

Answers to short questions

Questions

Formative Assessment A (4 modules)	Formative Assessment B (4 modules)	Formative Assessment C (4 modules)
1. What is moisture content? 2. What is specific gravity? 3. What is soil classification? 4. Enlist Atterberg limit? 5. What is shrinkage limit? 6. What is plastic limit? 7. What is liquid limit? 8. How many soils classification system are used to classify soil for civil engineering? 9. Elist soil classification system? 10. What is consistency of soil? 11. What is void ratio? 12. What is porosity? 13. What is formula for uniformity coefficient? 14. What is formula for coefficient of curvature? 15. What is degree of saturation? 16. What is gradation curve? 17. Which test is used for quick determination of moisture content?	1. What is compaction? 2. What is consolidation? 3. What is OMC 4. In how many layer the soil sample is compacted in modified proctor test? 5. What is the weight of rammer in standard proctor test? 6. What is the height of fall in modified proctor test? 7. What is relative compaction? 8. What is permeability? 9. State Darcy Law? 10. How many types are there to find permeability of soil? 11. To determine permeability of coarse-grained soil which test is used? 12. To determine permeability of fine-grained soil which test is used? 13. State columb's law? 14. What is the relationship between moisture content and dry density? 15. Whiat is the relationship between compactive force and dry density? 16. Enlist type of soil exploration? 17. What type of apparatus is used for shear strength of soil? 18. Enlist types of boring?	1.What is bearing capacity of soil? 2. Name a commonly used field test to determine bearing capacity. 3. what is CBR? 4.What is SPT? 5.What is SPT refusal? 6. What is the typical range of the factor of safety used for bearing capacity? 7.what is foundation? 8. enlist the types of shallow foundation? 9. enlist types of foundation? 10.enlist types of deep foundation? 11. enlist types of piles according to its load carrying nature? 12.what is end bearing pile? 13.what is friction pile? 14. enlist the types of earth pressures? 15. how many types of earth pressure are there? 16.how many theories are there for earth pressure? 17.enlist the theories for earth pressure? 18. what is active earth pressure?

18. Which apparatus is used for determining liquid limit of soil?		
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Formative(A)	Formative(B)	Formative(C)
1.moisture content is the ratio of weight of water to weight of soil in a given sample 2.specific gravity is the weight of solid to weight of equal volume of water 3. Soil classification is the process of organizing soils into groups based on their characteristics 4. the following are the Atterberg limit - Shrinkage limit - Plastic limit - Liquid limit - Semi solid limit 5. The moisture at which soil change from solid to semi solid state is known as shrinkage limit 6. The moisture at which soil change from semi-solid to plastic state is known as plastic limit 7. The moisture at which soil change from plastic state to liquid state is known as liquid limit	1.Compaction is the process of densifying soil by reducing air voids using mechanical means. 2.Consolidation is the gradual reduction of soil volume due to expulsion of water under sustained load. 3.OMC (Optimum Moisture Content) is the moisture content at which soil achieves its maximum dry density during compaction. 4.The soil sample is compacted in five layers. 5.The rammer weighs 2.5 kg. 6.The height of fall is 457 mm (18 inches). 7.Relative compaction is the ratio of the field dry density to the maximum dry density obtained in the laboratory.	1.The bearing capacity of soil is the maximum load per unit area that the soil can support without failing. 2. The Plate Load Test is commonly used to determine soil bearing capacity. 3. CBR (California Bearing Ratio) is a measure of the bearing capacity of soil, indicating its load-bearing capacity. 4. SPT (Standard Penetration Test) is a field test used to determine the density and strength of soil 5.If the N-value exceeds 50 then the test is discontinued and is called a “refusal” 6. The typical factor of safety ranges from 2.5 to 3. 7. A foundation is the lower part of a building or structure that transfers its loads to the ground. 8. Pad footing, strip footing, raft foundation, combined footing, and strap footing.

8. There are three types for soil classification 9. the following are the soil classification systems - Unified soil classification system - AASHTO soil classification system - Textural classification system 10. Soil consistency is a measure of how easily soil deforms or how strong the soil materials are held together 11. void ratio is the volume of voids to volume of solids 12. porosity is ratio the volume of void to total volume 13. $C_u = D_{60}/D_{10}$ 14. $C_c = (D_{30})^2 / (D_{60} * D_{10})$ 15. degree of saturation is defined as the volume of water to volume of void 16. a graph that shows the distribution of soil particles by size 17. speedy moisture test is used for quick determination of moisture content 18. Casagrande's apparatus	8. Permeability is the ability of soil to transmit water or fluids through its pores. 9. Darcy's Law states that the rate of flow through soil is proportional to the hydraulic gradient and the soil's permeability. 10. There are two main methods 11. The constant head permeability test is used. 12. The falling head permeability test is used. 13. Coulomb's Law states that the shear strength of soil is the sum of cohesion and the product of normal stress and the tangent of the internal friction angle. 14. As moisture content increases, dry density increases up to the OMC and then decreases. 15. Greater compactive force generally results in higher dry density. 16. Soil exploration types include test pits, borings, and geophysical methods. 17. Shear strength tests use apparatus such as the direct shear test device, triaxial test device, and unconfined compression tester. 18. Types of boring include auger boring, rotary drilling,	9. shallow and deep foundation 10. Pile foundations, caisson foundations, pier foundations, and drilled shafts. 11. End-bearing piles and friction piles. 12. An end-bearing pile transfers loads to a deeper, more competent layer of soil or rock. 13. A friction pile relies on friction along its shaft to transfer loads to the surrounding soil 14. Active earth pressure, passive earth pressure, and at-rest earth pressure. 15. three types 16. There are three primary theories for calculating earth pressure 17. Rankine's earth pressure theory, Coulomb's earth pressure theory and Terzaghi theory 18. Active earth pressure occurs when the retaining wall moves away from the soil, causing the soil to expand.
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	percussion drilling, and wash boring.	