Program: BE Civil Engineering

Curriculum Scheme: Revised 2016

Examination: Third Year SemesterVI

Course Code: CEC601and 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 coefficient of compressibility is the ratio of
Option A:	Change in void ratio to change in effective stress
Option B:	Volumetric strain to change in effective stress
Option C:	Change in thickness to change in effective stress
Option D:	Stress to strain
Q2.	Under load, the void ratio of a submerged saturated clay decreases from 1.0 to 0.92. the ultimate settlement of a layer 2 m thick layer will be
Option A:	2 cm
Option B:	4 cm
Option C:	16 cm
Option D:	8 cm
Q3.	When the primary consolidation process in a soil is complete. Then
Option A:	The hydrostatic pressure will become zero
Option B:	The excess pore water pressure will become zero
Option C:	Both the hydrostatic and excess pore water pressure will become zero
Option D:	The effective stress will become zero
Q4.	The relation between undrained cohesion Cu and unconfined compressive strength (qu) for cohesive soil is
Option A:	$C_u = 2\ q_u$
Option B:	$C_u = (q_u)/2$
Option C:	$C_u = 3q_u$
Option D:	$C_u = (q_u)/3$
Q5.	If the angle of shearing resistance is 30°, the angle which the failure plane makes with the major principal plane is
Option A:	15°
Option B:	30°
Option C:	45°

Option D:	60°
Q6.	If 600 kN/m^2 is the undisturbed shear strength of a soil and 300 kN/m^2 is it's remoulded shear strength, then sensitivity is
Option A:	0.5
Option B:	1
Option C:	1.5
Option D:	2
Q7.	if an infinite slope of clay at a depth 5 m has cohesion of 1 t/m^2 and unit weight of 2 t/m^2 then the stability number is
Option A:	0.1
Option B:	0.2
Option C:	0.3
Option D:	0.4
Q8.	The method of the slices is applicable to
Option A:	Homogenous soil
Option B:	Stratified soils
Option C:	Non Homogeneous soils
Option D:	Non uniform slopes
Q9.	In friction circle method of slope stability analysis . if r defines the radius of slip circle , the radius of friction circle is
Option A:	r sin ф
Option B:	r
Option C:	r cos ф
Option D:	r tan ф
Q10.	The ratio of horizontal and vertical principal effective stresses when a retaining wall is forced against a soil mass is called as
Option A:	Active Earth pressure
Option B:	Passive Earth pressure
Option C:	Pore Pressure
Option D:	Swelling Pressure
Q11.	A rigid retaining wall having the backfill consisting of cohesion less soil having φ = 30^0. What will be the coefficient of earth pressure at rest?
Option A:	0.8
Option B:	0.5
Option C:	0.4
Option D:	0.6
Q12.	If the movement of failure wedge is upward then the pressure is acting on the soil is
Option A:	Active Earth pressure

Option B:	Passive Earth pressure
Option C:	Pore Pressure
Option D:	At Rest earth pressure
Q13.	Cohesion in soil
Option A:	Decreases active pressure and increases passive resistance
Option B:	Increases both active pressure and passive resistance
Option C:	Increases the active pressure and decreases th passive resistance
Option D:	Increases both active pressure and passive resistance
Q14.	Earth pressure for retaining walls, of less than 6m are obtained by
Option A:	Analytical method
Option B:	Considering approximate value
Option C:	Graphical method
Option D:	Analytical and Graphical method
Q15.	Pressure distribution from wedge theory assumption is
Option A:	Distributed
Option B:	Equal
Option C:	Planar
Option D:	Hydrostatic
Q16.	A shallow foundation is usually defined as a foundation which has
Option A:	Depth less than 0.6m
Option B:	Depth less than or equal to its width
Option C:	Depth less than 1m
Option D:	Depth greater than width
Q17.	The value of shape factor Sc, Sq and Sγ for circular base is _____
Option A:	1.3, 1.2, 0.8
Option B:	1.3, 1.2, 0.6
Option C:	1.0, 1.0, 1.0
Option D:	1.2, 1.0, 1.3
Q18.	The standard penetration resistance is determined at a number of selected points at interval of
Option A:	80 cm
Option B:	100 cm
Option C:	75 cm
Option D:	10 cm
Q19.	In general shear failure, continuous failure developed between
Option A:	Ground surface and footing
Option B:	Foundation and the ground surface
Option C:	Middle of the footing
Option D:	Edge of the footing and ground surface

Q20.	As per IS Code, maximum permissible differential settlement of clayey soil is
Option A:	25 mm
Option B:	40 mm
Option C:	65 mm
Option D:	100 mm
Q21.	The seating load for plate load test is_____
Option A:	2 kN/m^2
Option B:	3 kN/m^2
Option C:	4 kN/m^2
Option D:	7 kN/m^2
Q22.	The bearing capacity of a single pile in clay is mainly due to _____
Option A:	Friction
Option B:	Shear strength of soil
Option C:	Allowable load
Option D:	Ultimate load
Q23.	The load-carrying capacity of a pile CANNOT be determined by which of the following methods?
Option A:	Dynamic formulae
Option B:	Static formulae
Option C:	Pile load test
Option D:	Plate load test
Q24.	Which instrument is used to measuring displacement in pile load test load test
Option A:	Sand bag
Option B:	Dial Gauge
Option C:	Reaction Beam
Option D:	Hydraulic pump
Q25.	Settlement of Pile group in clay can be computed on assumption that
Option A:	The load is spread at an angle 30° with Horizontal
Option B:	The load is spread at an angle 90° with vertical
Option C:	The load is spread at an angle 30° with vertical
Option D:	The load is spread at an angle 60° with vertical