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Total No. of Pages : 02

Total No. of Questions : 18

B.Tech. (Civil Engg.) (2012 to 2017) (Sem.-5)

**TRANSPORTATION ENGINEERING-I**

Subject Code : BTCE-504

M.Code : 70515

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTIONS TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.
4. Assume any missing data.

**SECTION-A****Answer briefly :**

1. What are the different modes of transportation?
2. What are the two ill effects of increase in traffic?
3. If for some reason the required minimum OSD cannot be provided on a highway for the design speed, what precautions should be taken alternatively to minimize accident hazard?
4. Why markings are provided on the roads?
5. Draw Block Pattern of Roads.
6. Explain PIEV Theory.
7. What do you mean by traffic islands?
8. What do you mean by sub surface drainage?
9. Write the difference between flexible and rigid pavements.
10. List various types of traffic islands.

### SECTION-B

11. What are the various objectives of preliminary survey for highway alignment? Enumerate the details to be collected.
12. What is “Road Development Plan: Vision 2021”?
13. Draw collision diagram, showing all symbols in it.
14. Derive an expression for calculating OSD on highway. What do you understand by overtaking zones? What are IRC standards for the same?
15. How spot speed data and their results are presented?

### SECTION-C

16. Find the total width of pavement on a horizontal curve for a two lane national highway to be aligned along a plain terrain with a minimum radius considering ruling design speed 80kmph, wheel base of vehicle 6m and assume missing data suitably.
17. How we can evaluate the pavements? What are the different failures and strengthening measures of flexible pavements?
18. Write down the scope of tests to be carried out on bitumen. Explain any two tests to be conducted on bitumen in detail.

**NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.**