

PNS SCHOOL OF ENGINEERING & TECHNOLOGY

Nishamani vihar, marshaghai, kendrapara

Internal Assessment Examination – 2023 (4th Semester)

Sub-Highway engineering

Branch – Civil Engineering

Answer all the questions

2 X5

NO-1

a. What are the role of transportation ?

Transportation engineering, primarily involves planning, design, construction, maintenance, and operation of transportation facilities. The facilities support air, highway, railroad, pipeline, water, and even space transportation.

B.what are the different mode of transportations ?

Air, water, and land transportation, which includes rails, roads, and off-road travel, are the many forms of transportation.

There are additional modalities as well, such as pipelines, cable transmission, and space travel.

c.what are the types of road in highway engineering ?

- Expressways.
- National highways.
- State highways.

- District roads.
- Rural roads.
- Border roads.

D.What is formation width ?

The total width of a road at the pavement's lowest point is referred to as the width of formation. It is the total width of the pavement or roadway, including any shoulders and separators that may be present.

E.What is camber ?

Roads are not flat but are designed and constructed to assist in the drainage of water. This is known as a camber. The surface is angled to stop rain water and snow melt gathering into puddles.

NO-2

Answer any two of these

a.Define about IRC Indian roads congress briefly.

The Indian Roads Congress (IRC) is the Apex Body of Highway Engineers in the country. The IRC was set up in December, 1934 on the recommendations of the Indian Road Development Committee best known as Jayakar Committee set up by the Govt. of India with the objective of Road Development in India.

The IRC provides a National forum for sharing of knowledge and pooling of experience on the entire range of subjects dealing with the construction and maintenance of roads and bridges, including technology, equipment, research, planning, finance, taxation, organization and all connected policy issues.

The Principal objectives of IRC are to provide a national forum for regular pooling of experience and ideas on all matters concerned with the construction and maintenance of highways, to recommend standard specifications and to provide a platform for the expression of professional opinion on matters relating to roads.

B.write about CBR test with diegram.

The CBR test is performed by measuring the pressure required to penetrate a soil sample with a plunger of standard area. The measured pressure is then divided by the pressure required to achieve an equal penetration on a standard crushed rock material. The harder the surface, the higher the CBR value.

CBR is the ratio expressed in percentage of force per unit area required to penetrate a soil mass with a standard circular plunger of 50 mm diameter at the rate of 1.25 mm/min to that required for corresponding penetration in a standard material. The ratio is usually determined for penetration of 2.5 and 5 mm .

C. Write about stopping sight distance & passing sight distance.

Stopping sight distance is one of several types of sight distance used in road design. It is a near worst-case distance a vehicle driver needs to be able to see in order to have room to stop before colliding with something in the roadway, such as a pedestrian in a crosswalk, a stopped vehicle, or road debris.

Stopping sight distance (SSD) or the absolute minimum sight distance. Intermediate sight distance (ISD) is defined as twice SSD. Overtaking sight distance (OSD) for safe overtaking operation. Head light sight distance is the distance visible to a driver during night driving under the illumination of head lights.