

**698****October 2017**

Time - Three hours  
(Maximum Marks: 75)

- [N.B: (1) Q.No. 8 in PART - A and Q.No. 16 in PART - B are compulsory. Answer any FOUR questions from the remaining in each PART - A and PART - B.  
(2) Answer division (a) or division (b) of each question in PART-C.  
(3) Each question carries 2 marks in PART - A, 3 marks in Part - B and 10 marks in PART - C.]*

PART - A

1. Define gradient.
2. Define road alignment.
3. Define gauge of a railway track.
4. What do you mean by turn out?
5. Define bridge pier.
6. State the need of planting trees.
7. Write the factors affecting highway alignment.
8. Define creep in rails.

PART - B

9. What are the advantages of providing signals?
10. What are the necessities of realignment?
11. State the requirements of a good sleeper.
12. Mention the purpose of a railway station.
13. What is coffer dam? Where is it used?
14. Explain rapid transport system.
15. Write the functions of bridge foundation.
16. Mention the benefits of highway lighting.

PART - C

17. (a) Explain with neat sketches the different types of road camber.

(Or)

(b) Explain with neat sketches the Proctor's compaction test to determine the optimum moisture content.

18. (a) Explain briefly the different methods of construction of concrete roads with a sketch.

(Or)

(b) (i) Write short notes on retaining wall and breast wall.  
(ii) Mention the factors affecting road alignment.

19. (a) Explain the different types of rail sections with neat sketches.

(Or)

(b) Explain the PQRS method of relaying a railway track.

20. (a) Define railway yard and explain the various types of railway yards.

(Or)

(b) List the different methods of controlling the movement of trains and explain any two systems in detail.

21. (a) What is a causeway? Explain its types with neat sketches.

(Or)

(b) Explain bow string girder type bridge and cantilever bridge with neat sketches.

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