

FUTURE SECURE INSTITUTE™

1. Water content (जलांश) Of soil can:-
 - a) Never be greater than 100%
 - b) between 0 to 100%
 - c) Be less than 0%
 - d) Be greater than 100%
2. A soil has bulk density (स्थूल घनत्व) 22kn/m^2 and Water content (जलांश) 10% the dry density of soil घनत्व क्या होगा:-
 - a) 18.6 kn/m^3
 - b) 20 kn/m^3
 - c) 33 kn/m^3
 - d) 23.2 kn/m^3
3. A well graded sandy soil have सुवर्गीय soil के लिए होगा:-
 - a) $c_u \geq 4$
 - b) $c_u \geq 6$
 - c) $c_u > 1$
 - d) $c_u > 3$
4. Ratio of volume of void (रन्ध्र) to volume of solid is:-
 - a) Porosity(n)
 - b) air content (ac)
 - c) void ratio (e)
 - d) None of above
5. The value of critical gradient (क्रांतिक ढाल) for a soil having void ratio(रिक्ता अनुपात) 0.67 and specific gravity 2.67 is:-
 - a) 0
 - b) 0.5
 - c) 0.75
 - d) 1
6. Coarse grain soil are best compacted by (मोटे कणों वाली soil):-
 - a) Drum roller
 - b) rubber roller
 - c) sheep foot roller
 - d) vibratory
7. Uniformity coefficient of soil is (c_u)- (समानता गुणांक का मान):-
 - a) D_{30}/D_{40}
 - b) D_{40}/D_{50}
 - c) D_{50}/D_{60}
 - d) D_{60}/D_{10}
8. Relationship between discharge velocity V and seepage velocity V_s is :-
 - a) $V_s = V/n$
 - b) $V_s = V/e$
 - c) $V_s = Vn$
 - d) $V_s = Ve$
9. According to is code allowable settlement of raft foundation on sand is :-
 - a) 25mm to 40 mm
 - b) 40 mm to 65 mm
 - c) 75 to 100
 - d) 100 to 120
10. Coefficient of active earth pressure (सक्रिय) for granular soil is:-
 - a) $1 + \sin\phi/1 - \sin\phi$
 - b) $1 + \cos\phi/1 - \cos\phi$
 - c) $1 - \sin\phi/1 + \sin\phi$
 - d) none
11. As per soil classification system silty sand :-
 - a) SW
 - b) SP
 - c) SM
 - d) SC
12. If degree of saturation (संतृप्तता अंश) of soil is 60% air content (हवा अंश) is:-
 - a) 40%
 - b) 60%
 - c) 80%
 - d) 100%

FUTURE SECURE INSTITUTE™

13. Which method is most accurate for determining water content(जलांश):-
a) Oven dry Method b) sand bath method c) calcium carbide d) none of above
14. Stoke's Law is valid for particle is:-
a) Less than 0.0002 mm b) greater than 0.2mm
c) between 0.2 and 0.0002 d) all above
15. Which soil has more plasticity index (सुघटयता सूचकांक):-
a) Sand b) silt c) clay d) gravel
16. A fully saturated soil (पूर्ण संतृप्त) has water content (जलांश) 200% if G is 2.6, than void ratio(रिक्क्ता अनुपात) is:-
a) 1.3 b) 2.6 c) 5.2 d) none of above
17. For determination (निर्धारण) of water content(जलांश) by oven dry method is at temperature:-
a) 100°C b) 100±10 c) 100±20 d) 110 ±10
18. According to terrzagi the net ultimate bearing capacity (शुद्ध धारक क्षमता) of clay is (शुद्ध चरम धारक क्षमता) clay क्षमता की होगी:-
19. Foundation is consider shallow foundation if its depth:-
a) CNc b) CNy c) CNq d) none
20. Constnt head permeability (स्थिर सिरा पारगम्यता) is use for:-
a) Silty soil b) organic soil c) coarse grain soil d) none
21. Westerguard Analysis is suitable for:-
a) Homogenous soil b) cohesive soil c) cohesion les soil d) straitified soil
22. Columb equation for shear strength (कर्तन सामर्थ्य) is :-
a) $c + s \tan \phi$ b) $c = s - e \tan \phi$ c) $s = c + e \tan \phi$ d) none
23. Which of the following test can not be done without undisturbing sampling:
a) Shear strength b) shear strength of clay c) compaction d) Atterberg
24. If a flow net has 4 flow channel and 20 equipotential drop than its shape factor (आकृति गुणांक क्या होगा):-
a) 1/5 b) 5 c) 80 d) none
25. Toughness index is define as the ratio of :-
a) Plasticity index and consistency index b) Plasticity index to flow index
c) Liquidity index to flow index d) None

FUTURE SECURE INSTITUTE™

26. The most suitable method for drainage of given grain soil:-
a) Well point system b) vacuum method c) electro osmosis method d) none
27. Undisturbed sample are obtain by:-
a) Direct excavator b) thin wall sampler c) thick wall sampler
28. Degree of block type foundation is:-
a) 2 b) 3 c) 4 d) 6
29. A sample of wet soil has a mass of 12 kg. on oven dry mass reduces to 10 kg. than water content (जलांश) is :-
a) 12% b) 20% c) 16.67% d) none
30. Complete the relation $S_e = -G \cdot$:-
a) W b) w c) e d) n
31. Plate load test is use full to estimate:-
a) Bearing capacity (धारक क्षमता) b) settlement c) a & b d) none
32. If porosity (सरन्ध्रता) of soil is 40% than void ratio (रिक्क्ता अनुपात) :-
a) 0.50 b) 0.667 c) 0.712 d) 0.583
33. Permeability (पारगम्यता) of soil is depend on:-
a) Size of particle b) shape of particle c) void ratio d) all of above
34. Relative density is used for:-
a) Cohesion less soil b) cohesive soil c) soil d) none
35. H piles is a type of pile:-
a) Concrete pile b) steel pile c) timber pile d) none
36. The void ratio (रिक्क्ता अनुपात) at the densest , loosest and natural stat are 0.2,0.6 and 0.4 than relative density will be:-
a) 90% b) 80% c) 50% d) 25%
37. Maximum differential settlement in isolated footing on sandy soil is :-
a) 40mm b) 100mm c) 65mm d) 25mm
38. Critical hydraulic gradient (क्रांतिक द्रवित ढाल) of soil is given by:-
a) $G-1/1+e$ b) $G+1/1+e$ c) $1+e/G-1$ d) none
39. Fill the blank :-
a) $Y_d = G_y w / 1+x$, $x =$ a) n b) e c) w d) s

FUTURE SECURE INSTITUTE™

40. $K_o = 1 - x$, $x =$ a) $\cos \theta$ b) $\sin \theta$ c) $\tan \theta$ d) $\sec \theta$
41. Element present in black cotton soil is :-
a) Kaolite b) clay c) Montmorillonite d) none
42. Gravel and sand belongs to following category :-
a) Alluvial (जलांश) b) cohesive (ससंजक) c) marine (समुद्री) d) None
43. An aggregate is known as cyclopean aggregate if its size is more than:-
a) 75 mm b) 4.75 mm c) 30 mm d) none
44. The relation b/w e and n is :-
a) $1 + e/1 - e$ b) $e = n(1 + n)$ c) $n = e/1 - e$ d) none
45. The ratio liquid limit - water content X 100 is :-
Plasticity index
a) Liquid index b) shrinkage ratio c) consistency Index
46. volume of void to volume of soil is called :-
a) porosity (n) b) void ratio c) s d) none
47. Relation b/w s, e, w, G is :-
a) $e = wG/s$ b) $w = eg/s$ c) $G = we/s$ d) none
48. clay is generally :-
a) cohesive (ससंजक) b) permeable c) cohesion less d) none
49. capillarity किसके कारण होता है:-
a) surface tension b) viscosity c) vapour pressure
50. bulking (स्थूलीकरण) of sand occurs due to:-
a) air in voids b) moisture in voids c) surface tension
51. The depth of foundation (नीव की गहराई) निकली जाती है:-
a) Rankine formula b) newtons formula c) gutters formula
52. Black cotton soil (काली कपासी मृदा) foundation के suitable लिए नहीं होती क्योंकि:-
a) Low bearing capacity b) cohesive particle c) black colour

FUTURE SECURE INSTITUTE™

53. optimum moisture content किसी test से निकला जाता है:-

- a) Triaxial test b) proctor test c) consolidation test d) all

54. The effective size of particles is denoted by:-

- a) D10 b) D20 c) D30 d) D60

55. यदि soil की plasticity index 0 है तो soil होगी:-

- a) clay b) silt c) sand d) a & b

56. एक soil की porosity 40% है, यदि $G=2.70$ तो dry density (क्या होगा):-

- a) 15.89 kn/m^3 b) 31.78 kn/m^3 c) 17.85 kn/m^3 d) 19.81 kn/m^3

57. load carrying capacity of foundation on sand depend होती है:-

- a) length of foundation b) depth of foundation
c) breadth of foundation d) size of foundation

58. यदि soil की dry unit weight (शुष्क घनत्व) 1.9 gm/cc और specific gravity 2.65 हो तो soil की porosity क्या होगी (n=?)

- a) 29.91 % b) 28.30 % c) 2.83 % d) none

59. The liquid limit (द्रव सीमा) और plastic limit 35% और 15% है। यदि flow index (प्रभाव सूचकांक) 10% हो तो, Toughness index होगा:-

60. यदि किसी soil की liquid limit और plastic limit 40% और 20% है तो Plasticity index (सुघट्यता सूचकांक) होगा:

- a) 10% b) 20% c) 30% d) none

61. The permeability (पारगम्यता) of soil is best determined by:-

- a) falling head (अस्थिर) method b) constant head (स्थिर सिरा)
c) oedometer d) none

62. Sheep foot roller, किस soil के लिए suitable होगा:-

- a) silts b) clay c) sand d) A & B

63. The correct relation b/w e and n:-

- a) $n=e/1-e$ b) $e=n/1+n$ c) $n=e/y_w$ d) none

64. एक soil का स्थूल घनत्व 2.3 g/cc और water content is 15% तो शुष्क घनत्व होगा:-

FUTURE SECURE INSTITUTE™

- a) 1 g/cc b) 1.5 g/cc c) 2g/cc d) 2.5 g/cc

65. undisturbed soil, किस sample से लेते हैं:-

68. यदि K = coefficient of permeability, Y_w = unit weight of water, M_v = coefficient of volume change (आयतन परिवर्तन गुणका) , तो C_v (coefficient of consolidation) होगा:-

- a) $C_v = k / (M_v X Y_w)$ b) $C_v = M_v Y_w / k$ c) $C_v = K X Y_w / M_v$ d) none

69. Density index (सापेक्ष घनत्व) होता है :-

- a) $I_o = (E_{max} - E) / (E_{max} - E_{min})$ b) $I_o = (E_{max} + E) / (E_{max} - E_{min})$
c) $I_o = (E_{max} - E) / (E_{max} + E_{min})$ d) none

70. Pycnometer क्या measure करता है:-

- a) void ratio(e) b) dry density c) water content d) all

71. In friction pile , load किसके through transfer होता है:-

- a) by skin b) by bottom c) both d) none

72. Air content (हवा अंश) और degree of saturation (s) के बीच relation है:-

- a) $a_c = 1 + s$ b) $A_c = 1 - s$ c) $A_c = s - 1$ d) none

73. The angle of failure plane with major principal plane is given by :-

- a) $45 + \phi$ b) $45 - \phi / 2$ c) $45 + \phi / 2$ d) All

74. निम्न मे से किस soil की permeability सबसे कम है:-

- a) clay b) sand c) silt d) gravel

75. darcy law किसके लिए apply नहीं है:-

- a) fine sand b) clay c) silts d) gravel

76. Density index किस soil के लिए use होते हैं:-

- a) cohesive soil b) cohesion less c) both d) none

77. standard proctor test soil maximum dry density 16 kn/m^3 मे की है, यदि soil की specific gravity 2.60 हो तो void ratio (e) होगा:-

FUTURE SECURE INSTITUTE™

- a) 0.552 b) 0.625 c) 0.721 d) 0.583

78. soil की permeability किस पर depend होती है:-

- a) size of particle b) shape of particle c) void ratio d) All

79. एक soil की, densest, loosest, natural state में void ratio, 0.2, 0.6 और 0.4 है तो soil की relation density होगी:-

- a) 90% b) 80% c) 50% d) 25%

80. The maximum differential settlement, isolated footing के लिए sand में होगा:-

- a) 40mm b) 100mm c) 65mm d) 25mm

81. sand particle are made of :-

- a) kaolinite b) illite c) montmorillonite d) quartz

82. यदि volume of void, solid के volume के equal हो तो, porosity(n) और void ratio(e) होगा:-

- a) 0 and 0 b) 1 and 0.5 c) 1 and 1 d) 0.5 and 1

83. यदि water का weight 2.16 gm और dry soil (शुष्क) का weight 27.63 gm हो तो water content (w) क्या होगा:-

- a) 7% b) 0.7% c) 7.8% d) 8.9%

84. find correct relation (सही सम्बन्धित करो):-

- a) $Y_d = (1 - n_a) / GY_w (1 + w_g)$ b) $Y_d = (1 - n_a) / GY_w (1 + e)$
c) $Y_d = (1 - n_d) GY_w / 1 + W_g$ d) none

85. यदि किसी soil की shrinkage limit 21% है, तो dry state में इस soil का void ratio(e) क्या होगा, यदि $G_s = 2.70$:-

- a) 0.79 b) 0.29 c) 0.49 d) 0.57

86. What will be depth of foundation (नींव की गहराई) by Rankine formula in a sandy soil if angle of repose 30° , bearing capacity 16 tonne/m^2 and unit weight 1680 kg/m^3

- a) 1.057 b) 1.00 mm c) 1.158m d) 1.601m

87. pycnometer is suitable for soil:-

- a) cohesive soil b) cohesionless soil c) both d) none

89. maximum height of capillarity is in soil:-

- a) clay b) sand c) silt d) none

90. loess (लाओस) soil transported by:-

- a) water b) air c) glacier d) none

FUTURE SECURE INSTITUTE™

91. well foundation is used for :-

- a) river b) for bridge c) for road d) All

92. Colluvial soil is a transported soil, which is transported by-

- a) Water b) air c) Gravity d) none

93. A soil has porosity (n) 25%, than void ratio (e) will be-

- a) 1.25% b) 0.75 c) 0.67 d) 01.60

94. Ratio of volume of voids to volume of solid is known as-

- a) porosity (e) b) void ratio (e) c) s d) none

95. Effective size is known as:-

- a) D10 b) D30 c) d60 d) none

96. If weight of soil is 80 gm and water content(w) 50% than after oven dry its weight will be:-

- a) 27 gm b) 46 gm c) 60 gm d) 100 gm

97. The Moisture content of a soil below which the soil

- a) Liquid limit b) plastic limit c) Shrinkage limit d) none

98. Stoke law is valid for particle range from

- a) Less than 0.0002 b) 0.2 mm-0.0002 mm
c) Greater than 0.2 mm d) all above

99. If IP of soil is 0 than soil will be.

- a) Clay b) sand c) Silt d) none

100. Difference of liquid limit and plastic limit is known a:-

- a) Plastic limit b) Liquidity index c) Plasticity index d) none

101. Unit weight of solid is 20g/cc than specific gravity of solid will.

- a) 2 b) 1 c) 3 d) None

102. Size of Boulder is taken as the size greater than:-

- a) 80mm b) 30 cm c) 30mm d) none

103. As per soil classification system silty sand is written as.

- a) sw b) sp c) sm d) sc

104. Water content of soil can be:-

FUTURE SECURE INSTITUTE™

- a) Never be greater than 100% b) between 0 to 100%
c) Can be greater than 100% d) none

105. The clay soil mainly consists of:-

- a) kaolites b) montmorillonite c) Illites d) vermiculite

106. Liquid limit is taken at number of blows:-

- a) 10 b) 1 c) 20 d) 25

107. Consistency of gravel is always:-

- a) 0% b) 10% c) 100% d) none

108. Aeolian soil is transported through.

- a) Air b) water c) both d) none

109. Relation between y_d , y_t and w is .

- a) $W = Y_d / (1 + Y_t)$ b) $w = Y_t / Y_d - 1$ c) $Y_t = Y_d / hw$ d) none

110. If degree of saturation is 60% than air content:-

- a) 60% b) 100% c) 50% d) none

111. Silt is formed by:-

- a) Physical weathering b) chemical Weathering c) Both d) none