

**Diploma in Civil Engineering / Diploma
in Electrical & Mechanical Engineering**

03464

Term-End Examination

June, 2011

BET-015 : ENGINEERING MATERIALS

Time : 2 hours

Maximum Marks : 70

Note : Question number 1 is compulsory. Attempt any four more questions from the remaining questions. All questions carry equal marks.

1. Choose the correct alternatives. **7×2=14**
- (a) The size of modular brick is :
- (i) $22.5 \times 8.0 \times 9$ cm
 - (ii) $22.5 \times 10 \times 8.5$ cm
 - (iii) $19 \times 9 \times 9$ cm
 - (iv) $10 \times 10 \times 9$ cm
- (b) The rocks which are formed by gradual deposition are :
- (i) Metamorphic rock
 - (ii) Igneous rocks
 - (iii) Sedimentary rocks
 - (iv) None of these

- (c) The steel used in R.C.C. work is :
- (i) Stainless steel
 - (ii) Mild steel
 - (iii) Iron
 - (iv) High carbon steel
- (d) Initial setting time of cement is caused due to :
- (i) Tetra calcium alumino ferrite
 - (ii) Tri calcium aluminate
 - (iii) Di - calcium silicate
 - (iv) Tri calcium silicate
- (e) Ground glass :
- (i) is made by grinding its one side
 - (ii) is made by melting powdered glass paints on its surfaces
 - (iii) is used getting light without transparency
 - (iv) All the above
- (f) The property by virtue of which lime sets under water is known as :
- (i) Slacking
 - (ii) Setting
 - (iii) Hydraulicity
 - (iv) Calcining
- (g) Ultimate strength to cement is provided by :
- (i) Tri - calcium silicate
 - (ii) Di - calcium silicate
 - (iii) Tri - calcium aluminate
 - (iv) Tetra calcium aluminoferrite

2. (a) Write down the properties of cement concrete in detail. 7
(b) Describe in detail special varieties of glass. 7
3. (a) Write down in detail the market form of the steel. 7
(b) Describe in detail the types of glass with the air properties and uses. 7
4. (a) Describe the functions of sand in mortar and the tests carried out on sand. 7
(b) Write down in tabular form the Recommended mixes of concrete. 7
5. (a) Describe the constituent parts of paint and their functions. 7
(b) Give the criteria for the suitability of stones for various types of construction. 7
6. (a) Describe the tests for the acceptance of bricks for building construction. 7
(b) Write down the characteristics of good timber. 7
7. Write down short notes on the following : $4 \times 3\frac{1}{2} = 14$
(a) Uses of steel in construction work.
(b) List of acoustics material.
(c) Slump test of concrete.
(d) Composition of plastics.
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