1. The normal component of a force inclined through θ° is obtained by multiplying the force by

a. sin θ

b. cos θ

c. tan θ

d. sin θ cos θ

e. sin2θ

2. If ΣH and ΣV are the algebraic sums of the forces resolved horizontally and vertically respectively, and ΣM is the algebraic sum of the moments of forces about any point, for the equilibrium of the body acted upon

a. ΣH = 0

b. ΣV = 0

c. ΣM = 0

d. all the above.

3. Shear strain energy theory for the failure of a material at elastic limit, is due to

a. Rankine

b. Guest or Trecas

c. St. Venant

d. Haig

e. Von Mises.

4. In plastic analysis, the shape factor for rectangular section, is

a. 1.4

b. 1.5

c. 1.6

d. 1.7

5. Pick up the correct statement from the following:

a. Hoop strain of the walls of a cylinder due to liquid is

b. Longitudinal strain in the walls of a cylinder due to liquid is

c. Volumetric change in the cylinderdue to liquid is

d. All the above.

6. If the radius of a simple curve is R, the length of the chord for calculating offsets by the method of chords produced, should not exceed.

a. R/10

b. R/15

c. R/20

d. R/25.

7. Pick up the correct statement from the following :

a. the eyepiece plays no part in defining the line of sight

b. the diaphragm plays no part in defining the line of sight

c. the optical centre of the objective plays no part in defining the line of sight

d. none of these.

8. Offsets are measured with an accuracy of 1 in 40. If the point on the paper from both sources of error (due to angular and measurement errors) is not to exceed 0.05 cm on a scale of 1 cm = 20 m, the maximum length of offset should be limited to

a. 14.14

b. 28.28 m

c. 200 m

d. none of these.

9. Diopter is the power of a lens having a focal length of

a. 25 cm

b. 50 cm

c. 75 cm

d. 100 cm

e. 125 cm

10. The sensitiveness of a level tube decreases if

a. radius of curvature of its inner surface is increased

b. diameter of the tube is increased

c. length of the vapour bubble is increased

d. both viscosity and surface tension are increased.

11. In chain surveying field work is limited to

a. linear measurements only

b. angular measurements only

c. both linear and angular measurements

d. all the above.

12. Two concave lenses of 60 cm focal length are cemented on either side of a convex lens of 15 cm focal length. The focal length of the combination is

a. 10 cm

b. 20 cm

c. 30 cm

d. 40 cm

13. The under surface of an arch, is called

a. soffit

b. intrados

c. haunch

d. back.

14. In English garden wall bond

a. one course of headers to three or five course of stretchers

b. queen closer in provided in each heading course

c. the middle course of stretchers is started with a header to give proper vertical joints

d. all the above.

15. In case of Raymond pile

a. lengths vary from 6 m to 12 m

b. diameter of top of piles varies from 40 cm to 60 cm

c. diameter of pile at bottom varies from 20 cm to 28 cm

d. thickness of outer shell depends upon pile diameter

e. all the above.

16. To ensure that supporting area of an offset footing of a boundary wall is fully compressive, the C.G. of load must act

a. at the centre of the base

b. within the middle third of the base

c. within the middle fifth of the base

d. neither (a), (b) nor (c).

17. A solid core of rock is formed in side the cylinder in the case of

a. auger boring

b. percussion drilling

c. diamond drilling

d. wash boring.

18. The line of intersection of the surfaces of a sloping roof forming an external angle exceeding 180°, is

a. ridge

b. hip

c. valley

d. none of these.

19. Curing a concrete for long period ensures better

a. volume stability

b. strength

c. water resistance

d. water tightness and durability

e. all the above.

20. Construction joints are provided

a. where B.M. and S.F. are small

b. where the member is supported by other member

c. at 18 m apart in huge structures

d. in concrete wall at sill level of windows

e. all the above.

21. Curing

a. reduces the shrinkage of concrete

b. preserves the properties of concrete

c. prevents the loss of water by evaporation

d. all of the above.

22. Pick up the correct statement from the following:

a. The weight of ingredients of concrete mix, is taken in kilograms

b. Water and aggregates are measured in litres

c. The finished concrete is measured in cubic metres

d. 20 bags of cement make one tonne

e. All the above.

23. After casting, an ordinary cement concrete on drying

a. expands

b. mix

c. shrinks

d. none of these.

24. Site order book is used for recording

a. instructions by the executive engineers

b. construction measurements

c. issue of store equipments

d. names of the casual labour.

25. An Executive Engineer may have powers upto

a. Rs. 25,000

b. Rs. 50,000

c. Rs. 100,000

d. Rs. 200,000

e. Rs. 500,000

26. The difference between the time avail-to do a job and the time required to do the job, is known as

a. event

b. float

c. duration

d. constraint.

27. The technique for establishing and maintaining priorities among the various jobs of a project, is known

a. Event flow scheduling technique

b. Critical ratio scheduling

c. Slotting technique for scheduling

d. Short interval scheduling.

28. The first method invented for planning projects, was

a. Bar chart method

b. Milestone chart

c. Critical path method (CPM)

d. Programme Evaluation and Review Technique (PERT)

29. Military organisation is known as

a. line organisation

b. line and staff organisation

c. functional organisation

d. none of these.

30. A coarse-grained soil has a voids ratio 0.75, and specific gravity as 2.75. The critical gradient at which quick sand condition occurs, is

a. 0.25

b. 0.50

c. 0.75

d. 1.00

31. Degree of saturation of a natural soil deposit having water content 15%, specific gravity 2.50 and void ratio 0.5, is

a. 50%

b. 60%

c. 75%

d. 80%

32. Which one of the following statements is true ?

a. Clays are more porous than sands

b. Pressure of organic matter in a soil decreases the bearing capacity of the soil

c. Aluminous cement is used for foundations in soils with chemical deposits

d. All the above.

33. When drainage is permitted under initially applied normal stress only and full primarily consolidation is allowed to take place, the test is known as

a. quick test

b. drained test

c. consolidated undrained test

d. none of these.

34. The effective size of particles of soil is denoted by

a. D10

b. D20

c. D30

d. D60

35. The internal molecular attraction of a soil, the cohesion

a. decreases as the moisture content increases

b. increases as the moisture content decreases

c. is more in well compacted clays

d. depends upon the external applied load.

36. The height of the sink of wash basin above floor level is kept

a. 60 cm

b. 70 cm

c. 75 cm to 80 cm

d. 80 cm

37. Brick walls are measured in sq. m if the thickness of the wall is

a. 10 cm

b. 15 cm

c. 20 cm

d. None of these.

38. The area is measured correct to the nearest

a. 0.01 sqm

b. 0.02 sqm

c. 0.03 sqm

d. 0.04 sqm

e. 0.05 sqm

39. The inspection pit or chamber is a manhole provided in a base drainage system

a. at every change of direction

b. at every change of gradient

c. at every 30 m intervals

d. at the point where vertical soil pipe joins the house drain

e. All the above.

40. The detention period in a septic tank is assumed

a. 20 minutes

b. 25 minutes

c. 30 minutes

d. 40 minutes

41. If P is principal amount, i is the rate of interest and n is the number of periods in years, then the interest factor is :

a. (1 + ni)

b. (ni - 1)

c. ni

d. None of these

42. The product of CAF (S P) and PWF (S P) is:

a. 1/2

b. 1

c. 1/3

d. 1/4

43. A construction estimate is used

a. to judge tentatively or approximate value of the project

b. to produce a statement of the approximate cost

c. to decide an approximation of the value of the project and not the exact cost.

d. None of these