Haramaya Universisty

Haramaya Institute of Technology

Department of Civil Engineering

2nd Mock Exam of Exit Exam

1. Index number expressing the relative sizes of both coarse and fine aggregates, is called
   A. Proportioning of aggregates
   B. Fineness modulus
   C. Grading of aggregates
   D. None of these

2. Which one of the following aggregates gives maximum strength in concrete?
   A. Rounded aggregate
   B. Elongated aggregate
   C. Flaky aggregate
   D. Cubical aggregate

3. Which of the following statement is **INCORRECT** about Ordinary Portland Cement (OPC), and Portland Pozzolana Cement (PPC)?
   A. The long-term strength of PPC is higher than OPC.
   B. PPC generates reduced heat of hydration than OPC.
   C. Early strength development of OPC is higher than PPC.
   D. OPC is a blended type of cement.

4. The process of mixing, transporting, placing, and compacting concrete using Ordinary Portland Cement should not take more than
   A. 30 minutes
   B. 40 minutes
   C. 60 minutes
   D. 75 minutes

5. For preparing a brick, the clay should be
   A. Sufficiently pure

B. Burned at high temperature
C. Of good plasticity
D. All the above.

6. The strength of timber is maximum when the load applied is
   A. Parallel to grain.
   B. Perpendicular to grain.
   C. Inclined at 45° to grain.
   D. Inclined at 60° to grain

7. Written documents issued by the appropriate government authority permitting the construction of a specific project are called
   A. Certificate of Occupancy
   B. Building Permit
   C. Change Order
   D. Addendum

8. Windows used for natural ventilation for commercial occupancy buildings shall have a minimum area of the opening part not less than:-
   A. One-tenth of the floor area of the space to be ventilated
   B. One-twentieth of the floor area of the space to be ventilated
   C. One-fifteenth of the floor area of the space to be ventilated
   D. One-fifth of the floor area of the space to be ventilated

9. What should be the size of the internal door of a residential building?
   A. (0.9 m x 2 m) to (1 m x 2 m)
   B. (1.0 m x 2.9 m) to (2.1 m x 3 m)
   C. (1.0 m x 3 m) to (2.1 m x 3 m)
   D. (0.9 m x 1 m) to (1 m x 3 m)

10. Which of the following type of foundation is used for the construction of a building on black cotton soil?

A. Mat foundation
B. Floating foundation
C. Inverted arch foundation
D. Grillage foundation

11. Which of the following types of walls is constructed to divide the space within the building?
    A. Curtain wall
    B. Party wall
    C. Partition wall
    D. Cavity wall

12. The height of Assembly Occupancy buildings with non-combustible construction shall not exceed
    A. 2-storeys
    B. 3-storeys
    C. 4-storeys
    D. 5-storeys

13. The contractor will not have to pay liquidated damages to the employer and is likely to be able to claim the direct costs and losses resulting from the delay to completion when the delay is due to:
    A. Late possession of the site and employer-inspired changes and variations
    B. Late delivery of materials
    C. Failing to schedule workers properly
    D. Project management problems

14. The advantage of pre-qualification in the procurement process to the client is
    A. Saves bidders from the cost of preparing bids
    B. Ensure award to least evaluated not lowest bidder
    C. Reduce lowballing bidders from participation
    D. Assure pre-qualified bidders for their bid considerations

15. The main purpose of preparing specifications in the construction industry is

A. Provide guidance for the execution of the work
B. Guide contractor for the purchase of materials
C. Serve the owner to know what she/he is intended to receive.
D. All of the above

16. What is the amount of fine aggregate in a mixture of $1m^3$ C-20 (1:2:3 mix) concrete? Use dry base analysis of 1.5
    A. 0.33
    B. 0.5
    C. 0.25
    D. 0.75

17. If the payment is done based on the actual quantities of the item of, works completed; that type of contract is referred as _____.
    A. Unit price contract
    B. Lump sum contract
    C. Cost plus percentage contract
    D. Turnkey contract

18. _____ is a process whereby the contractor makes sure that all installed mechanical, landscape, check dams, electrical parts and other required accessories are existing and operational
    A. Tendering
    B. Commissioning
    C. Tender evaluation
    D. Final Acceptance

19. As a project begins to wind down, the project manager should:
    A. Release all nonessential personnel so that they can be assigned to other projects
    B. Wait until the project is officially completed before releasing anyone
    C. Wait until the line manager officially requests that the people be released
    D. Talk to other project managers to see who wants your people

20. The major disadvantage of using bar charts to manage a project is that bar charts:

A. Do not show dependencies between activities
B. Are ineffective for projects under one year in length
C. Are ineffective for projects under 10 million birr in size
D. Do not identify start and end dates of a schedule

21. Duration along the critical path defines

I. Shortest duration needed.
II. Shortest duration permissible.
III. Longest duration needed.
IV. Longest duration permissible.

Select the correct statements from the given alternatives.

A. I and II
B. I and IV
C. II and III
D. III and IV

22. Among the following, one is not included among the key elements of time management.

A. Defining and sequencing activities.
B. Estimating activity resources.
C. Allocating as many professionals as possible for defined activities.
D. Developing and controlling the schedule

23. Which of the following is not a function of the contract administration activity?

A. Contract change management
B. Specification interpretation
C. Determination of contract breach
D. Selection of the project manager

24. In which type of contract arrangement is the contractor at the most risk of absorbing all cost overruns?

A. Cost plus percentage of cost

B. Lump sum
C. Unit price
D. Cost-plus-incentive-fee

25. Design of concrete sections involves the following **EXCEPT**

A. Determining the cross-sectional dimensions of concrete structural members
B. Determining the required quantity of reinforcement
C. Member span lengths
D. Strains and stresses of concrete and steel

26. Which one of the following is the NOT the deficiency of the Working Stress Design (WSD)

A. Elastic theory cannot give a reliable prediction of the strength of the members because inelastic strains are not taken into account
B. Reserve of strength in the inelastic range of stress-strain of concrete is not utilized
C. Modular ratio used in WSD is a good approximation and represent the actual creep
D. The method is conservative and hence results in uneconomical design

27. A 5m long simply supported reinforced concrete beam is subjected to a uniformly distributed factored load of 30 kNm. If 4ϕ20 bars are used for flexural capacity, what will be the section moment arm (Z) assuming equivalent rectangular stress block?

A. 240.125 mm
B. 214.5 mm
C. 230 mm
D. None

28. Even if they are more effective ideally, **inclined stirrups cannot be used** on beams resisting shear. What is the reason?

A. They can’t resist shear reversal if the load direction is changed
B. They are not economical
C. Shear cracks are vertical
D. Stirrups must be in the direction of the load

29. One of the following is **INCORRECT** about design codes.
    A. They ensure adequate structural safety, by specifying certain essential minimum requirements for design.
    B. They serve as a substitute for basic understanding and engineering judgment
    C. The codes ensure a measure of consistency among different designers
    D. They render the task of the designer relatively simple

30. A point outside the interaction diagram of a given column cross-section describes
    A. Larger cross-section
    B. Over-reinforced
    C. Adequate cross-section
    D. Inadequate cross-section

31. The Weak beam Strong Column Concept for the seismic design of moment-resisting frames implies that
    A. The dissipative zones should always be located in plastic hinges in the beams
    B. The dissipative zones should always be located in plastic hinges in the columns
    C. The dissipative zones may be located in columns: such as at the base of the frame and the top of the columns in the upper story of multi-story buildings
    D. The dissipative zones should always be located in plastic hinges in the beam-column joints

32. Which statement is **NOT** true about the direct design method of flat slabs?
    A. There must be a minimum of three continuous spans in each direction.
    B. Rectangular panels must have a long-span/short-span ratio that is greater than 2
    C. The direct-design method cannot be used for slabs in un-braced, laterally loaded frames
    D. The service (un factored) live load shall not exceed two times the service dead load

33. For a typical design of the slab, a 12mm diameter bar at 150mm centers is to be provided as the main reinforcement. However, due to the unavailability of the 12mm diameter of bars at the construction site, it was decided that the 12mm bars need to be changed into the 14mm bars. What should be the new spacing of bars?
    A. 175mm

B. 300.32mm
C. 204.17mm
D. 400mm.

34. At the location of the plastic hinge
    A. The radius of curvature is infinite
    B. Curvature is infinite
    C. Moment is infinite
    D. Flexural stress is infinite

35. Which of the following statement describes the yield line phenomenon
    A. The highly stressed zone normally acts as a plastic hinge where the subsequent loads are distributed to other regions of the slab
    B. Cracks develop forming patterns of yield lines until a mechanism is formed
    C. Collapse is indicated by increasing deflection under constant load
    D. All

36. What is the net section area of steel plate 40cm wide and 10mm thick with one bolt if diameter of bolt hole is 16mm?
    A. 368 mm^2
    B. 42.8 cm^2
    C. 38.4 cm^2
    D. 36.2 cm^2

37. Which of the following is true about torsional buckling?
    A. standard hot rolled shapes are not susceptible to torsional buckling
    B. failure occurs by bending about shear center in longitudinal axis
    C. failure occurs when torsional rigidity of member is greater than bending rigidity
    D. it cannot occur with doubly symmetric cross section

38. The maximum diagonal compression in a plate girder occurs;
    A. Above neutral axis
    B. Below neutral axis

C. At neutral axis

D. Does not occur

39. How to prevent the bolted connections failure due to the shear failure at the end of the member

A. By providing sufficient end distance

B. design tension members for the effective area

C. provide sufficient bolts of suitable diameter

D. None

40. Which of one of the following is not the advantages of Timber structures

A. Easy availability

B. It is inflammable

C. Non-conductor for electricity

D. Easy to work

41. The steel cross-section in which, the plastic hinge can be developed with sufficient rotation capacity to allow redistribution of moment with in the structure is;

A. Class-I or plastic cross-section

B. Class-II or compact cross-section

C. Class-III or semi-compact cross-section

D. Class-IV or thin-walled section

42. The most suitable foundation for a culvert is

A. Caisson foundation

B. Well foundation

C. Pile foundation

D. Spread foundation

43. Which one of the following is not a permanent bridge load?

A. Wearing surface

B. Vehicular loads

C. Weight of decks

D. None

44. Which one of the following is not true?
    A. The more lanes you have, the lesser chance that all will be loaded to max at the same time
    B. Dynamic allowance load factor should be considered in retaining wall as well as in foundation component
    C. Diaphragms are used at sufficient intervals to improve the resistance of the main girders against lateral torsion buckling.
    D. Total length of bridge is the overall distance between the rear wings wall or abutments and should be measured parallel to the alignment of bridge

45. Which one of the following is false?
    A. The availability of skilled labor and specified materials will influence the choice of a particular bridge type
    B. Concrete structures require more maintenance than steel structures.
    C. If future widening or replacement of bridge decks is a concern girder type bridge is best option
    D. If the alignment is on a curve, box and slab type bridges are best options

46. Movable bridges are built across
    A. Streams
    B. Rivers
    C. Dry valley
    D. Channels

47. Which one of the following is correct according to ascending order of economical span ranges of the following bridges?
    A. Culvert →Slab bridge →Arch bridge →T-girder bridge →Steel bridge → box girder bridge→ Cable stayed bridge→ suspension bridge
    B. suspension bridge → Cable stayed bridge → box girder bridge → Steel bridge → T-girder bridge → Arch bridge → Slab bridge →Culvert
    C. Culvert →Slab bridge →Arch bridge →T-girder bridge →Steel bridge → box girder bridge→ suspension bridge→ Cable stayed bridge
    D. Culvert →Arch bridge →T-girder bridge →Steel bridge → Slab bridge→ box girder bridge→ Cable stayed bridge→ suspension bridge

48. Which one of the following earthquake types is attributed with short period of response of the structure and high magnitude?
    A. It is Type-2
    B. It is Type-1
    C. a and b
    D. None

49. _____is the characteristic 10 minutes mean wind velocity, irrespective of wind direction and time of year, at 10m above ground level in open country terrain with low vegetation such as grass and isolated obstacles with separations of at least 20 obstacle heights.?
    A. Mean wind velocity
    B. Basic wind velocity
    C. Fundamental basic wind velocity
    D. All

50. Which one of the following sections of the vertical members is best suited for resisting lateral loads?
    A. l=400 & t=250
    B. l=750 & t=150
    C. l=400 & t=300
    D. None

51. Suppose you are structural Engineer and assigned in the design of G+3 building. Due to laboratory equipment at the top story and next consecutive stories, their weights are 10w,7.5w,4.5w and 3w for 3rd ,2nd,1st and Ground floor respectively. Where w represents weight and it is 500kg. Which one of the following is true about the building?
    A. Torsional irregularity
    B. Entrant corner irregularity
    C. Mass irregularity
    D. None

52. How many possible numbers of hinge will develop in one bay one storey fixed support equal legged frame with lateral load at the mid of column?

A. 2
B. 3
C. 4
D. 5

53. Which one of the following analysis methods could be used for the analysis of slab with opening?
    A. Coefficient method
    B. Yield line method
    C. Strip method
    D. B & C

54. Given that a zone has 275 household with car and 275 household without car and the average trip generation rates for each group is respectively 5.0 and 2.5 trips per day. Assuming that in the future, all household will have a car, find the future trips from that zone, assuming that the population and income remains constant
    A. 2062.5 trips/day
    B. 5500 trips/day
    C. 4125 trips/day
    D. 3210.2 trips/day

55. The data obtained from travel time and delay studies may be used in any one of the following traffic engineering tasks:
    A. Determination of the efficiency of a route with respect to its ability to carry traffic
    B. Development of programs related to traffic operations, for example street systems or traffic routing
    C. Capacity analyses, with respect to passenger-car equivalents of trucks
    D. Adjustment of traffic counts obtained by machines

56. From the following which one is not correct about the theoretical relationship between flow (q) and density (k) on a highway lane, represented by a parabola.
    A. As a flow increases, so does the density, until the capacity of the highway lane is reached.
    B. The point of maximum flow ($qmax$) corresponds to “optimal” density

C. the flow decreases as the density increases

D. At jam density (*kj*), the flow is almost increasing

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58. Which one is represents level of service B

A. Only the geometric design features of the highway, therefore, limit the speed of the car

B. The speed chosen by the driver is substantially affected by that of the other vehicles

C. Flows are maximized, with speed at approximately 50% of its maximum value

D. Represents reasonable free-flow conditions

59. It is observed that 40 traffic crashes occurred on a 17.5-mile long section of highway in one year. The ADT on the section was 5000 vehicles. Determine the rate of total crashes per 100 million vehicle-miles

A. 135.75 crashes / 100 mil. Veh-mi

B. 125.24 crashes / 100 mil. Veh-mi

C. 116.04 crashes / 100 mil. Veh-mi

D. 152.34 crashes / 100 mil. Veh-mi

60. The improper alignment of road will not result in _____

A. Increase in construction cost

B. Increase in maintenance cost

C. Increase of population

D. Increase in accidents

61. One of the following statements is true about the geometric design of a given highway section.

A. The designer should be taker for maintaining the maximum radius in a horizontal curve

B. The designer should be taker for maintaining the maximum gradient in the vertical alignment design.
C. The designer should be taker for maintaining the maximum radius in a horizontal curve
D. In a given section of the highway, if there is a problem of overturning vehicles, the solution is to increase the design speed of the section.

62. The design speed on a highway is 60kmph; calculate the super elevation if radius of curve is 150m and coefficient of friction is 0.15.

A. 0.07
B. 0.038
C. 0.04
D. 0.15

63. Free-haul distance is

A. The length of a balancing line.
B. The distance between two balancing lines
C. The distance from the working face of the excavation to the tipping point
D. The distance up to which carting of excavated material is done without extra payment.

64. The side drains and partially filled culverts are designed on the basis of

A. Open channel flow
B. Hydrological analysis
C. Pavement geometry
D. Run off

65. The most complex type of intersections for traffic operation is

A. Un-channelized
B. Channelized
C. Rotary
D. Grade separated

66. Which one of the following is False about full depth asphalt pavement structure?

A. When the local materials are not available
B. High trafficable area
C. constructed by placing bituminous layers directly on the soil sub-grade.
D. layered systems with high quality expensive materials are placed in the top where stresses are high, and low-quality cheap materials are placed in lower layers.

67. When does shear stress occur in the pavement?
A. Friction between pavement and tyre
B. Seepage into subgrade
C. Loading exceeds capacity
D. Weathering of the pavement surface

68. Mechanical stabilization is done with the help of:
A. Cement
B. Lime
C. Bitumen
D. Proper grading

69. The primary factors that should be considered in the suitability of the subgrade and subsoil.
A. The general characteristics of the subgrade soils such as soil classification, limits.
B. Depth to bed rock and Depth to water table.
C. The CBR that the compacted subgrade and uncompacted subgrade will have under local environmental conditions. In-place densities are satisfactory.
D. The presence of weak of soft layers in the sub-soil and Susceptibility to detrimental frost action.
E. All of the above

Answer: E

70. A Marshall specimen is prepared for bituminous material with a bitumen content of 5% by weight of total mix. The theoretical and measured unit weights of the mix are 2.442 gm/cc and 2.345 gm/cc respectively. The bitumen has a specific gravity of 1.02. The percentage voids in mineral aggregate filled with bitumen (VFB) are:

A. 34.55
B. 39.9
C. 73.55

D. 74.3

71. In AASHTO design guides, which one of the following addresses the structural capacity of a flexible pavement layers

A. Slab thickness
B. Structural number
C. A and B
D. All of the Above

72. The temporary structures that are built to enclose certain worksite is_____

A. Timber dam
B. Storage dam
C. Cofferdam
D. Steel dam

73. At a certain point in the floor of weir, the uplift pressure head due to seepage is 4.5 m. If the relative density of concrete is 2.5, the minimum thickness of floor required at this point to counteract the uplift pressure is

A. 1 m
B. 2 m
C. **3 m**
D. 4 m

74. Which failure occurs when the minimum stress exceeds the allowable compressive stress of the dam material?

A. Overturning
B. Crushing
C. Sliding
D. By development of tension

75. The appropriate value of the estimated average life of dam reservoir is
    A. 25 years
    B. 50 years
    C. 75 years
    D. None of them

76. The velocity of flow of water (v) through a soil stratum of permeability K and porosity n as per Darcy's equation is given by
    A. $V= Ki$
    B. $V= KiA$
    C. $V= Kin$
    D. $V= Kin^{1/2}$

77. A hydraulic jump ensures
    A. Change of subcritical flow to supercritical flow
    B. Change of supercritical flow to subcritical flow
    C. Change of subcritical flow to critical flow
    D. Change of supercritical flow to critical flow

78. A load of 2000 kN is uniformly distributed over an area of 3m x2m.The average vertical stress at a depth 2m using 2:1 distribution is:
    A. 160 kN/m^2
    B. 100 kN/m^2
    C. 48 kN/m^2
    D. 37 kN/m^2

79. For a homogeneous earth dam 50 m high having 2 m free broad, a flow net was constructed and the results were : Number of potential drops = 2.4, Number of flow channels = 0.4. If coefficient of permeability of the dam material is 3×10^{-3} cm^3 /sec, the discharge per meter length of dam, is
    A. 12×10^{-5} m^3 /sec
    B. 24×10^{-3} m^3 /sec
    C. 6×10^{-5} m^3 /sec
    D. 24×10^{-5} m^3 /sec

80. As per the unified soil classification system (USCS), the type of soil represented by “MH” is:
    A. Inorganic silts of high plasticity with liquid limit more than 50%.
    B. Inorganic silts of low plasticity with liquid limit less than 50%.
    C. Inorganic Clays of high plasticity with liquid limit less than 50%.
    D. Inorganic clays of low plasticity with liquid limit more than 50%.

81. The total and effective stresses at a depth of 5 m below the top level of water in a swimming pool are respectively
    A. Zero and zero
    B. 49.05 kN/m² and zero
    C. 49.05 kN/m² and 49.05 kN/m²
    D. 60 kN/m² and 49.05 kN/m²

82. The ultimate consolidation settlement of a structure resting on a soil
    A. Decreases with the increase in the initial voids ratio
    B. Decreases with the decrease in the plastic limit
    C. Increases with the increase in the initial voids ratio
    D. Increases with the decrease in the porosity of the soil

83. If C_v is the coefficient of consolidation, is the time and is drainage path of one-dimensional consolidation of soil, the time factor T_v, is given by
    A. $Tv = d^2/C_v\, t$
    B. $Tv = t^2/d^2C_v$
    C. $Tv = C_v^3/d^2t$
    D. $Tv = C_v\, t/d^2$

84. A triaxial shear test is preferred to direct shear test, because:
    A. It can be performed under all three drainage conditions with complete control
    B. Precise measurement of pore pressure and change in volume during test, is not possible
    C. Stress distribution on the failure plane, is non uniform
    D. None of these

85. The intensity of active earth pressure at a depth of 10 meters in dry cohesionless sand with an angle of internal friction of 30° and with a unit weight of 1.8 t/m^3, is
    A. 4 t/m^2
    B. 5 t/m^2
    C. 6 t/m^2
    D. 7 t/m^2

86. Two footings one circular and other square are founded on a purely cohesive soil. The diameter of circular footing is the same as the length of side of the square footing then the ratio of ultimate bearing pressure of circular to square is;
    A. 0.75
    B. 1.33
    C. 1.0
    D. 0.785

87. The rise of water table below the foundation influences the bearing capacity of soil mainly by reducing:
    A. Cohesion and effective angle of shearing resistance
    B. Cohesion and effective unit weight of soil
    C. Effective unit weight of soil and effective angle of shearing resistance
    D. Effective angle of shearing resistance

88. A soil mass is said to be in plastic equilibrium if:
    A. It is stressed to maximum
    B. It is on the verge of failure
    C. It is in plastic stage
    D. It starts flowing.

89. One of the following is not the purposes of a soil investigation:
    A. To evaluate the general suitability of the site for the proposed project.
    B. To enable an adequate and economical design to be made.
    C. To disclose and make provision for difficulties that may arise during construction due to ground and other local conditions.

D. None

90. The following depths of boreholes for various foundation conditions may be used.
    A. For widely spaced strip of pad foundations, boring depth should be deeper than 1.5 times the width of the foundation.
    B. For raft foundations, boring depth deeper than 1.5 times width of raft should be used.
    C. For group of piled foundation on soil, boring depth should be deeper than 1.5 times width of pile group, the depth being measured from a depth of two- thirds of the length of the piles.
    D. All

91. In what instances do you recommend a strap footing over a combined one?
    A. When the distance between the column is large
    B. For bridging over areas that cannot be loaded, such as pits, shallow culverts and tunnels
    C. A and B
    D. None

92. One of the following is true about mat/raft foundation:
    A. It is a large concrete slab supporting several columns in two or more rows.
    B. It is used where the supporting soil has low bearing capacity.
    C. It is used for supporting structures that are sensitive to differential settlement.
    D. All

93. What is the dimensions of a square footing necessary to sustain an axial column load of 850kN and an allowable presumptive bearing pressure of 150kN/m^2?
    A. 5.82 x 5.82m
    B. 2.38 x 2.38m
    C. 3.54 x 3.54

D. All

94. The deep foundation failure (overall stability) of retaining wall should be investigated:
    A. If water pressure is available.
    B. If layer of weak soil is located within a depth of about 1 ½ times the height of the retaining wall
    C. If the soil is cohesive soils
    D. If Surcharge loads is found on the retaining wall

95. A circular concrete pile of 10 m length is driven into a deep layer of uniform homogeneous clay strata. Average unconfined compressive strength of the clay soil determined through laboratory tests on undisturbed samples extracted from the clay strata is 100 kPa. If the ultimate load capacity of the driven pile is 1,000 kN, the required diameter of the pile is ___cm. (*Note*: Bearing capacity factor, $Nc = 9$; adhesion factor, $\alpha = 0.75$; Factor of Safety, $F.S = 2.5$)
    A. 50
    B. 80
    C. 70
    D. 60

96. Which one of the following is **NOT** the effect of sanitary landfills on the environment?
    A. Ground water contamination
    B. Affects soils and plant growth
    C. Toxicity to fish and aquatic organisms
    D. None of above

97. Drilled Pier foundations are adversely affected by a soil behaviour due to swelling of the soil in the wet season, and in turn decreases the pier's ability to support building loads. This swelling during wet season causes straining to the soil and become great enough that the pier falls mostly because of;
    A. Loss of point bearing
    B. Loss of material strength
    C. Loss of skin friction
    D. All of above

98. For the soil possessing a marginal or high swelling potential, which one of the following precautions need to be taken;
    A. Replacing the expansive soil
    B. Changing the nature of the expansive soil
    C. Constructing structures that are flexible enough
    D. All of above

99. For a cellular cofferdam embedded in clay stratum of cohesion, C = 30 kpa, cut height, H = 10m & Unit weight, γ = 18 kN/m^3, the factor of safety of against bearing failure of will be;
    A. 0.95
    B. 1.0
    C. 1.50
    D. 0.85

100. Which one of the followings is **NOT** a mechanism to obviate sanitary landfill leachate migration and allow its collection, monitoring and subsequent treatments?
    A. Flexible Membrane Liners (FML)
    B. Impermeable clay liners
    C. Geomembrane
    D. Sandy Gravel Soil