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PESHAWAR

B.Tech ⟶ CIVIL
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FINAL TERM EXAM

Question No 1:-

Define pavement distress and their Causes.

pavement distress:-

It is defined as the indication on performance of unfovarble pavement (unsatisfactory performance of the pavement) and it show the sign of uncoming failure (impending failure). it is the irregularity (uneven) of the road surface which is effect the user comfort and safety.

pavement their Caseses:-

i:- longitudinal and transverses Caraeke.

longitudinal and tranveses corkes often

result from Shrinkage or Construction of the bituminous Conneret Surface.---

ii:- Alligator or Fatigue Corking....
iii:- Block cracking.....
iv:- Slippage cracking...
v:- Reflection cracking....
vi:. Rutting....
vii:- Corrugation and Shoving
viii:- Depression...

Cracking in Bituminous pavement and their Cases.

Cracks in bitumius pavement are caused by deflection on the Surface over an unstable foundation Shrinkage of the Surface poorly

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Constructed lone joints, or reflection cracking. Five types of cracks commonly occure in the type of pavement.

stion No 2:-

Discuss the process of Sub-base and Sub grade preparation in detail:-

Sub-base:-

This information is to help cleants parpare the Sub grade and place the underground piping correctly. this information should also be reiwed by design enginers during the design stage of reselor project.

1:- Make Sure that you have the proper base dimenion. Feel free to call our office to conform those number.

2:- clear the site of all

vegetation and topsoil well beyond the out site of the tank base

3:- Mark the centre point of the reservoir.

4:- Install a top layer of crushed rock level to within an inche at least 1 beyound the outsite edge of the base.

5:- the crushed rock level to with an inch to least 1 beyound the outside edge of these base.

6:- the crushed rock for compaction to 95% used approved testing lab per country requirments.

Subgrade preparation:-

The integrity of lining system depends largely on the condition of the prepared subgrade. Earthworks can be used to support cover protect drain and separate components of a geosynthetic lining system.

The integrity of lining system depends largely on the condition of parpared subgrade. Earthwork can be used to support cover protect drain and seperte component of gesynthtic lining system one of the most erictical eorthwork for lining system is the prepored subgrade, since

it from the founding surface for the living system.

The short and long term integrity of lining system depends of the condition of the prepared subgrade. This tech Note discusses some key items to consider when evaluating the acceptability of a prepared subgrade.

Most soil material can be used in a prepared subgrade both locally ~~avilbl~~. available fill material as well as imported processed material can be used fine grained non cohesive soil such sand or silty sand and most cossehive soil.

Discuss the process of leaning of prime Coat:-

prime coat is define as application of low viscousty liquid bituminous material over an existing porous or adsorbent pavement material like WBM base course.

→ purpose of prime Coat:-

→ To plug the capillary voids.

→ To coat and board loose material on the surface

→ To harden or toughen the surface.

⇒ To promote adhesion b/w granular and the bituminous layer.

Prime Coat	Type
MC-30 (Medium Curing)	Cutback
AEP (Asphalt Emulsion prime)	Emulsified Cutback
EC-30 (Eco Cure)	Emulsion - Non bituminous
CSS - 1H (Cationic	Emulsion
Slow setting Hard Base)	"
SS-1H (Slow setting Hard Base	"
TP - (Terra prime	Polymer based Emulsion.

Prime Coat material:-

→ prime coat material mainly consist of cutback asphlt emlsizied asphlt or polymer based chemicel.

⇒ Cutback asphalt manufactured by blending asphalt cement with petrolium solvent.

⇒ the most commonly used prime coat material are MC-30 AEP, EC-30 CSS-1H and SS-1H

⇒ the most Histrical ullized prima material worldwide has been MC-30 (before 1984).

⇒ Hower MC-30 Catain petrolem Solvent which emits volatile organic Compound (VOCs) and there fore Cosuse pullation to the envirment.

Question:- # 4

Discuss the pavement type (surface / layers)

Typical layers of Conventional flexible pavement includes Seal Coat Surface Course tack coat binder Course prime Coat base Coure, Sub base Course Compked Sub-grade and natural Sub grade.