

MINISTERUL EDUCATIEI CERCETARII SI TINERETULUI UNIVERSITATEA TEHNICA "GH. ASACHI" IASI FACULTATEA DE CONSTRUCTII

Bd. Prof. dr. Dimitrie Mangeron 43, cod 700050 , IASI, tel: (0232)278683*, 254638, fax: (0232)233368

GEOTECHNICAL AND FOUNDATION ENGINEERING

1.	The foundation depth represents:					
a.	the level difference between the lower and the upper part of the foundation					
b.	the level difference between the lower part of the foundation and the natural or arranged ground surface,					
	depending on the situation					
c.	both options are correct					
1	The frost depth influences the minimum foundation depth by the following correlation:					
2.						
a.	$D_{f,min} = h_i + 1020cm$ b. $D_{f,min} = h_i - 1020cm$ c. $D_{f,min} = h_i$					
3.	The frost depth represents:					
a.	the maximum depth of the location for the 0°C isotherm, on the site of interest					
b.	the average depth of the location for the 0° C isotherm, on the site of interest					
c.	the minimum depth of the location for the 0°C isotherm, on the site of interest					
4.	The foundation depth for the external foundations of a new construction, closely located to existing constructions is recommended to be:					
a.	at the same levelb.at a higher levelc.at a lower level					
5.	The foundation depth for a shallow foundation in a corresponding foundation soil is recommended:					
a.	to be minimum 50 cm above the underground water level					
b.	to maximum 50 cm under the underground water level					
0.	to maximum 50 cm under the underground water lever					
6.	The foundation depth for a retaining wall is selected depending on:					
a.	the ground level, in front of the wall b. the ground level of the supported soil, at the back of the wall					
1 _						
7.	The presence of the underground water near the ground surface signifies that:					
a.	the site should be avoided for that construction b. drainage works are required					
8.	The foundation solution is influenced by:					
a.	the minimum foundation depth					
b.	the maximum foundation depth					
c.	the foundation solution is not influenced by the foundation depth					
9.	The bearing capacity of the foundation soil has the significance of:					
э. а.	an action b. a resistance c. a pressure at rest					
	What is the correlation regarding the plastic pressures for two shallow foundations of identical footing area,					
10.	supported by the same foundation soil, at depths $D_{f1}>D_{f2}$:					
a.	$p_{pl1} < p_{pl2} \qquad b. p_{pl1} = p_{pl2} \qquad c. p_{pl1} > p_{pl2}$					
11.	When is it possible that the bearing capacity of site 1 is larger than on site 2, regarding two foundations at the same depth and identical footing area, displayed on two sites, identified as 1 and 2, with the same soil profile:					
a.	$\phi_1 < \phi_2$ b. $\phi_1 = \phi_2$ c. $\phi_1 > \phi_2$					
12.	When is it possible that the bearing capacity of site 1 is larger than on site 2, regarding two foundations at the same depth and identical footing area, displayed on two sites, identified as 1 and 2, with the same soil profile:					

a. $c_1 < c_2$ b. $c_1 = c_2$ c. $c_1 > c_2$



13. What is the relation between the plastic pressures p_{pl} , for a foundation soil as clay in consistency states as $I_{C1} > I_{C2}$:

a.	$p_{pl1} < p_{pl2}$	b.	$p_{pl1} = p_{pl2}$	c.	$p_{pl1} > p_{pl2}$	
14	_					
14.			$(c \cdot N_3)$ is given for the calculation	on of:		
a.	pressure - p _{pl}	b.	pressure - p _{cr}	c.	pressure ₋ p _{conv}	
15.	The relation: $\gamma^{\bullet} \cdot B' \cdot N_{\gamma} \cdot \lambda_{\gamma} + q$	· N _q	$\cdot \lambda_q + c^{\bullet} \cdot N_c \cdot \lambda_c$ is used for th	e cal	culation of :	
a.	pressure - p _{pl}	b.	pressure - p _{cr}	c.	pressure ₋ p _{conv}	
16.	What are the conditions to be centric loaded foundation:	resp	ected when calculating the soil a	at the	e deformation limit state under a	
a.	$\Delta_{s(t)} < \bar{\Delta_{s(t)}} \qquad \text{and} \qquad$	b.	$\Delta_{s(t)} < \Delta_{s(t)}^{-}$ and $p_{ef} < 1, 2 \cdot p_{pl}$	c.	$\Delta_{s(t)} < \Delta_{s(t)}$ and $\bar{p}_{ef max} < 1,4 \cdot p_{pl}$	
	$p_{ef} < p_{pl}$		$p_{ef} < 1, 2 \cdot p_{pl}$		$\bar{p}_{ef max} < 1, 4 \cdot p_{pl}$	
17.	What are the conditions to be eccentric loaded foundation on			t the	deformation limit state under an	
a.	$\Delta_{s(t)} < \Delta_{s(t)}^{-} \qquad \text{and} \qquad$	b.	$\Delta_{s(t)} < \Delta_{s(t)}^{-}$ and $p_{ef} < 1, 2 \cdot p_{pl}$	c.	$\Delta_{s(t)} < \Delta_{s(t)}$ and $\bar{p}_{ef max} < 1, 4 \cdot p_{pl}$	
	$p_{ef} < p_{pl}$		$p_{ef} < 1, 2 \cdot p_{pl}$		$\bar{p}_{ef max} < 1, 4 \cdot p_{pl}$	
18.	The pressure n admits as the a	المرام	ation hypothesis:			
a.	The pressure p_{pl} admits as the c a limited extent of the plastic zo					
b.	the occurrence of failure surface	es int	o the foundation soil;			
с.	a general extent of the plastic ze	one ii	nto the foundation soil.			
19.	The rigid spread foundations ar	e use	d for:			
a.	building structure made of brick masonry;					
b. c.	building structure made of diap building structure made of reinf					
20.		, con	sisting of a foundation block and			
a.	at the inferior part of the foundation block;	b.	there is no reinforcement, consi is the case of a rigid foundation.		g that it c. in the plate;	
21.	The calculation of the continuo	ue rie	<u> </u>			
21. a.	on the total length of the most l					
b.	on the total length of the wall o	f may	kimum length;			
c.	for 1.0m section of the footing	lengt	1;			
22.	The structural reinforcement reg	gardi	ng the continuous elastic footings	und	er structural walls is displayed:	
a.	transversally; b. longi	tudir	ally; c. both tra	ansve	ersally and longitudinally.	
23.	plane distribution of the reactive		ssures, uses the static representati	on of	of foundation beams applying the f:	
a.	a beam on two supports at the ends of the beam;	b.	a continuous beam, considerin the columns as supports;	^{ig} c	a beam on elastic medium	



24.	In the relation: $p = k y$ (Winkler's hypothesis)						
a.	k is a rigidity characteristic of the structure;						
b.	k is a rigidity characteristic of the foundation;						
с.	k is the subgrade modulus of the soil.						
	The necessary area of the footing, for a spread foundation loaded by a vertical force P= 500 KN and a						
25.							
	KPa is of:						
a.	$(1,50 \text{ x } 2,0) \text{ m}^2 \qquad \qquad \text{b.} \qquad (1,70 \text{ x } 2,2) \text{ m}^2 \qquad \qquad \text{c.} \qquad (1,20 \text{ x } 1,8) \text{ m}^2$						
1							
26.	The structural longitudinal reinforcement for foundation beams is displayed:						
a.	at the inferior part of the beam cross section, on the support;						
b.	at the superior part of the beam cross section, in the field;						
C.	both at the superior and inferior part of the beam cross section.						
1							
27.	When a deep foundation is conceived, the composing elements are:						
a.	both piles and caissonsb.either piles or caissons						
28.	Precast piles are driven into the ground by means of a hammer or a vibratory force generator in order to:						
a.	ensure the load transfer from the compact soft, cohesive drain the water from b.						
	superstructure to the surrounding soil layers ⁰ . soil layers ^c . the soil voids						
1							
29.	Large diameter bored piles are:						
a.	displacement piles b. compaction piles						
30.	The earth pressure diagrams on a retaining wall supporting a homogeneous soil profile with no overload on						
	the ground surface may be represented by:						
a.	a triangle b. a rectangle c. a trapezium						