Program: BE Civil Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester V

Course Code: CEC 502 and Course Name: Geotechnical Engineering I

Time: 1 hour Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Stages of Geological Cycle for Soil formation?
Option A:	Erosion-Transportation-Deposition-Upheaval
Option B:	Erosion-Transportation-Upheaval-Deposition
Option C:	Erosion- Upheaval-Transportation-Deposition
Option D:	Erosion-Deposition-Transportation-Upheaval
Q2.	A soil sample has a specific gravity of 2.60 and void ratio of 0.78. the water content required to fully saturated soil at that void ratio will be
Option A:	20%
Option B:	30%
Option C:	40%
Option D:	60%
Q3.	The water content of a highly organic soil is determined in an oven at a temperature of:
Option A:	105^0 C
Option B:	80^0 C
Option C:	60^0 C
Option D:	27^0 C
Q4.	Pycnometer method for water content determination is more suitable for:
Option A:	Clay
Option B:	Loess
Option C:	Sand
Option D:	Silt
Q5.	Which of the following is not considered as one of the state, as given by Atterberg?
Option A:	Solid state
Option B:	Gaseous state
Option C:	Semi – solid state
Option D:	Liquid state
Q6.	The plasticity index of a highly plastic soil is about_____.

Option A:	10-20
Option B:	Greater than 40
Option C:	Less than 10
Option D:	20-40
Q7.	At shrinkage limit, the soil is
Option A:	Dry
Option B:	Partially saturated
Option C:	Saturated
Option D:	Liquid
Q8.	According to IS classification, the letter 'S' indicates
Option A:	Silt
Option B:	Sand
Option C:	Clay
Option D:	Gravel
Q9.	As per IS classification SM soil is known as
Option A:	Silty clay
Option B:	Silty gravel
Option C:	Sandy gravel
Option D:	Silty sand
Q10.	The average coefficient of permeability of natural deposits
Option A:	Parallel to stratification is always greater than that perpendicular to stratification
Option B:	Parallel to stratification is always less than that perpendicular to stratification
Option C:	Is always same in both directions
Option D:	Parallel to stratification may or may not be greater than that perpendicular to stratification
Q11.	The coefficient of permeability of clay is generally.
Option A:	Between 10^{-4} and 10^{-2} mm/s
Option B:	Between 10^{-5} and 10^{-4} mm/s
Option C:	Between 10^{-5} and 10^{-8} mm/s
Option D:	Less than 10^{-8} mm/s
Q12.	According to U.S.B.R a soil with coefficient of permeability of 10-4 mm/sec will be classified as
Option A:	Pervious
Option B:	Impervious
Option C:	Semi-pervious
Option D:	Highly pervious
Q13.	Which of the below is not a test on geosynthetics?
Option A:	Grab test
Option B:	Dry sieve test

Option C:	Pumping in test
Option D:	Tear test
Q14.	What are the types of water flow in the soil?
Option A:	Turbulent flow and Laminar flow
Option B:	Linear flow
Option C:	Turbulent Flow
Option D:	Laminar Flow
Q15.	What will be the co-efficient of passive earth pressure, at a depth of 8m in cohesion less with bulk unit weight as 19 kN/m3 and with an angle of internal friction of 30°?
Option A:	434.6 kN/m3
Option B:	508.2 kN/m3
Option C:	456 kN/m^3
Option D:	103 kN/m3
Q16.	Originally, Rankine's theory of lateral earth pressure can be applied to only
Option A:	Cohesion less soil
Option B:	Cohesive soil
Option C:	Fine grained soil
Option D:	Coarse grained soil
Q17.	The soils compacted dry of the optimum have a _____ stress strain curve than those on the wet side.
Option A:	Straight
Option B:	Steeper
Option C:	Gradual incline
Option D:	Gradual decline
Q18.	A cohesive soil yields a maximum dry density of 1.8 g/cc at an OMC of 16% during a standard proctor test. What will be its degree of saturation? Take G=2.65
Option A:	100%
Option B:	60.40%
Option C:	67.87%
Option D:	89.79%
Q19.	With an increase in the liquid limit, compression index
Option A:	increases
Option B:	decreases
Option C:	remains the same
Option D:	may increase may decreases
Q20.	Consolidation time of a soil sample
Option A:	increases with an increase permeability.
Option B:	increases with decreases in compressibility

Option C:	increases with a decrease in unit weight of water
Option D:	increase with decrease in permeability
Q21.	According to Coulomb, the relationship between shear strength and normal stress could be represented by
Option A:	Linear curve
Option B:	Parabolic curve
Option C:	Straight line
Option D:	Cubic equation
Q22.	The parameter ϕ in coulomb's equation "S = c + σ tan ϕ", represents
Option A:	Angle of internal friction
Option B:	Angle of slope
Option C:	Angle of repose
Option D:	tangent angle
Q23.	The commonly used apparatus for performing shear box test is
Option A:	Shear-box apparatus
Option B:	Bishop's pore pressure apparatus
Option C:	Tri axial shear test apparatus
Option D:	Vane shear test
Q24.	The commonly used penetration test are
Option A:	IS penetration test
Option B:	Cone penetration test
Option C:	Dutch standard test
Option D:	Triaxial Test
Q25.	The type of boring method that can be used for both rock and soils are
Option A:	Shell boring
Option B:	Wash boring
Option C:	Auger boring
Option D:	Rotary boring