

Wednesday, March 30, 2011

Time Limit: 90 Minutes

Instructor: Dr. Wa'el M. Albawwab



University of Palestine

College of Applied Engineering
& Urban Planning

ECGD4228 Transportation Engineering II

Open Book Mid Term Exam

Answer All Questions

Q1- Derive a mathematical expression relating the total elevation at a corresponding horizontal distance from the beginning of the vertical curve to the vertical distance from the initial tangent to the vertical alignment curve line. **(2 Marks)**

Q2- Give a description for the following:

- Tack Coats **(2 Marks)**
- Prime Coats **(2 Marks)**
- Cutbacks **(2 Marks)**

Q3-

- Define the function of the highway curbs and shoulders **(2 Marks)**
- Compare between the intersections and interchanges **(2 Marks)**
- Explain the aging effects on the HMAC materials **(2 Marks)**

Q4- There is a high risk on a level major highway that a sudden obstacle becomes visible to a driver at a distance of 170 ft. Assume a perception reaction time of 1 second, a design speed of 45 mph, and a friction factor of 0.5 to determine:

- The risk of accidents **(2 Marks)**
- The accident impact velocity **(2 Marks)**
- The suitable design speed **(2 Marks)**