

**April 2019**

*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 road camber.
2. Write any two compaction equipments.
3. Define creep in rails.
4. Write any two types of crossings in railways.
5. Define wing wall.
6. Mention any two objects of road arboriculture.
7. Define highway alignment.
8. What do you mean by turn table?

**PART – B**

9. What are the requirements of an ideal road?
10. What information are collected during preliminary survey?
11. What are the functions of a rail?
12. State the principles of interlocking.
13. What are the functions of bridge bearings?
14. Mention the functions of goods yard.
15. What is cofferdam? Where is it used?
16. What are the causes for road accidents?

[Turn over.....]

PART – C

17. (a) Explain the different types of road gradients stating the IRC recommendations.  
(Or)  
(b) Briefly explain the different types of grade separation.
18. (a) Explain the factors to be considered while fixing the alignment of a proposed road.  
(Or)  
(b) Explain: (i) Hair pin bends (ii) Breast wall (iii) Retaining wall.
19. (a) What is meant by plate laying? Explain in detail PQRS method of plate laying.  
(Or)  
(b) Explain: (i) Welding of rails (ii) Wear of rails.
20. (a) Distinguish between absolute block system and automatic signalling of train movement.  
(Or)  
(b) Explain in detail the types of stations based on their functional utility.
21. (a) What are causeways? Explain with the help of a neat sketch a high level causeway.  
(Or)  
(b) Describe with sketches the following types of bearings (i) Rocker bearing (ii) Rocker – roller bearing.
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