Benha University Second Year Surveying

Shoubra Faculty of Engineering Design of Roads and Railways

Surveying Department 2nd semester2013/2014

***Assignment ( 1 )***

1. Write short notes on:
* Types of the resistances applied on the vehicle during its motion.
* Design elements of highway
* Average Annual Daily Traffic
* The traffic composition
* Traffic capacity

1. A truck of 80 ton weight is moving on dry and well packed gravel road. The truck has a motor 160 H.P and a frontal area of 6.8 m2. What acceleration can the driver attain if he is climbing a 3% grade with a speed of 64.4 km/hrs.
2. A truck of 50ton moves with 30 m.p.h. over a hard earth road with down grade 3.5%. The truck motor has a horse power of 120 H.P and frontal area 40 ft2. What acceleration can be obtained if the efficiency of the motor is 80%.
3. A truck of 100 ton weight and a frontal area of 3.9 m2 is moving on a badly broken asphalt road of a slope 4% in an upside motion. If the truck moves with a speed of 48.3 km/hr, the horse power of the motor is 140 and with acceleration of -0.8 m/sec2. What is the efficiency of the motor?.
4. A truck of 60 ton weight is moving on losse sand road if the truck has a motor of 110 H.P. and a frontal area of 6.4 m2. What acceleration can the driver attain if the truck moves upward grade of 4.2 % with a speed of 32.1 km/hr.