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Q.5 In modified Proctor Test, the weight of rammer is

- a) 4.89
- b) 2.6 kg
- c) 2.0 kg
- d) 3.6 kg

Q.6 In a shear box test the failure plane is

- a) Weakest plane
- b) vertical plane
- c) Horizontal plane
- d) major principal plane

SECTION-B

Note: Objective/ Completion type questions. All questions are compulsory (6x1=6)

Q.7 For determining water content, temperature of oven is maintained at _____

Q.8 Coefficient of permeability of soil _____ with increase in temperature

Q.9 Darcy's law is valid for _____ type of flow.

Q.10 Sheep foot rollers are suitable for compacting _____ soils.

Q.11 Terzaghi's analysis is valid for _____ foundation.

Q.12 Total stress defined as the sum of _____.

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 How soil is formed? Explain the process of physical disintegration and chemical decomposition of rocks.

4th Sem / Civil

Subject : Soil Mechanics and Foundation Engineering

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Black cotton soil chiefly contains clay mineral

- a) Illite
- b) Kaolinite
- c) Montmorillonite
- d) None of these

Q.2 Maximum size of clay particles is

- a) 0.002 mm
- b) 0.04 mm
- c) 0.06 mm
- d) 0.001 mm

Q.3 Core cutter method is suitable only for

- a) Sand
- b) soft cohesive soils
- c) None of the above
- d) All types of soils

Q.4 The effective stress controls the following properties of soil:

- a) Shear strength
- b) Compressibility
- c) Permeability
- d) All above

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- Q.14 Bulk density of a clay sample was found to be 1.0 gm/c.c. Water content was 20% Determine void ratio and degree of saturation Take $G=2.68$.
- Q.15 Write a note on plasticity chart.
- Q.16 Define Isobar and pressure bulb.
- Q.17 Which are the various factors affecting permeability of soil? Discuss each briefly.
- Q.18 Define Consolidation and its Types.
- Q.19 Define Shear strength of soil and its significance.
- Q.20 Explain types of shallow foundations with diagram.
- Q.21 Define disturbed and undisturbed samples. State their significance.
- Q.22 Discuss the methods of improving bearing capacity of soils.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. $(2 \times 8 = 16)$

- Q.23 Explain the plate load test to find out ultimate bearing capacity of soils. State its limitations.
- Q.24 What is well foundations? Give its necessity. Explain & show various components of well foundation and its different shapes used with the help of diagram.
- Q.25 Explain Constant head Permeability Method with neat & clean diagram.

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