

CHAPTER II

SOIL MECHANICS

I - TERMINOLOGY :

English	French	Arabic
Excavation	Excavation	حفر
Ground particles	Grains, particules de sol	حبيبات التربة
Top soil	Sol supérieure	تربة سطحية
Subsoil	Sol végétal	تربة زراعية
Slope stability	Stabilité des pente	استقرار المنحدر
Bearing capacity of soil	Capacité portante du sol	قوة تحمل تاتربة
Clay	Argile	تربة غضارية
Saturated soil	Sol saturée	تربة مشبعة
Void ratio	Indice du vide	معامل الفراغات
Moisture content	Teneur en eau – Taux d'umidité	نسبة الرطوبة

II-a/ Physical properties of soil : Les propriétés physiques du sol

- | | | |
|----|--|---|
| 1) | Relative Density : La densité relative | R |
| 2) | Bulk density : La masse volumique apparente | B |
| 3) | Porosity : La prosité | P |
| 4) | Void ratio: L'indice du vide | V |
| 5) | Degree of saturation: Le degré de saturation | D |

III-Soil classification:

(Translate the text below)

Soils are classified in three types when considering the mode of formation

Transported soils e.g sand gravel ...

Residual soil(top soil)

organic soil(top soil, peat).

Classification des sols

Les sols sont classés en trois types lorsque l'on considère le mode de formation

Sols transportés, par exemple sable gravier...

Sol résiduel (terre végétale)

sol organique (terre végétale, tourbe).

IV- Soil survey procedures :

Procedures de la reconnaissance du sol

A/- Geological information

A)- Information géologique

B/- Preliminary reconnaissance.

B)- Reconnaissance (identification préliminaire)

C/- Setting out of trial pits and boreholes.

C)- Prélèvement d'échantillons et carottes d'essais

D/- Site investigation

D)- Investigation sur site

V -EXERCISE 1:

Fill in the blanks with the right word in the following paragraph?

Site Foundation Conditions

- information - Foundation type - locations - composition - the ultimate capacity

Subsurface soil conditions must be defined in sufficient detail to assess of the foundation.. This could include;

-—spread footings, mat foundation, piles, drilled shafts.
- Foundation dimensions—plan dimensions and For piles, tip elevations, vertical variations.
- Material/construction. For piles, type (concrete/steel/wood), and installation method (cast-in-place, open/closed-end driving).

Exercise 2: Choose the false or true answer for the statements below]

Statemnt	False / True
1) The collapsible soil is not suitable as a foundation basement	
2) The water draining operation for saturated soils is not necessary	
3) The slopes stability for route works is not an important factor.	
4) The granular soil in embankment is not recommended for application route works	
5) The bearing capacity of soil for construction structures could be less than 0,5 bars.	
6) The seismic zoning in Algeria classified M'sila region as zone 0	

