M.Tech(CE) 2nd Semester Examination
June 2014
Pavement Analysis And Design
Subject Code: CEL-504

Time Allowed: 03 hours.          Maximum Marks: 100

Before answering the question paper the candidate should ensure that they have been supplied the correct question paper. Complaints in this regard, if any, shall not be entertained after the examination.

Note: First question is compulsory. Attempt two questions from each section A and B.

Q.1) [4x5=20]

a) Define flexible pavement. Draw a cross-section of a typical bituminous pavement.
b) Discuss the stresses occurred in concrete pavement. Draw the various component.
c) Discuss the process of construction of concrete pavement.
d) What do you understand by quality control in any construction work of pavement? Discuss various quality control issues.

SECTION A

Q.2(a) Differentiate federal aviation administration (FAA) method and the asphalt institute method. [10]

(b) Write short notes on concrete pavement design methods. [10]

Q.3(a) Why maintenance of concrete pavement is necessary? How you will suggest for the maintenance of concrete pavement? [10]

Q.4 (a) Discuss the basic term related to concrete pavement mentioned below:- [10]

(i) Joint seal failure     (ii) Loss of support
(iii) Partial Depth Cracking    (iv) Full depth cracking

(b) Write short notes on the following:- [10]

(i) Unpaved Shoulder     (ii) Paved shoulder
(iii) Concrete Shoulder  (iv) Bituminous Shoulder

SECTION B

Q.5(a) Discuss the various quality control tests for pavement materials related to concrete pavement. [10]

(b) Draw the cross section detail of concrete and bituminous pavement. What is the basic difference between these two type of pavement? [10]

Q.6 What do you understand by bituminous recycling? Discuss the major technologies exist for bituminous pavement recycling? [20]

Q.7(a) Write short notes n the following:- [10]

(i) Texturing      (ii) Concrete Curing

(b) Define static analysis. Discuss with neat sketch showing the relationship between subgrade density and test number and also between the frequency versus compressive strength of concrete. [10]