Geo-Technical Engineering -1

Q.P-1 Mock Examination 2020-2021.

*Required

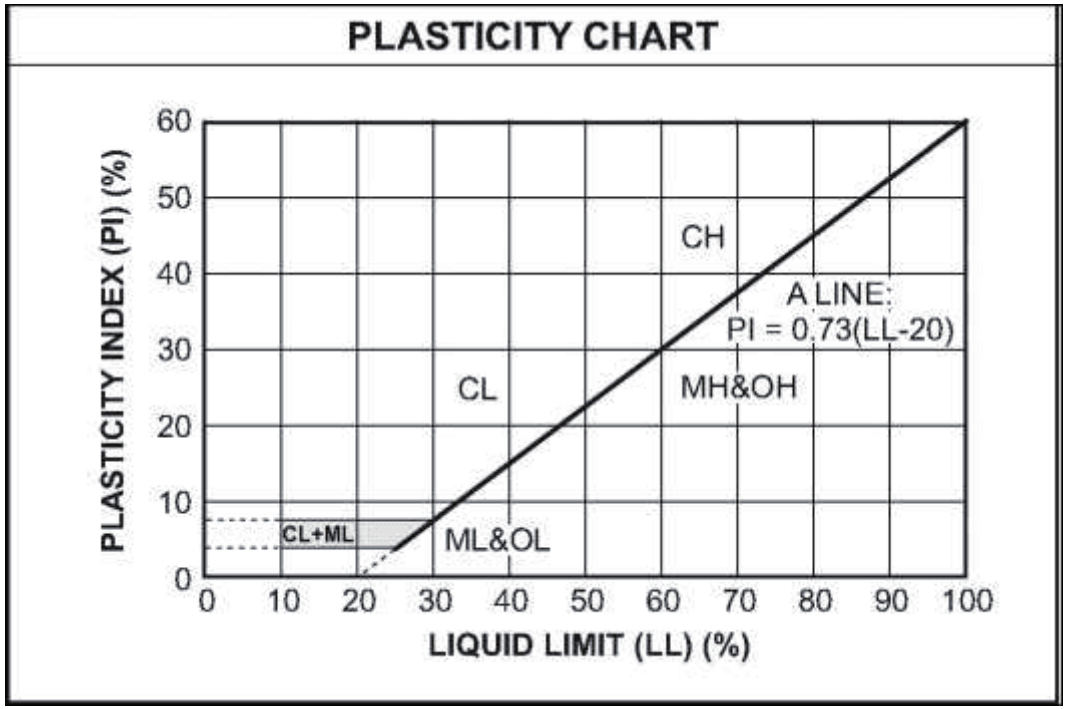
1. Email address *

2. Student Name and Roll no. *

3. Mail ID. *

0 points

4. Based on IS soil classification system, if the Liquid limit value is 40% and plasticity index is 10% then the soil is classified as * 2 points



Mark only one oval.

- MI or OI
- CH
- CL
- CI

5. Porosity and void ratio are related by: * 2 points

Mark only one oval.

- a) e = n/(1-n)
- b) n = e/(1-e)
- c) 1-e = n
- d) (1+n)/n = e-1

6. Coefficient of curvature (cc) can be calculated by the formula * 2 points

Mark only one oval.

- (D10)^2/(D30*D60)
- (D30)^2/(D10*D60)
- (D20)^2/(D30*D60)
- (D60)^2/(D30*D60)

7. If the particle size of the soil fragment is less than 4.75mm, then the soil is classified as * 2 points

Mark only one oval.

- Sil and Clay
- Sand
- Gravel
- Aggregate

8. Formula to calculate permeability of soil by Constant head permeability test is * 2 points

Mark only one oval.

- QL/Aht
- 2.303 *al/At * log (h1/h2)
- 2.303 *al/At * log (h2/h1)
- QL/ht

9. For standard proctor test, number of blows per layer for small diameter mould (1000cc) given to calculate the max dry density is 2 points

Mark only one oval.

- 25
- 55
- 45
- 50

10. Diameter of the standard proctor test mould of 2500cc capacity will be 2 points

Mark only one oval.

- 100mm
- 150mm
- 300mm
- 180mm

11. _____is a process by which the soil particles are artificially rearranged and packed together into a closer state of contact by mechanical means in order to decrease the voids ratio of the soil and thus increase its dry density 2 points

Mark only one oval.

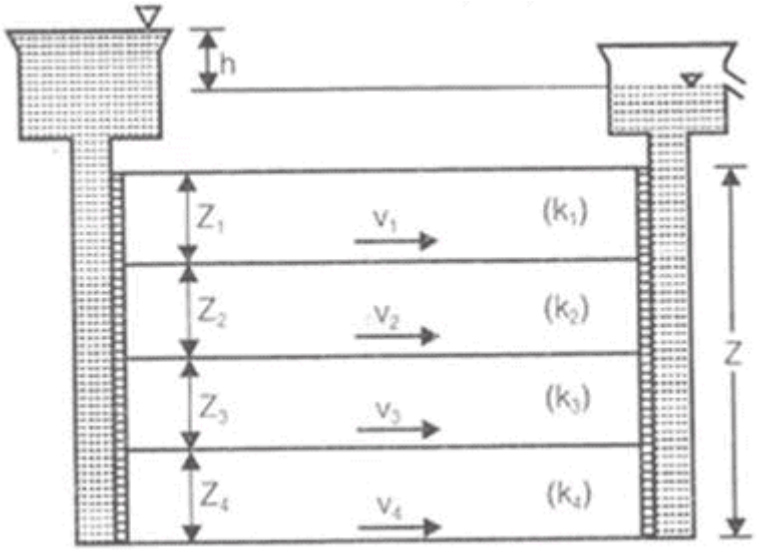
- Consoildation
- Filling
- Compaction
- Soil Classification

12. If the soil sample having differential head of water, the rate of flow can be calculated by * 2 points

Mark only one oval.

- q = (k*((h1-h2)/L)*A)
- q = (k*((h)/L)*A)
- q = (((h1-h2))/L*A)
- q = (k*(h1-h2)*A)

13. Average permeability parallel to the bedding planes can be calculated by 2 points



Mark only one oval.

- kx = (k1Z1+k2Z2+k3Z3+⋯……+knZn))/k
- kx = (k1Z1+k2Z2+k3Z3+⋯……+knZn))/Z
- kx = (Z1+Z2+Z3+⋯……+Zn))/Z
- kx = (k1Z+k2Z+k3Z+⋯……+knZ))/Z

14. Calculate the Bulk density and Dry density of compacted soil . Vol. of mould = 1000ml Mass of mould = 1000gms Mass of mould +wet sample = 2925 gms water content= 10.0% 2 points

Mark only one oval.

- ρb =1.925g/cc ρdry=1.75g/cc
- ρb =1.75g/cc ρdry=1.925g/cc
- ρb =1.25g/cc ρdry=1.5g/cc
- ρb =1.5g/cc ρdry=1.25g/cc

15. What are the types of water flow in the soil? 2 points

Mark only one oval.

- Turbulent flow and Laminar flow
- Linear flow
- Zig Zag flow
- Non Linear flow

16. Clays are _____ permeable. 2 points

Mark only one oval.

- Highly
- Least
- Partially
- All of the mentioned

17. Volume change in soil is due to which of the following factor? 2 points

Mark only one oval.

- Water content is changed
- Increase in soil density
- Change in pressure
- Change in particle size

18. The shape of the particle size curve is represented by _____ 2 points

Mark only one oval.

- a) Effective size
- b) Effective diameter
- c) Uniform coefficient
- d) Coefficient of curvature

19. According to Darcy's Law 2 points

Mark only one oval.

- a) q=iA
- b) q=kA
- c) q=kiA
- d) q∞kA

20. Which of the following parameters are going to affect when soil is fully compacted ? 2 points

Mark only one oval.

- a) Permeability decreases
- b) Water content increases
- c) Shear strength decreases
- d) Compressibility decreases

21. Gravels are _____ permeable. 2 points

Mark only one oval.

- a) Highly
- b) Least
- c) Partially
- d) All of the mentioned

22. For coarse grained soil, the particle size D10 is sometimes called as _____ 2 points

Mark only one oval.

- a) Effective size and effective diameter
- b) Uniform diameter
- c) All of the mentioned
- d) None of the mentioned

23. The density of the mercury, used in shrinkage limit apparatus is _____ 2 points

Mark only one oval.

- a) 13.1 g/cm3
- b) 13.2 kg/cm2
- c) 13.0 g/cm3
- d) 13.6 g/cm3

Geo-Technical Engineering -1

Q.P-2 Mock Examination 2020-2021.

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Answer any 4

Question No:2

4. Write a short note on Soil investigation 5 points

Files submitted:

5. Derive the relationship between water content, voids ration, degree of saturation and specific gravity 5 points

   Files submitted:

6. What are factor affecting compaction of soil 5 points

   Files submitted:

7. A Laboratory compaction test on a soil having Sp. Gr. 2.7. Gave Maximum Dry Density of 1830kg/m3 at the moisture content of 17%. Find the degree of saturation and air content ? 5 points

   Files submitted:

8. Write a short note on Permeability of Soil 5 points

   Files submitted:

Question No:3

9. Explain in detail Standard Penetration Test 10 points

   Files submitted:

10. Explain the test procedure to determine Liquid limit and Plastic limit 10 points

    Files submitted:

11. Mention the different methods to determine Moisture content ? Explain any one. 10 points

Files submitted: