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B.Tech. 5th Semester (Civil Engg.) Examination,
December-2015

TRANSPORTATION ENGG-I

Paper-CE-303-F

Time allowed : 3 hours] [Maximum marks : 100

- Note :*
- *Q. No. 1 is compulsory.*
 - *Each question carries equal marks (20 marks)*
 - *Students have to attempt **five** questions in total at least **one** question from each section.*
 - *Assume suitable data if missing.*

1. Write short notes on the following : 2.5×8=20
- (a) Roman Roads
 - (b) Perception Time
 - (c) Cant deficiency
 - (d) PCU value
 - (e) Toughness of aggregate
 - (f) Coning of wheel
 - (g) Rail joint
 - (h) Ballast

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Section-A

2. (a) What factors are considered in finalizing 20-year (1981-2001) plan ? 10
- (b) What is Map study ? Explain. 10
3. (a) Find the stopping sight distance for a design speed of 55 kmph. Assume suitable data. What are sight distance requirements at a gradient of 1 in 30. Assume suitable data. 10
- (b) Explain superelevation. What are the factors on which the design of superelevation depends ? 10

Section-B

4. (a) What are the objects of providing transition curve on the horizontal alignment highways ? Explain. 10
- (b) Explain the level of service concept while deciding the design capacity of a road. 10
5. (a) Discuss the desirable properties of Aggregates in detail. 10
- (b) List different types of cutbacks. When are these used ? 10

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Section-C

6. (a) What do you mean by permanent way ? What are its components ? 10
- (b) Explain relaying of track in detail. 10
7. State reason for the following :
- (a) Broken stone ballast is best
- (b) Gravel should be screened before it is used on a railway track.
- (c) Ballast must be provided on a railway track.
- (d) Ballast is not spread over the sleeper. $4 \times 5 = 20$

Section-D

8. Write down short notes on : $4 \times 5 = 20$
- (a) Ruling Gradient
- (b) Junction
- (c) Marshalling Yards
- (d) Semaphore Signals.
9. (a) State the requirement of tunnels. 10
- (b) What factors decide the method to be adopted for tunneling ? 10

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