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EVENING

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Uni. Roll No.

30 JUN 2022

Program: B.Tech. (Batch 2018 onward)

Semester: 4th

Name of Subject: Transportation Engineering

Subject Code: PCCE-108

Paper ID: 16179

Time Allowed: 03 Hours

Max. Marks: 60

NOTE:

- 1) Parts A and B are compulsory
- 2) Part-C has Two Questions Q8 and Q9. Both are compulsory, but with internal choice
- 3) Any missing data may be assumed appropriately

Part – A

[Marks: 02 each]

- Q1 (a) Modern day transportation covers more than one mode of transportation. Justify the statement with the help of suitable examples.
- (b) Give the brief classification of roads as per Nagpur Road Plan.
- (c) Define the 'gauge' of a railway. List the gauges adopted in India, stating the reason for multiplicity of gauges.
- (d) What are the characteristics of road transport in comparison with other systems?
- (e) Illustrate with neat sketch the 'coning of wheels' as associated with railway.
- (f) Write a brief note on Wind Direction Indicator.

Part – B

[Marks: 04 each]

- Q2 What are the various surveys to be carried out before planning a highway system for a given area? Explain briefly.
- Q3 State the basic functions of the various components of a railway track and mark the components on a typical cross-section of the track.
- Q4 (a) Find out the expression for sleeper density for a B.G track if 19 sleepers are used under a rail length.
- (b) Using the sleeper density as calculated in (a), find out the number of sleepers required for constructing a railway track 640m long. (B.G. Track)
- Q5 What are the common configurations possible for runways? How is the runway orientation decided?
- Q6 Explain the procedure for the construction of wet mix macadam.
- Q7 Considering the transport development, discuss in detail the scope of mass transit system. What are the major challenges of mass transit system?

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Part - C

[Marks: 12 each]

Q8 Outline the main features of various road patterns commonly in use, with their neat sketches.

OR

Draw a neat diagram showing various component layers of a cement concrete pavement structure. What are the different materials required for the construction of a cement concrete pavement?

Q9 What is creep? Discuss the theories propounded for the probable causes of creep. What are the effects of creep? Suggest some preventive and remedial measures that can be taken to prevent creep.

OR

What is a wind-rose diagram? Explain in detail the procedure to plot a wind rose diagram.
