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BCE-025

DIPLOMA IN MECHANICAL ENGINEERING (DME)

00716

Term-End Examination

June, 2014

BCE-025 : ELEMENTARY CIVIL ENGINEERING

Time : 2 hours *Maximum Marks : 70*

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

1. Choose the correct alternatives : *7×2=14*

(a) The minimum depth of a foundation can be calculated by the following formula

(i) $\frac{p}{w}\left(\frac{1+\sin\phi}{1-\sin\phi}\right)$

(ii) $\frac{p}{w}\left(\frac{1-\sin\phi}{1+\sin\phi}\right)$

(iii) $\frac{p}{w}\left(\frac{1+\sin\phi}{1-\sin\phi}\right)^2$

(iv) $\frac{p}{w}\left(\frac{1-\sin\phi}{1+\sin\phi}\right)^2$

(b) All stones should be laid

(i) on their natural bed

(ii) at 45°

(iii) at 90°

(iv) at 180°

(c) M25 concrete is judged by the strength criterion of

(i) 25 N/m^2

(ii) 25 N/mm^2

(iii) 25 N/cm^2

(iv) 25 kN/m^2

(d) The size of a normal fillet weld is the

(i) throat thickness

(ii) thickness of thinner plate

(iii) minimum leg length

(iv) thickness of thicker plate

(e) Vertical faces of a window or door opening which supports the frame is

(i) jamb

(ii) reveal

(iii) transom

(iv) threshold

(f) The flooring commonly used in hilly areas consists of

(i) brick

(ii) timber

(iii) glass

(iv) tile

(g) Runway is usually oriented in the direction of

(i) take off

(ii) take on

(iii) prevailing wind

(iv) None of the above

2. (a) Describe the various types of buildings as per NBC of India, 1970. 7

(b) Explain the various gauges used in Indian railways. Also write the distance between the inner faces of the rails. 7

3. (a) Explain the various purposes served by foundation in a structure. 7

(b) Describe different methods of soil classification. 7

4. (a) What do you understand by stone masonry ? Explain safe permissible loads on stone masonry. 7

(b) Discuss the various measures adopted to prevent entry of dampness in a building. 7

5. (a) Discuss the various factors on which strength and durability of concrete depends. 7

(b) Explain the various concreting operations with the help of process diagram. 7

6. (a) Define built-up connection. Draw two diagrams of built-up connection. 7

(b) Describe the design of doors in a room. 7

7. (a) Explain in brief the various types of plastering. 7

(b) Describe the classification of roads based on location. 7

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

(a) Basic parts of a building

(b) Curing of concrete

(c) Airport Layouts

(d) Window movement