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C16-C-**404**

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BOARD DIPLOMA EXAMINATION, (C-16)

MARCH / APRIL — 2021

DCE — FOURTH SEMESTER EXAMINATION

TRANSPORTATION ENGINEERING

Time : Three Hours] [*Maximum Marks* : 80

PART-A 3×10=30

Instructions : (*i*) Answer **all** questions.

(*ii*) Each question carries **three** marks.

(*iii*) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Define Super elevation. What is the necessity of providing it ? 2+1

2. Define Camber. State any two advantages of providing camber. 1+2

3. State any three surveys required for fixing the alignment of a highway. 1+1+1

4. State any three reasons for providing road drainage. 1+1+1

5. Draw a neat sketch of a permanent way and label the components parts. 2+1

6. Draw a neat sketch of 'scissors crossover'. 3

7. State functions of a marshalling yard and types of it. 1.5+1.5

8. Explain the following terms : 1+1+1

(*a*) Linear water way

(*b*) Economic span

(*c*) Afflux

9. Define the following : 1+1+1

(*a*) High level bridge

(*b*) Culvert

(*c*) Low level causeway

10. List the different types of bridge super structures. 3

PART-B

10×5=50

Instructions : (*i*) Answer any **five** questions.

(*ii*) Each question carries **ten** marks.

(*iii*) Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (*a*) State any four reasons for widening the road in horizontal curves of small radius. 4

(*b*) Explain the following with a neat sketch : 3+3

(*i*) Sight distance

(*ii*) Stopping distance

12. (*a*) Define road alignment. 2

(*b*) List any eight factors that influence the highway alignment in plain areas. 8

13. Explain any five road intersections with neat sketches.

14. (*a*) List the surface drainage structure of roads. 2

(*b*) Explain any four drainage structure. 8

15. (*a*) List the three types of Transverse Joints. 3

(*b*) Explain any two of the transverse joints with neat sketches. 7

16. What is Ballast ? State any eight characteristics of a good ballast. 2+8

17. (*a*) Draw the neat sketch of Right hand turnout and indicate sailent features. 2+4

(*b*) Explain Turn table with a neat sketch. 3+1

18. (*a*) State any six factors influencing the selection of site for a bridge. 6

(*b*) Define economical span and scour depth. 2+2

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