Program: BE Civil Engineering

Curriculum Scheme: Revised 2012

Examination: Third Year Semester VI

Course Code: CEC 601 Course Name: Geotechnical Engineering-II

Time: 1hour Max. Marks: 50

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

Q1.	The following assumptions is not made for the friction circle method of slope stability analysis
Option A:	Friction is fully mobilized
Option B:	Total stress analysis is applicable
Option C:	The resultant is tangential to the friction circle
Option D:	The resultant passes through the centre circle of friction circle
Q2.	The failure of soil mass occur along a plane or a turned surface when there is
Option A:	Upward & outward movement of soil mass
Option B:	Downward & outward movement of soil mass
Option C:	When both the movement are stopped
Option D:	Inward & outward movement of soil mass
Q3.	A vertical cut in made in a clay deposit C = 30 kN/m2 ϕ=5° γ=16 kN/m3 . Find the max height of the cut which can be temporarily supported .
Option A:	7.18 m
Option B:	7.84 m
Option C:	8.6 m
Option D:	9.4 m
Q4.	In Swedish circle method actual shape of a slip surface in case of finite slope is
Option A:	Straight
Option B:	Inclined
Option C:	Curvilinear
Option D:	Gentle slope
Q5.	Taylor determined the stability number for finite slope using
Option A:	Friction circle method
Option B:	Swedish circle method
Option C:	Approximate method
Option D:	Critical circle method
Q6.	For purely frictional soils , the cohesion intercept (c) is zero . As the stability

	number reduces to zero
Option A:	the stability charts cannot be used for such soils
Option B:	the stability charts can be used for such soils
Option C:	stability number can be used for such soils
Option D:	stability number cannot be used
Q7.	What will be the coefficient of active earth pressure for a rigid retaining wall, If the backfill consists of cohesion less soil having ϕ = 30°?
Option A:	0.333
Option B:	3
Option C:	1
Option D:	0.66
Q8.	A vertical wall with smooth face is 7.2m high and retains soil with a uniform surcharge angle of 9°.If the angle of internal friction is 27°.Compute the coefficient of passive earth pressure.
Option A:	0.392
Option B:	2.488
Option C:	0.998
Option D:	1.345
Q9.	According to assumptions of Rankine's theory of earth pressure the soil mass is
Option A:	Homogeneous
Option B:	Submerged
Option C:	Stratified
Option D:	Cohesive soil
Q10.	With the increase in cohesion in soil
Option A:	Decrease active pressure and increase passive resistance
Option B:	Decrease both active and passive resistance
Option C:	Increase active pressure and decrease passive resistance
Option D:	Increase both active and passive resistance
Q11.	What will be the coefficient of active earth pressure for a rigid retaining wall, If the backfill consists of cohesion less soil having ϕ = 25°?
Option A:	0.405
Option B:	2.463
Option C:	0.577
Option D:	0.655
Q12.	In the plate load test for determining the bearing capacity of soil, the size of square bearing plate should be
Option A:	less than 300 mm
Option B:	between 300 mm and 750 mm
Option C:	between 750 mm and 1 m
Option D:	greater than 1 m

Q13.	When the water table is close to ground surface, the bearing capacity of soil is reduced to
Option A:	one-fourth
Option B:	one-half
Option C:	two-third
Option D:	three-fourth
Q14.	The net ultimate bearing capacity of a purely cohesive soil
Option A:	depends on the width of the footing and is independent of the depth of the footing
Option B:	depends on the width as well as depth of the footing
Option C:	depends on the depth but independent of the width of the footing
Option D:	independent of both depth and width of the footing
Q15.	In Terzaghi's bearing capacity analysis, the soil wedge immediately below the footing remains in a state of
Option A:	Plastic Equilibrium
Option B:	Radial Shear
Option C:	Elastic Equilibrium
Option D:	Linear shear
Q16.	If two footings are connected by a beam, it is called as
Option A:	Combined footing
Option B:	Strap Footing
Option C:	Mat footing
Option D:	Cantilever Footing
Q17.	The area of the pile group along the failure surface is equal to _____
Option A:	Perimeter × Area of cross-section
Option B:	Breadth × Length
Option C:	Perimeter × Length
Option D:	Perimeter/area of cross-section
Q18.	Circular pile penetrates through a filled up soil of 3 m depth. the diameter is 250 mm ,Cohesion is 80 kN/m^2 the unit weight of soil is 15 kN/m^3 find the negative skin friction of pile. adhesion factor is 0.4.
Option A:	15.5kN
Option B:	14.7kN
Option C:	16.96kN
Option D:	18.95kN
Q19.	When the number of bulbs is increased from 1 to 2 then the capacity of the pile increases by about…..
Option A:	100%
Option B:	75%

Option C:	50%
Option D:	25%
Q20.	30 cm diameter concrete pile is driven in a normally consolidated clay deposit 15m thick. estimate the safe load. take C =17kN/m^2 , α = 0.9 and F.S.= 2.5.
Option A:	365kN
Option B:	370kN
Option C:	375kN
Option D:	380kN
Q21.	The forces acting on the conduits due to which loading are considered?
Option A:	only external loadings
Option B:	only internal loadings
Option C:	self loadings
Option D:	both external & internal loadings
Q22.	Underground conduits can be classified into how many types ?
Option A:	2
Option B:	4
Option C:	3
Option D:	5
Q23.	F or slopes of limited extent the surface of slippage, is usually along
Option A:	a parabolic arc
Option B:	an elliptical arc
Option C:	a straight line
Option D:	a circular arc.
Q24.	The structure of a geocell is:
Option A:	2D honeycombed
Option B:	2D floccular
Option C:	3D floccular
Option D:	3D honeycombed
Q25.	What is the major function of geogrid **?**
Option A:	separation
Option B:	Reinforcement
Option C:	filtration
Option D:	drainage

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	D
Q2.	B
Q3.	B
Q4	C
Q5	A
Q6	A
Q7	A
Q8.	B
Q9.	A
Q10.	A
Q11.	A
Q12.	B
Q13.	B
Q14.	D
Q15.	C
Q16.	B
Q17.	C

Q18.	C
Q19.	C
Q20.	C
Q21.	A
Q22.	C
Q23.	D
Q24.	D
Q25.	B