



PAPER ID-310574

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Subject Code: KCE070

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BTECH
(SEM VII) THEORY EXAMINATION 2023-24
RAILWAY, WATERWAY AND AIRWAY ENGINEERING

TIME: 3 HRS**M.MARKS: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.**

Q no.	Question	Marks	CO
a.	Define gauge of a railway track.	2	1
b.	What is ballast?	2	1
c.	What is a gradient?	2	2
d.	Explain the term alignment.	2	2
e.	What is interlocking?	2	3
f.	Explain pilot guard system.	2	3
g.	What do you mean by hangar?	2	4
h.	What is the application of wind rose diagram?	2	4
i.	Explain tidal current.	2	5
j.	What is dredging?	2	5

SECTION B**2. Attempt any three of the following:**

a.	Explain the concept of 'coning' with neat diagram.	10	1
b.	Discuss different points and crossings used in railways.	10	2
c.	What is signaling? Explain the objectives of signaling.	10	3
d.	Explain the various factors considered in the selection of site for airport.	10	4
e.	Explain the term dock? Discuss the classification of docks.	10	5

SECTION C**3. Attempt any one part of the following:**

a.	Using a sleeper density of $N+5$, find out the number of sleepers required for constructing a railway track (BG) 2000 m long.	10	1
b.	What is bearing plate? Also discuss its various types.	10	1

4. Attempt any one part of the following:

a.	Calculate the super elevation, maximum permissible speed, and transition length for a 3° curve on a high - speed BG section with a maximum sanctioned speed of 100 kmph. Assume the equilibrium speed to be 80 kmph and the booked speed of the goods train to be 50 kmph.	10	2
b.	Define the different types of yards and explain their functions.	10	2

5. Attempt any one part of the following:

a.	Give a brief explanation of the different kinds of transport that can be provided in an urban area.	10	3
b.	What are the various systems in place to control train movement?	10	3

6. Attempt any one part of the following:

a.	Briefly discuss the various elements of the airport lighting.	10	4
b.	Discuss in detail the zoning laws.	10	4

7. Attempt any one part of the following:

a.	What is a port? Discuss the requirements of a good port.	10	5
b.	What is anchoring? Discuss the points that need to be considered in anchoring.	10	5