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Total No. of Questions : **5**] [Total No. of Printed Pages : **4**

# B.E. 5th Semester Examination, 2017

# EKSS–335

## CIVIL ENGINEERING

## Transportation Engg.-II

## Paper : II

## (CE 505)



**Time : 3 Hours]** **[Maximum Marks : 60**

*Note* :– Attempt all the *five* questions. Solve any *two* parts from each question out of four parts a, b, c and d at one place in continuation only. Answer must be brief and to the point only. All questions carry equal marks.

1. (a) What are essential information required to be collected for design of a bridge ? Discuss briefly the characteristics of an ideal site of a bridge.

(b) Explain the extent of survey to be taken and the relevant data to be collected for fixing site and water way of the high level bridge.

(c) Explain with neat sketches :

(i) Abutment

(ii) Wing wall and

(iii) Return wall.

(d) Discuss what is Scour depth and how it affects the depth of foundation.

2. (a) Draw a neat sketch of foundation wall. Show the following levels in the same :

(i) Founding level

(ii) Scour depth level and

(iii) Well cap level.

(b) How fills and shifts are measured in well foundation and how they are corrected ?

(c) Draw a neat sketch of cofferdam with sheet piles. Explain its use and construction for large piers.

(d) Write how will you correct strengthening of bridges.

3. (a) What are essential surveys required for a long tunnel ?

(b) What are shafts ? Explain their use.

(c) What are tunnel linings ? Explain their placing and use.

(d) Give importance of drainage and ventilation in long tunnel.

4. (a) What is reconnaissance survey ? Why and how it is carried out ?

(b) What is superelevation ? What is its importance ? Derive the expression for its calculation for a highway bridge.

(c) Give importance of rotary signating for a highway crossing.

(d) Explain meaning of "sight distance" and its importance in highway engineering.

5. (a) What is Pavement ? What are two different types commonly used ? Give characteristics of both types of pavements.

(b) Explain the terms W.M.B. and W.M.M. How are they constructed in the field ?

(c) What are dowel bars and tie bars ? Explain their use with neat sketches.

(d) Why surface dressing is often required on roads especially after rainy season ? How is it done ? Explain in detail.