

Diploma in Civil Engineering

Term-End Examination

June, 2012

BCE-036 : SOIL, ROADS AND AIRFIELDS

00835

Time : 2 Hours

Maximum Marks : 70

Note : Attempt five questions in all. Q.No. 1 is compulsory.

1. (a) Fill in the blanks : 2x5=10

(i) Optimum Moisture content decreases due to _____ in compaction.

(ii) Shrinkage limit is low if the _____ in volume of soil is _____.

(iii) Payload in load from _____ generated by charging the consignment being taken by aircraft.

(iv) At _____ moisture content's the _____ of soil corresponds to stiff.

(v) _____ are small exposed cavities in concrete due to _____ of some foreign materials.

(b) Define or explain *any four* of the following : 3x4=12

- (i) Aileron
- (ii) Prime Coat
- (iii) Crazing
- (iv) Expressways
- (v) Plasticity Index
- (vi) Consolidation

2. (a) What do you understand by Bituminous Concrete ? How is it affected by fuel spillage ? 6+6=12

(b) Explain the effects of Jet blast and safety precautions to be taken against the same.

3. Explain various geometric elements required for Airports with different types of Airport classification. 6+6=12

4. Explain the purpose of the following at an Airport with example : 2x6=12

- (a) Terminal Building
- (b) Hangers
- (c) Hardstanding
- (d) Taxiways
- (e) ATC
- (f) Aerobridge.

5. (a) Explain any two methods used for stabilization of Black Cotton soil . **6+6=12**
- (b) What do you understand by Primary and Secondary settlement of soils ? Explain with neat curve diagram.
6. The void ratio of sand sample is 1-5. Assuming a specific gravity of 2.68. Compute porosity, dry unit weight and 80% saturation unit weight. Unit weight of water may be taken as 9.81 kN/m^3 . **4+4+4=12**
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