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

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CIVIL, INDUSTRIAL AND AGRICULTURAL CONSTRUCTIONS

1.	A stone masonry building element that will be placed under the natural ground level is constructed with:				
a.	lime mortar	b.	plaster mortar	c.	cement mortar

2.	The characteristics of monolith of the masonry works is provided by:				
a.	the block units	b.	the bonding system	c.	the nature of the mortar

3.	The mixed masonry includes:				
a.	block units of the same type of material	b.	block units of different types of materials	c.	even reinforced concrete sections

4.	The masonry block units can be:				
a.	solid (compact)	b.	perforated	c.	porous

5.	In the construction of masonry walls of vertical or horizontal perforated bricks units the block unit is placed with the axis of the perforation:				
a.	across the median plane of the wall	b.	along the median plane of the wall	c.	mixed

6.	The efficiency of the thermal insulation in the case perforated block units is increased if:		
a	the perforations are concentrated in one or two areas	b.	the perforations are inserted and uniformly distributed over the whole area

7.	The classification of "cement-lime" and of "lime-cement" express the:		
a	succession of insertion for the two binding materials in the manufacturing process	b.	the quantity proportion between the two binding materials

8.	In compression with the local compressive strength the plane masonry characteristic compressive strength is:				
a.	higher	b.	lower	c.	equal

9.	The characteristic compressive strength estimated experimentally (by Oniscik method) depends explicitly on:				
a.	the block unit class	b.	the mortar class	c.	the thickness of the mortar joint

10.	The characteristic compressive strength estimated experimentally (by Hilsdorf method) depends explicitly on:				
a.	the block unit class	b.	the mortar class	c.	the thickness of the mortar joint

11.	The characteristic compressive strength of the masonry is				
a.	higher than the block unit strength for M10	b.	equal to the block unit strength	c.	lower than the block unit strength

12.	The characteristic compressive strength of the masonry is				
a.	higher than the mortar strength	b.	equal to the mortar strength	c.	lower than the mortar strength

13. The characteristic tensile strength of the masonry when the plane of rupture is passing by a bed joint depends mainly (preponderant) on:

a. the block unit tensile strength b. the mortar tensile strength c. the adherence between the block unit and the mortar

14. The characteristic shear strength of the masonry when the plane of rupture is following the bed joint depends on:

a. the block unit shear strength b. the mortar shear strength c. the value of unitary normal stress on the section d. the block unit compressive strength

15. In the case of the lime mortar manufacturing process it is mixed up:

a. firstly the water with the aggregates and than the lime b. firstly the lime with the water and than the aggregates

16. In the case of the cement mortar manufacturing process it is mixed up:

a. firstly the water with cement the and than the aggregates b. firstly the cement with the aggregates and than the water

17. For the estimation of the characteristic compressive strength of the masonry on reduced dimension proofs, the correlation factor take account on:

a. the wracking conditions of the masonry b. the relation between characteristic compressive strength factors for the testing proofs with different slenderness c. the importance class of the construction

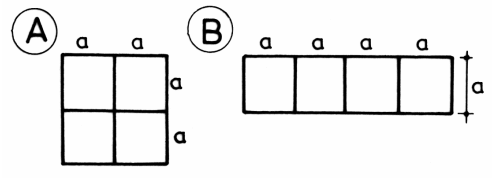
18. In the design of the masonry sections submitted to eccentric compression, the factor tat reflects the effect of restrained deformation due to the presence of the uncharged masonry (factor de autofretaj) has the maximum value ……. according how grate is the eccentricity.

a. 1,0 b. 1,5 c. 2,0

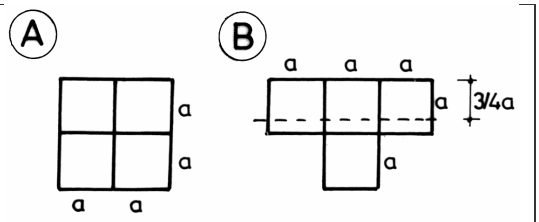
19. The value of the slenderness factor in the case of the masonry depends just on:

a. geometrical characteristics of the building elements b. elasticity characteristics of the masonry c. both types of characteristics

20. Tow columns submitted to compression, are made of masonry of the same materials $\left(R_z^A = R_z^B = R_z\right)$, has the same slenderness effective length and the cross section presented bellow. Their bearing capacity keep one of the following inequality:

a. 

$\frac{C^A}{C^B} > 1 \quad \frac{C^A}{C^B} < 1 \quad \frac{C^A}{C^B} = 1$

b. 

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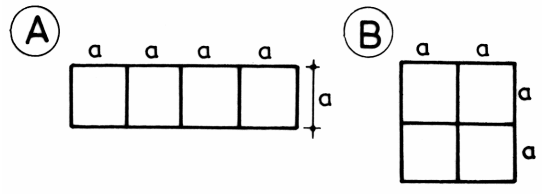
c. 

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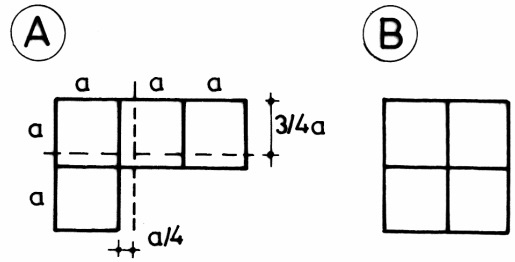
d. 

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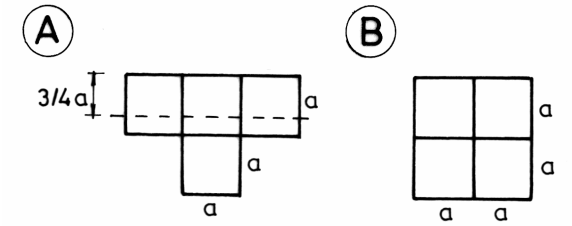
e. 

$\frac{C^A}{C^B} > 1 \quad \frac{C^A}{C^B} < 1 \quad \frac{C^A}{C^B} = 1$

21. The elasticity modulus of the compressed masonry depends on the value of the unitary stress on the section thanks to:

a. the block unit predominantly b. to the mortar predominantly

22. The deformation of the masonry under the action of the long duration loads are stabilised:

a. when $\sigma_{duration} > \sigma_{crack}$ b. when $\sigma_{duration} < \sigma_{crack}$

23. The longitudinal modulus of elasticity (E_0) of the compressed masonry depends on:

a. the unitary stress on the section b. the block unit class c. the mortar class d. the characteristic compressive strength of the masonry

24. The elasto-plastic behaviour of the masonry is determined by:

a. the main component (the block units) b. the mortar (10% of the volume)

25. The actual reserves of bearing capacity of the rifty / (fissured) masonry elements submitted to centric compression, are greater if:

a. are used mortars of superior class b. are used mortars of inferior class

26. The ratio between the crack force and breaking force (N_{fis} / N_r) in the case of a compressed masonry element, made with superior class mortar is:

a. (0,5....0,6) b. (0,7....0,8)

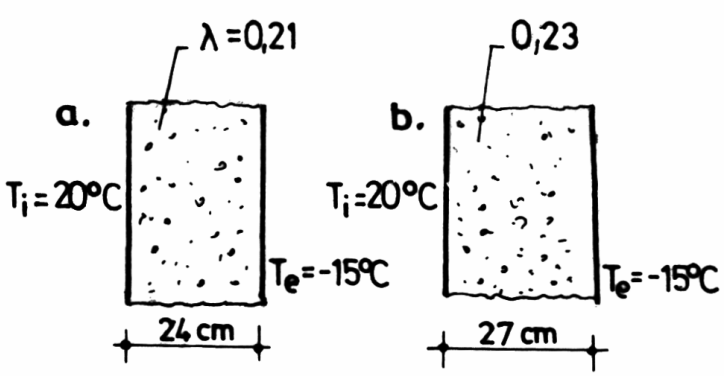
27. The ratio between the crack force and breaking force (N_{fis} / N_r) in the case of a compressed masonry element, made with inferior class mortar is:

a. (0,5....0,6) b. (0,7....0,8)

28. Through an air layer, irrespectively of the thickness of the air layer, the heat is transmitted mainly by:

a. conduction b. convection c. radiation

29. At which of the wall types presented below the temperature of the inside face is higher, in the case of steady state total heat loos?



a. b. c.

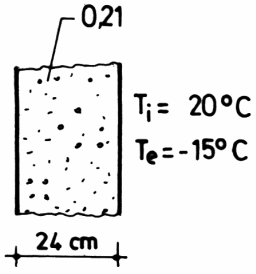
30. The notion of mean / average radiant temperature signify

a. the temperature of the internal air b. the temperature of the external air c. the temperature of the internal surfaces

31. The temperature of the internal surface of a building element is measured with :

a. the thermometer b. sclerometer c. thermocouple

32. For the wall form the figure $T_i = 20°C$, $T_e = -15°C$ and $\lambda = 0,21$ W/m·K, in this case the 0 ° C isotherm is located at:



a. 10,3 cm from the inside face b. 12,9 cm from the inside face c. 14,5 cm from the inside face

33. The isotherm link up points:

a. of the same pressure b. of the same humidity c. of the same temperature

34. The necessary resultant temperature (T_{RC}) depend on:

a.	the thermo-physical characteristics of the building elements	b.	the physical condition of building elements	c.	the intensity of the metabolism
d.	the clothing	e.	the health condition	f.	the age

35. The effective resultant temperature depends on:

a.	the outdoor temperature	b.	the temperature of the internal air	c.	the dew point	c.	the mean / (average) radiant temperature

36. The concept of temperature mean:

a.	a quantity of heat	b.	a quantity of energy	c.	a state of heating

37. Between two points with different temperatures occur:

a.	a temperature exchange	b.	a heat exchange

38. According to the nature of the environment between the two points, the exchange arise / occur by:

a.	conduction	b.	convection	c.	radiation

39. If two points has different temperatures and the difference of temperature remain constant in time, the heat exchange between the points has:

a.	permanent regime	b.	continuous duty / regime	c.	stationary regime	c.	variable regime

40. If two points has different temperatures and the difference of temperature is variable in time, the heat exchange between the points has:

a.	impermanent t regime	b.	non-stationary regime	c.	variable regime	c.	stationary regime

41. If the heat transmission is made by conduction, the thermal resistance depends on:

a.	the surface of the element	b.	the thickness of the element	c.	the thermal conductivity of the material that makes the element

42. The computational / design thermal conductivity (λ), estimated in stationary regime conditions depends on:

a.	the geometrical characteristics of the test sample (surface, thickness)	b.	the physical structure of the material

43. By [W/m^2] is measured:

a.	the whole quantity of transmits heat	b.	the heat flux density

44. By [$W/m^2 \cdot {}^0C$] is measured:

a.	the permeability of the building element	b.	the factor of thermal assimilation (S_i)

45. The heat transmission in non-stationary regime is determined by:

a.	the variation of the physical and thermo-technical characteristics of the building elements	b.	the variation of the environmental condition

46. The thermal inertia coefficient (D) depends only on:

a.	the characteristics of the building elements	b.	the heating regime	c.	both

47. The development of the humidity in the buildings has:

a.	thermo-technical effects	b.	sanitary- hygienic effects	c.	effects on the durability

48. The absolute humidity of the water vapors in the air is proportional to:

a.	the vapors content (the water vapors mass)	b.	the volume of the room	c.	the form of the room

49. The risk of condensation on the internal face of the building elements depends on:

a.	the surface dimensions	b.	the surface form	c.	the surface temperature

50. The thermal resistance of a building element made of more layers depends on:

a.	the position of the layer in the element	b.	the nature of the several media	c.	the nature and the structures of the materials

51. The dew /(condensation) point /(temperature) stand on :

a.	the position of the element	b.	internal humidity

52. The dew (condensation) point (temperature) depends on:

a.	Internal air temperature	b.	external air temperature	c.	external and Internal air temperature

53. The support of the flat sheet covering is made of:

a.	battens	b.	wood board	c.	rafters

54. The support of the covering made of tiles is constructed of:

a.	battens	b.	wood board	c.	rafters

55. The continuous and sealed /(tight) coverings are recommended for:

a.	terraced /(flat) roofs	b.	pitched roofs (with steeply slope)

56. The discontinuous coverings are used for:

a.	terraced /(flat) roofs	b.	pitched roofs (with steeply slope)

57. The diameter of the rainwater outlet pipe (d_1) compare with the diameter of the gutters (d_2) are:

a.	$d_1 > d_2$	b.	$d_1 = d_2$	c.	$d_1 < d_2$

58. In order to provide a high-quality service for the life time of the building and a good behaviour under the temperature variations, the concrete sloping (screed to fall) layer is placed:

a.	under the thermal insulating layer	b.	over the thermal insulating layer

59. The vapour diffusion layer is located frequently:

a.	under the thermal insulating layer	b.	under the waterproof membrane

60. Generally the component parts of a roof are:

a.	the covering	b.	the structure	c.	accessories

61. The slope of the terrace (flat) roofs is:

a.	$p > 10\%$	b.	$p < 10\%$

62. The term of warm roof mean:

a.	pitched roofs	b.	compact roofs

63. The term of cold roof mean:

a.	pitched roofs	b.	compact roofs

64. The cross (transversal) or the longitudinal stability of a pitched roof is provided by:

a.	the rafters	b.	the purlins	c.	the collars and struts system

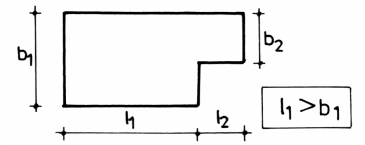
65. The design model of the batten according NP005/96 the effective design norm, is:

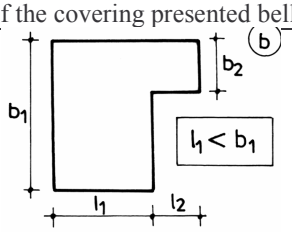
a.	continuous (multi-spanned) beam on multiple supports	b.	simply supported one span beam

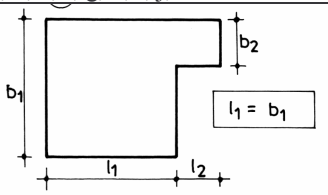
66. The prop in the case of a pitched roof is submitted to:

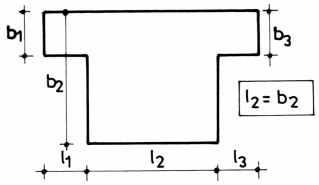
a. bending b. compression c. tension

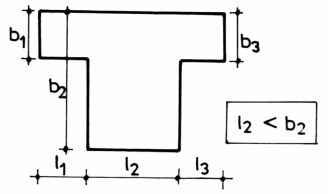
67. Draw and name the characteristic lines of a pitched roof, with more sloped plans of the same angle of inclination and with the plane form of the covering presented bellow: a, b, c, d, e, f, g, h, i, j, k.

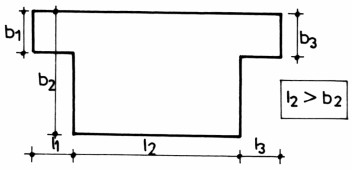
a. 

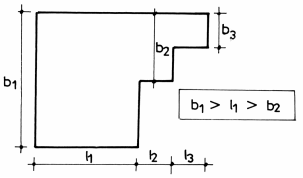
b. 

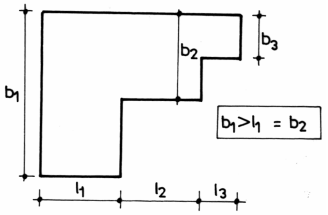
c. 

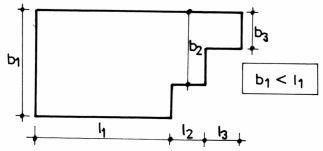
d. 

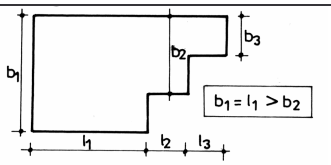
e. 

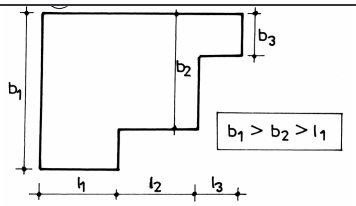
f. 

g. 

h. 

i. 

j. 

k. 

68. The design model of the rafter according NP005/96 the effective design norm, is:

a. continuous (multi-spanned) beam on multiple supports b. simply supported one span beam

69. The longitudinal frame structure of the classical timber pitched roof is composed of:

a. batten, rafter, purlin b. purlins, posts, horizontal collars and struts

70. What does it mean modular section?

a. Lxh b. hxH c. LxT

71. What parameters are used to determine the height up to the corbel level of the RC column?

a. Span b. Bay c. Modular section d. Flow sheet and manufacturing process

72. How do you consider the connection between girder and column of an industrial hall with longitudinal girders?

a. Continuity joining b. Fixed end c. Hinge

73. For what reason the ECP elements are designed with that particular geometrical shape?

a. Achievement of the covering functions b. Elimination of meteoric waters c. An increase of the inertia moment together with the increase of the bending moment

74. What does it mean ultimate load according to ultimate limit strength for ECP elements?

a.	Load due to wind action	b.	Long term load	c.	Load due to self weight and snow load

75. How do you determine the width of the RC columns for an industrial hall with longitudinal girder?

a.	Related to the support type of the crane girder	b.	Related to the support type of the longitudinal girder	c.	Related to the corbel height which support the crane girder

76. Consider a marginal RC column of an indistrial hall with transverse girder; What do you take into account to compute the loads due to self weights acting at corbel level on the RC column?

a.	Loads from the running assembly (crane rail, crane girder)	b.	Loads from the crane girder	c.	Loads from the temperature variation
d.	Weigth of the superior section (all elements above the corbel)	e.	Loads from cladding elements	f.	Loads from the transverse girder

77. Does the snow load produce bending moments on marginal columns of industrial hall with cranes?

a.	Yes	b.	No

78. How do you consider the wind action above the column-girder hinge level?

a.	As a uniformly distributed load on m^2	b.	As a uniformly distributed load on m	c.	As a concentrated force at the hinge level

79. How do you transmit the P_t^n to the columns of the industrial halls made of RC?

a.	Through RC corbels	b.	Through RC crane girder	c.	Throught extension RC plates attached to the flange of the crane girder

80. Do you consider the lift load when you compute the weight G for flexible suspension cranes?

a.	Yes	b.	No

81. For what situation do you design the temperature variation for an industriall RC hall?

a.	$L_{tronson}$=72 m	b.	$L_{tronson}$=42 m	c.	$L_{tronson}$=90 m

82. In case of applying the Displacement Method to solve a transverse frame with infinite rigid girder for an industrial hall having with 5 spans, what is the number of unknowns?

a.	5	b.	2	c.	1