

# P P SAVANI UNIVERSITY

Sixth Semester of B. Tech. Examination

May 2022

SECV3070 Basics of Transportation Engineering

19.05.2022, Thursday

Time: 09:00 a.m. To 11:30 a.m.

Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Make suitable assumptions and draw neat figures wherever required.
3. Use of scientific calculator is allowed.

### SECTION - I

- Q-1 (a) Explain importance of highway engineering in India. [05]  
Q-1 (b) Write a short note on planning surveys and interpretation. [05]

OR

- Q-1 (a) Explain scope of highway engineering in India [05]  
Q-1 (b) Write a short note on development of highway in India. [05]  
Q - 2 (a) List out and explain the various gauges prevailing in India with their gauge widths. [05]  
Q - 2 (b) List the various types of sleepers used on Indian Railways. Which one would you consider to be the best for modern tracks and why? [05]

OR

- Q - 2 (a) What factors govern the selection of a suitable gauge? Discuss. [05]  
Q - 2 (b) What is the ballast? Why is it used in the railway track? Briefly describe the various types of ballasts used. [05]  
Q - 3 Answer the following questions (Any Two). [10]  
(i) Compare the characteristics of wooden sleepers and reinforced concrete sleepers used on Indian Railways.  
(ii) Explain requirements of an ideal alignment of railway  
(iii) Write a short note on mode of transportation and its scope.

### SECTION - II

- Q - 1 Answer the Following: [05]  
(i) What is the standard size of ballast?  
a) 51mm b)30mm c)45mm d) 60mm  
(ii) A culvert is a small bridge having its total length of \_\_\_\_\_ meters.  
(iii) What is the minimum grade of concrete in CC pavement?  
a) M20 b) M30 c) M40 d) M50  
(iv) What is jetty?  
(v) Enlist the types of ballast.  
(vi) Write the classification of road curves.  
(vii) Enlist the modes of transportation  
Q - 2 (a) Write Impact value test of aggregate with neat sketch [05]  
Q - 2 (b) Write difference between flexible pavements and rigid pavement [05]  
OR  
Q - 2 (a) Compare road transportation and railway transportation [05]  
Q - 2 (b) Write advantages and disadvantages of tunnel [05]  
Q - 3 (a) Draw a neat sketch of components of bridges and explain all the terms. [05]  
Q - 3 (b) Write classification of bridge. [05]  
OR  
Q - 3 (a) Enlist the types of rail joints and explain any two with neat sketch [05]  
Q - 3 (b) What are the requirements of ideal permanent way [05]

Q - 4 Attempt any one.

[05]

- (i) What is road alignment? What are the basic requirements of an ideal alignment?
- (ii) Explain different types of surveys in highway planning.

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