QUESTION BANK
ON
RAILWAY & BRIDGE ENGINEERING

PREPARED BY

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SECTION-A(RAILWAY ENGG.)

UNIT-1
(INTRODUCTION & PERMANENT WAY)

Q.NO.	PART-A (TWO MARKS QUESTIONS)
1	Define sleepers and its types.
2	Define creep of rails.
3	Define cant deficiency.
4	Define kinks of rails.
5	Define Main lines & Branch lines.
6	Define Permanent Way.
7	Define Gauge and its types.
8	What do you mean by the coning of wheels?
9	Write down the necessity of superelevation.
10	What do you mean by capacity of a railway track?
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	Classify the Indian railway based on roads.
2	What are the factors considered at the time of selection of gauge?
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	Write down the advantages of Railway.
2	What are the requirements of an ideal permanent way and draw a typical cross section single line track?
3	What are the advantages of adopting uniformity of gauge?

UNIT-2(TRACK MATERIALS)

Q.NO.	PART-A (TWO MARKS QUESTIONS)
1	Write down any two functions of sleeper.
2	What are the different type's rail sections available in india?
3	Write down the standard length of rail for BG and MG in india.
4	How many types of welded rail are presently practiced in india?
5	Define staggered or broken joint of rail.
6	Define rail fastening.
7	What do you mean by composite sleeper index(CSI)

8	Write down the name of different classification of sleeper.
9	Find out the expression for sleeper density for a B.G track if 19 sleepers are used under a length.
10	Using sleeper density of M+5, find out the number of sleepers required for constructing a railway track 640m long BG track.
11	Write down any two functions of ballast.
12	What is the value of width & depth of ballast for different tracks?
13	Define fish plate.
14	Why are bearing plates used?
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	What do you mean by hogged rail & write down the preventive measure taken to rectify the hogged rail?
2	What are the different requirements of an ideal joint?
3	Write down the different purposes of welding.
4	What are the common methods adopted to prevent creep?
5	Write down the different functions of sleepers.
6	Describe CST-9 sleeper with neat sketch.
7	What are the different requirements of a good fish plate?
8	Describe briefly about dog spikes with neat sketches.
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	What are the different requirements of rail?
2	Write down the advantages of Flat-footed rail over bull headed & Double headed rail.
3	Describe the various types of rail joints adopted in Indian & foreign railways.
4	Draw the neat sketch of the supported & suspended rail joint.
5	What are the different advantages of welding of rails?
6	Describe different theories of creep.
7	What are the requirements of a good sleeper?
8	What are the advantages & disadvantages of concrete sleeper?
9	Write down the different requirements of good ballast.
10	Describe briefly different types of ballast used in railway tracks.

UNIT-3 (GEOMETRIC FOR BROAD GAUGE)	
Q.NO.	**PART-A (TWO MARKS QUESTIONS)**
1	Write down the different elements of a railway track.
2	Define gradient and its types.
3	Define ruling gradient.
4	Define grade compensation & write down its value for different track.
5	What is the value of minimum & maximum gradient at station yards according to drainage point of view?
6	Define superelevation.
7	Why is superelevation provided?
8	Define equilibrium superelevation & write down its value.
9	Write down the maximum value of superelevation for BG,MG & NG.
10	Define Cant deficiency.
11	Define negative superelevation.
12	What is the relation between degree & radius of curve?
13	Draw the cross-section of a B.G track in embankment for single line.
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	If the ruling gradient is 1 in 150 on a particular section of BG and at the same time a curve of 3° is situated on this ruling gradient. What should be the allowable gradient?
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	Describe briefly different types of gradient used in railway track.
2	If a 6° curve track diverges from a main curve of 5° in an opposite direction in the layout of a B.G yard, calculate the superelevation and the speed of the branch line , if the maximum speed permitted on the main line is 45kmph.

UNIT-4 (POINT & CROSSINGS) AND (LAYING & MAINTENANCE OF TRACK)	
Q.NO.	**PART-A (TWO MARKS QUESTIONS)**
1	What are points and crossings?
2	Why are point & crossings provided?
3	Define no of crossings & angle of crossing
4	Define the throw of switch.

5	Define heel clearance.
6	Define crossing.
7	Define TNC & ANC.
8	Why is maintenance necessary?
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	Define Turnouts & write down the different parts of a turnout.
2	What are the requirements of a good crossing?
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	Describe different types of crossings with neat sketches.
2	Explain the working principle of Left hand turnout with a neat sketch?
3	What are the different methods of maintenance of track, describe each briefly?

SECTION-B (BRIDGE ENGG.)

UNIT-1
(INTRODUCTION & BRIDGE FOUNDATION)

Q.NO.	**PART-A (TWO MARKS QUESTIONS)**
1	Differentiate between culvert & bridge.
2	Define causeway.
3	What is Class A & Class B bridge?
4	Define afflux.
5	Define scour depth.
6	Define waterway.
7	Write down the name of different types of piles.
8	What do you mean by sinking wells?
9	What are the factors taken into consideration at the time of selection of foundation?
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	Write down the different components of a bridge with a neat sketch.
2	Write short notes on pile foundation.
3	Define caissons & describe types of caissons.
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	What are the different classifications of bridges?
2	Write down the factors affecting for selection of a bridge site?

UNIT-2 (BRIDGE SUBSTRUCTURE APPROACHES) AND (PERMANENT BRIDGE)	
Q.NO.	**PART-A (TWO MARKS QUESTIONS)**
1	Write down the different elements of a bridge substructure.
2	Define pier cap.
3	Differentiate between Abutments & piers.
4	Define approaches.
5	Write down the name of different types of concrete bridge.
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	Define wing walls & describe different types of wing wall.
2	What are the different classifications of Abutments?
3	Write a short note on IRC bridge loading.
4	Describe different types of steel bridge with neat sketches.

UNIT-3 (BRIDGE SITE INVESTIGATION)& (CULVERT,CAUSEWAY)	
Q.NO.	**PART-A (TWO MARKS QUESTIONS)**
1	Define culvert.
2	Define afflux.
3	Define economic span.
4	Define freeboard.
Q.NO.	**PART-B (FIVE MARKS QUESTIONS)**
1	Define causeway & describe its types.
Q.NO.	**PART-C (TEN MARKS QUESTIONS)**
1	Describe the different types of culvert with neat sketches.
2	What are the factors taken into consideration for selection of bridge site?