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C-20-C–404

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BOARD DIPLOMA EXAMINATION, (C-20)

JUNE/JULY—2022

DCE - FOURTH SEMESTER EXAMINATION

TRANSPORTATION ENGINEERING

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

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

(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. State the classification of roads as per Indian Road Congress.

2. Define the terms *(a)* Ruling Gradient *and (b)* Minimum Gradient.

3. Define the terms *(a)* Porosity and *(b)* Void Ratio.

4. Mention any three objects of traffic signs.

5. What are the advantages of bituminous road over W.B.M. road?

6. State the machinery used in construction of W.B.M. road.

7. Write any three advantages of railways.

8. Calculate the mumber of sleepers required per rail length. Length of rail = 12·8 m, sleeper density = n + 6.

9. Sate any three factors for selection of site for a railway station.

10. Define *(a)* flange way clearance and *(b)* throat of crossing.

PART—B

8×5=40

Instructions : (1) Answer **all** questions.

(2) Each question carries **Eight** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

11. (a) Define the term road alignment. Mention any six factors that influence the highway alignment in plain areas.

(OR)

(b) State and explain different types of surveys to be conducted while locating a highway.

12. (a) Explain the methods of sub-surface drainage.

(OR)

(b) Explain the method of construction of cement concrete road.

13. (a) Define the term ballast. State any six functions of good ballast.

(OR)

(b) Explain different types of rail joints with neat sketches.

14. (a) Explain different types of station yards with neat sketches.

(OR)

(b) State the duties of Permanent Way Inspector (P.W.I).

15. (a) Define culvert. Explain any three types of culverts.

(OR)

(b) List the various component parts of a bridge with a neat sketch.

PART—C

10×1=10

Instructions : (1) Answer the following question.

(2) The question carries **ten** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

16. Explain the following Grade separated intersection with neat sketches :

(a) Diamond intersection

(b) Clover leaf junction

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