MAHARAJA RANJIT SINGH PUNJAB TECHNICAL UNIVERSITY, BATHINDA

Entrance Exam. for Ph. D. (Civil Engineering)

1. In geodetic surveys higher accuracy is achieved, if
   a) Curvature of the earth surface is ignored
   b) Curvature of the earth surface is taken into account
   c) Angles between the curved lines are treated as plane angles
   d) None of these

2. A well-conditioned triangle has no angle less than
   a) 20^0
   b) 30^0
   c) 45^0
   d) 60^0

3. The force acting on a point on the surface of a rigid body may be considered to act
   a) at the centre of gravity of the body
   b) on the periphery of the body
   c) on any point on the line of action of the force
   d) at any point on the surface normal to the line of action of the force

4. The forces which meet at one point and have their lines of action in different planes are called
   a) coplaner non-concurrent forces
   b) non-coplaner concurrent forces
   c) non-coplaner non-current forces
   d) intersecting forces

5. When two plates butt together and are riveted with two cover plates with two rows of rivets, the joint is known as
   a) lap joint
   b) butt join
   c) single riveted single cover butt joint
   d) double riveted double cover butt joint

6. A bending moment may be defined as :
   a) arithmetic sum of the moments of all the forces on either side of the section
   b) arithmetic sum of the forces on either side of the section
   c) algebraic sum of the moments of all the forces on either side of the section
   d) none of these

7. Water belongs to
   a) Newtonian fluids
   b) non-Newtonian fluids
   c) compressible fluid
   d) none of these.

8. Fluids change the volume under external presssure due to
   a) plasticity
   b) viscosity
   c) compressibility
   d) none of these

9. Unit of kinematic viscosity is
   a) m^2/sec
   b) Newton sec/m^2
   c) Newton sec/m^3
   d) Kg sec/m^2

10. Hydrology is the science which deals with
    a) rain water
    b) river water
    c) sea water
    d) surface and underground water

11. The surface Run-off is the quantity of water
    a) absorbed by soil
    b) intercepted by buildings and vegetative cover
    c) required to fill surface depressions
    d) that reaches the stream channels

12. Hydrograph is a graphical representation of
    a) surface run off
    b) ground water flow
    c) rain fall
    d) discharge flowing in the river

13. The sludge does not contain waste water from
    a) bath rooms
    b) wash basins
    c) kitchen sinks
    d) toilets

14. With self cleansing velocity in sewers
    a) silting occurs at bottom
    b) scouring occurs at bottom
    c) both silting and scouring occur at bottom
    d) neither silting nor scouring occurs at bottom

15. Which one of the following gases is most significant as air pollutant
    a) Carbondioxide
    b) Oxygen
    c) Nitrogen
    d) Sulphurdioxide

16. Chlorination of water is done for the removal of
    a) bacterias
    b) suspended solids
    c) sediments
    d) hardness

17. Per capita demand of water is calculated in litres
    a) per person per day
    b) per person per month
    c) per person per year
    d) none of these

18. The capability of a soil mass of full width and depth to transmit water, is known
    a) porosity
    b) permeability
    c) transmissibility
    d) none of these.

19. Which support type allows translation in one direction but restrains rotation and translation in the perpendicular direction:
    a) pinned support
    b) hinged support
    c) roller support
    d) fixed support

20. The most important and widely used tube well in India, is
    a) strainer well
    b) cavity well
    c) slotted well
    d) perforated pipe well

21. Cohesionless soil is
    a) sand
    b) silt
    c) clay
    d) clay and silt

22. The ratio of the volume of voids to the total volume of the given soil mass, is known as
    a) porosity
    b) specific gravity
    c) void ratio
    d) water content

23. Stoke's law sates that the velocity at which a grain settles out of suspension, the other factors remaining constant, is dependent upon
    a) shape of grain
    b) weight of grain
    c) size of grain
    d) shape, size and weight of grain

24. The phreatic line in an earth dam may be
    a) circular
    b) elliptical
    c) parabolic
    d) a straight line

25. The strength and quality of concrete, depend upon :
    a) grading of aggregates
    b) surface area of aggregates
    c) shape of aggregates
    d) all the above

26. Vicat's apparatus is used for
    a) fineness test
    b) consistency test
    c) setting time test
    d) soundness test

27. If the proportions of different ingredients (cement, sand and aggregate) are in the ratio of 1:2:4, then the grade of concrete is:
    a) M10
    b) M15
    c) M20
    d) M25

28. Ordinary Portland cement is manufactured from
    a) lime stone and clay
    b) gypsum and lime
    c) pozzolona
    d) lime, pozzolona and clay

29. In a singly reinforced beam
    a) compression is borne entirely by concrete
    b) steel possesses initial stresses when embeded in concrete
    c) plane sections transverse to the centre line of the beam before bending remain plane after bending
    d) elastic modulii for concrete and steel have different values within the limits of deformation of the beam

30. A foundation is called shallow if its depth, is
    a) one-fourth of its width
    b) half of its width
    c) three-fourth of its width
    d) equal to its width

31. The advantage of a concrete pile over a timber pile, is
    a) no decay due to termites
    b) no restriction on length
    c) higher bearing capacity
    d) all the..above

32. California Bearing Ratio method of designing flexible pavements is more accurate as it involves
    a) characteristics of soils
    b) traffic intensities
    c) character of the road making materials
    d) none of these

33. The ratio of longitudinal stress' to strain within elastic limit, is known as
    a) modulus of elasticity
    b) shear modulus of elasticity
    c) bulk modulus of elasticity
    d) tangent modulus of elasticity which a structural member

34. Traffic surveys are carried out
    a) to know the type of traffic
    b) to determine the facilities to traffic regulations
    c) to design proper drainage system
    d) all the above

35. The number of vehicles moving in a specified direction on a roadway that pass a given point during specified unit of time, is called
    a) traffic volume
    b) traffic density
    c) basic capacity
    d) traffic capacity

36. Critical path lies along the activities having total float
    a) positive
    b) negative
    c) zero
    d) same

37. In long and short wall method of estimation, the length of long wall is the centre to centre distance between the walls and
    a) breadth of the wall
    b) half breadth of wall on each side
    c) one fourth breadth of wall on each side
    d) none of these

38. If the formation level of a highway has a uniform gradient for a particular length, and the ground is also having a longitudinal slope, the earthwork may be calculated by
    a) Mid-section formula
    b) Trapezoidal formula
    c) Prismoidal formula
    d) All the above

39. The standard size of masonry bricks, is
    a) 18 cm x 8 cm x 8 cm
    b) 19 cm x 9 cm x 9 cm
    c) 20 cm x 10 cm x 10 cm
    d) 21 cm x 11 cm x 11 cm

40. Bulking of sand is caused due to
    a) surface moisture
    b) air voids
    c) viscosity
    d) clay contents

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Answer Key of Entrance Exam. for Ph. D. (Civil Engineering)

1. b	15. d	29. c
2. b	16. a	30. d
3. c	17. a	31. d
4. b	18. b	32. c
5. d	19. c	33. a
6. c	20. a	34. d
7. a	21. a	35. a
8. c	22. a	36. c
9. a	23. d	37. b
10. d	24. a	38. d
11. d	25. d	39. b
12. d	26. b	40. a
13. d	27. b	
14. d	28. b	

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