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ET-505

**B.Tech. Civil (Construction Management)/
B.Tech. Civil (Water Resources Engineering)**

Term-End Examination

December, 2018

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**ET-505 : TRANSPORTATION AND TRAFFIC
ENGINEERING**

Time : 3 hours

Maximum Marks : 70

Note : Attempt *all* questions. All questions carry equal marks. Use of scientific calculator is permitted.

1. Answer any *two* of the following questions : $2 \times 5 = 10$
- (a) What are the objectives of Indian Road Congress ?
- (b) Write briefly about Highway Classification based on Lucknow Plan.
- (c) Discuss the economic evaluation of transport projects.

2. Answer any *two* of the following questions : $2 \times 5 = 10$

- (a) A vehicle travelling downhill with a gradient of 5% at a speed of 40 km/hr is suddenly brought to a halt by braking. Assuming that the co-efficient of friction mobilised is 0.6, calculate the braking distance.
- (b) Discuss briefly on "Plate Bearing Test" with a sketch.
- (c) What are the requirements of good mix-design of concrete for road pavement ?

3. Answer any *two* of the following questions : $2 \times 5 = 10$

- (a) What are the considerations in the design of road embankment ? What factors govern the selection of its soil ?
- (b) Write briefly on 'Built Up Spray Grout' (BUSG).
- (c) What are the broad features of IRC method of flexible pavement design ?

4. Answer any *two* of the following questions : $2 \times 5 = 10$

- (a) The distance between points X and Y in a city is 16.2 km. A vehicle takes 66 minutes for the journey out of which, time spent on 5 signals is 1.50, 2.00, 0.50, 2.50 and 3.00 minutes. Calculate the journey speed and running speed.
- (b) Explain 'on street' parking with illustration.
- (c) What are the aspects covered by The Motor Vehicles Act, 1988 ? Explain traffic rules.

5. Answer any *two* of the following questions : $2 \times 5 = 10$

- (a) Discuss the requirements of good rails. Also explain with neat sketches about the shapes of rail sections.
- (b) Why are signals needed in Railways ? What are the types of Railway signals commonly used in India ?
- (c) Describe briefly, a marshalling yard.

6. Answer any *two* of the following questions : $2 \times 5 = 10$

- (a) Compare the design requirements of pavements for Airports and Highways.
- (b) Write briefly on lock gate with a suitable sketch.
- (c) Describe briefly the features of transit sheds and warehouses.

7. Write short notes on any *four* of the following :

$$4 \times 2 \frac{1}{2} = 10$$

- (a) Cross-Section of Broad Gauge Railway Track
 - (b) Turnouts
 - (c) Harbour
 - (d) Camber
 - (e) Road Factors Causing Accidents
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