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BICEE-023

B.TECH. CIVIL ENGINEERING (BTCLEVI)

Term-End Examination

June, 2013

BICEE-023 : TRAFFIC ENGINEERING

Time : 3 hours *Maximum Marks : 70*

*Note : Attempt **any five** questions. All questions carry **equal** marks. Scientific calculator is **permitted.***

1. (a) Define the Traffic Engineering. What are the scopes of traffic engineering ? Explain briefly. 7

   (b) Discuss the various factors which affect the road user characteristics and their effects in traffic performance. 7

2. (a) What are the various applications of O and D studies ? 4

   (b) Discuss any two methods for collecting the O and D data. 10

3. (a) What are the different causes of traffic accidents ? 4

   (b) Explain in detail various measures to prevent accidents. 10

4. (a) Discuss the common types of pavement markings with their uses. 7

(b) "By introducing channelizing islands both the major and minor conflict are reduced" comment with required neat sketch. 7

5. What is a traffic rotary ? What are its advantages and limitations ? Explain briefly the various design factors that are to be considered in rotary intersection design. 14

6. (a) Calculate the spacing between lighting units to produce average Lux = 6.0 for following conditions. 10

(i) Street lighting system with street width - 15 m

(ii) Mounting height - 7.5 m

(iii) Lamp size - 6000 lumen

(iv) Luminaire type - II

(v) Coefficient of utilization for ratio value 2 is 0.44

Maintenance factor = 0.8

(b) Write the factors to be considered for the design of road lighting. 4

7. Two vehicles A and B approaching at right angles, A from West and B from South, collide with each other. After the collision, vehicle A skids in a direction 50° North of West and vehicle B, 60° East of North. The initial skid distances of the vehicles 14

A and B are 38 and 20 m respectively before collision. The skid distances after collision are 15 and 36 m respectively. If the weights of vehicle B and A are 6.0 and 4.4 tonnes, calculate the original speeds of the vehicles. The average skid resistance of the pavement is found to be 0.55.

8. Write short note on **any four** of the following : 3.5x4=14

(a) PCU

(b) Informatory signs

(c) Grade separation

(d) Kerb parking

(e) Traffic flow at intersection

(f) Practical capacity