construction. *7*

(b) Enlist the tests for clay bricks and explain any one of them. *7*

4. Explain the field tests and laboratory tests of cement with required equations and a neat sketch, if required. *14*

5. Describe the various steps of manufacture of concrete in detail. *14*

6. Draw a neat sketch of cross-section of an exogenous tree. Explain parts of the cross-section in brief. *14*

7. Write the functions of paint. Discuss the constituents of an oil paint in detail. *14*

8. Write short notes on the following : $4 \times 3\frac{1}{2} = 14$

(a) Polymer Impregnated Concrete (PIC)

(b) Float Glass

(c) Process of Distempering

(d) Grades of Concrete