Program: BE Civil Engineering

Curriculum Scheme: Revised 2016

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.	Which method is used to determination of water content when specific gravity of soil solids is known in advance?
Option A:	Pycnometer method
Option B:	Calcium carbide method
Option C:	Sand bath method
Option D:	Oven drying method
Q2.	For fully dry soil, degree of saturation is
Option A:	0
Option B:	1
Option C:	0.5
Option D:	1.5
Q3.	For fully saturated soil, degree of saturation is
Option A:	0
Option B:	1
Option C:	0.5
Option D:	1.5
Q4.	Void ratio for soils is lies between
Option A:	0 to 1
Option B:	1 to 2
Option C:	0 to infinite
Option D:	0 to 0.1
Q5.	For higher specific gravity the soil particles are more
Option A:	Thicker
Option B:	Denser
Option C:	Lighter
Option D:	Heavier
Q6.	Generally for soils density index (ID) lies between
Option A:	< 0

Option B:	> 0
Option C:	0.5 to 1
Option D:	1 to 1.5
Q7.	The water content at which the soil changes from liquid state to plastic state is known as
Option A:	Shrinkage limit
Option B:	Liquid limit
Option C:	Plastic limit
Option D:	Index limit
Q8.	At shrinkage limit, the soil is
Option A:	Dry
Option B:	Partially Saturated
Option C:	Saturated
Option D:	Liquid
Q9.	The property of soil which allows it to be deformed rapidly, without rupture is
Option A:	Elasticity
Option B:	Plasticity
Option C:	Tenacity
Option D:	Permeability
Q10.	Consistency of soil is used to describe firmness of which type of soil
Option A:	Coarse grained soils
Option B:	Fine grained soil
Option C:	Coarse sand
Option D:	Fine sand
Q11.	In the pipette method of sedimentation analysis, the soil is treated with which chemical to remove organic matter in it.
Option A:	Hydrochloric acid
Option B:	Sodium oxalate
Option C:	Hydrogen peroxide
Option D:	Sodium silicate
Q12.	Which of the following does not belong to particle size classification
Option A:	AASHTO system
Option B:	U.S. Bureau of soils classification
Option C:	MIT system
Option D:	International classification system
Q13.	Soils are classified as fine grain when more than 50% of the total material passes which IS sieve
Option A:	75 micron
Option B:	7.5 mm

Option C:	45 micron
Option D:	4.75 mm
Q14.	As per IS classification silt size is
Option A:	60 micron
Option B:	75 micron
Option C:	2 micron to 75 micron
Option D:	0.2 micron
Q15.	Which of the following soil is highly permeable?
Option A:	Gravel
Option B:	Sand
Option C:	Silt
Option D:	Clay
Q16.	A flow net is drawn for a dam, the total head loss is 6 m,number of potential drop is 10, and length of flow path for the last field is 1m. The exit gradient is
Option A:	0.7
Option B:	0.6
Option C:	1
Option D:	1.6
Q17.	The horizontal permeability is ..... than the vertical permeability
Option A:	More
Option B:	Less
Option C:	Equal
Option D:	Twice
Q18.	The exit gradient is the ratio of
Option A:	Slope to flow line
Option B:	head loss to length of Flow field at exit
Option C:	total head to total length
Option D:	Slope to equipotential line
Q19.	The maximum particle size for which Darcy's law is valid is,
Option A:	0.2 mm
Option B:	0.5 mm
Option C:	1 mm
Option D:	2 mm
Q20.	A soil has a discharge velocity 9.51e(-03) cm/s and void ratio of 0.675. It's seepage velocity is
Option A:	6.426 e(-03) cm/s
Option B:	14.10 e (-03) cm/s
Option C:	2.36e(-02) cm/s
Option D:	3.2e(-03) cm/s

Q21.	The coefficient of earth pressure when the soil is at equilibrium is given by
Option A:	σv /σh
Option B:	σh /σv
Option C:	σv × σh
Option D:	σ1 / σ3
Q22.	In active stress, the major principal stress σ1 acting on the wall with the vertical face is
Option A:	Vertical
Option B:	Horizontal
Option C:	Inclined
Option D:	Zero
Q23.	The amount of compaction greatly affects
Option A:	Water content and Maximum dry density
Option B:	Saturation of soil
Option C:	water content
Option D:	void ratio
Q24.	The basic action involved in sheep foot rolling is
Option A:	Kneading
Option B:	Pressing
Option C:	Tamping
Option D:	Vibration
Q25.	What is the maximum dry density for a soil sample having sp. gr. of 2.7 and OMC=16 %?
Option A:	3.0 g/cm3
Option B:	1.88 g/cm3
Option C:	0.562 g/cm3
Option D:	1.00 g/cm3