\*\*\*Sub Engineer\*\*\*

1. Pick up the correct statement from the following:

a. the theodolite in which telescope can be rotated in vertical plane is called a transit

b. when the vertical circle is to the left of the telescope during observation, it is called to be in left face

c. when the vertical circle is to the right of the telescope during observation, it is called to be in right face

d. all the above.

2. Keeping the instrument height as 1.5 m, length of staff 4 m, the slope of the ground as 1 in 10, the sight on the down-slope, must be less than

a. 30 m

b. 25 m

c. 20 m

d. 15 m

3. The accuracy of measurement in chain surveying, does not depend upon

a. length of the offset

b. scale of the plotting

c. importance of the features

d. general layout of the chain lines.

4. If θ is the slope of the ground and l is the measured distance, the correction is

a. 2l sin2 θ/2

b. 2l cos2 θ/2

c. 2l tan2 θ/2

d. 2l cot2 θ/2.

5. Bitumen felt

a. is used as water proofing material

b. is used as damp proofing material

c. is made from bitumen and hessian fibres

d. all the above.

6. Fibre glass

a. has a higher strength to weight ratio

b. is shock proof and fire retardent

c. does not decay

d. all the above.

7. The rocks which are formed due to cooling of magma at a considerable depth from earth's surface are called

a. Plutonic rocks

b. Hypabyssal rocks

c. Volcanic rocks

d. Igneous rocks.

8. For filling cracks in masonry structures, the type of bitumen used, is

a. cut-back bitumen

b. bitumen-emulsion

c. blown bitumen

d. plastic bitumen.

9. For calculating the allowable stress of long columns. The empirical formula , is known as

a. Straight line formula

b. Parabolic formula

c. Perry's formula

d. Rankine's formula.

10. In plastic analysis, the shape factor for a triangular section, is

a. 1.5

b. 1.34

c. 2.34

d. 2.5

11. The shear stress at any section of a shaft is maximum

a. at a distance r/2 from the centre

b. at the top of the surface

c. at a distance 3/4 r from the centre

d. none of these.

12. A solid cube is subjected to equal normal forces on all its faces. The volumetric strain will be x-times the linear strain in any of the three axes when

a. x = 1

b. x = 2

c. x = 3

d. x = 4.

13. Most economical section of a circular channel for maximum discharge

a. hydraulic mean depth = 0.286 diameter of circular section

b. wetted perimeter = 2.6 diameter of circular section

c. wetted perimeter = 2.83 depth of water

d. all the above.

14. An independent mass of a fluid does not posses

a. elevation energy

b. kinetic energy

c. pressure energy

d. none of these.

15. A tank 4m x 3m x 2m containing an oil of specific gravity 0.83 is moved with an acceleration g/2 m/ sec2. The ratio of the pressures at its bottom when it is moving vertically up and down, is

a. 2

b. 3

c. 1/2

d. 1/3

16. The phenomenon occuring in an open channel when a rapidly flowing stream abruptly changes to a slowly flowing stream causing a distinct rise of liquid surface, is

a. water hammer

b. hydraulic jump

c. critical discharge

d. none of these.

17. The coefficient of compressibility of soil, is the ratio of

a. stress to strain

b. strain to stress

c. stress to settlement

d. rate of loading to that of settlement.

18. Pick up the correct statement from the following:

a. When water table is above the base of a footing, the dry weight m should be used for soil below water table

b. When water table is located somewhat below the base of a footing, the elastic wedge is partly of moist soil and partly of submerged soil, and a suitable reduction factor is used

c. When water table is just at the base of the footing, no reduction factor is used

d. None of these.

19. Pick up the correct statement from the following:

a. Silty clayloam contains highest percentage of silt

b. Stiff boulder clay offers maximum shear strength

c. Soft chalk carries least safe load

d. All the above.

20. Under-reamed piles are generally

a. driven piles

b. bored piles

c. precast piles

d. all the above.

21. An R.C.C. column is treated as long if its slenderness ratio is greater than

a. 35

b. 40

c. 50

d. 60

22. If T and R are tread and rise respectively of a stair, then

a. 2R + T = 60

b. R + 2T = 60

c. 2R + T = 30

d. R + 2T= 30

23. Design of R.C.C. simply supported beams carrying U.D.L. is based on the resultant B.M. at

a. supports

b. mid span

c. every section

d. quarter span.

24. Dimensions of a beam need be changed if the shear stress is more than

a. 10 kg/cm2

b. 15 kg/cm2

c. 20 kg/cm2

d. 25 kg/cm2

25. Pick up the incorrect statement from the following:

a. No timbering is required for shallow trenches

b. Shallow foundations can be constructed on made-up soil

c. Grillage foundation is classified as a shallow foundation

d. Black cotton soil is very good for foundation bed.

26. Dado is usually provided in

a. bath rooms

b. living rooms

c. verandah

d. roofs.

27. Workability improved by adding

a. foaming agent

b. oily-agent

c. aluminium compound

d. all the above.

28. Hydration of cement is due to chemical action of water with

a. Tricalcium silicate and dicalcium silicate

b. Dicalcium silicate and tricalcium aluminate

c. Tricalcium aluminate and tricalcium alumino ferrite

d. All the above.

29. The specific retention is least in case of

a. Clay

b. Sand

c. Silt

d. Coarse gravel.

30. The fire demand of a city may be worked out by

a. Freeman formula

b. Under Writers formula

c. Bustan's formula

d. All the above.

31. When drainage to sewage ratio is 20, the peak dry weather flow is

a. 20% of the design discharge

b. slightly less than 5% of the design discharge

c. slightly more than 5% of the design discharge

d. none of these.

32. The non-clog pump which permits solid matter to pass out with the liquid sewage, is

a. centrifugal pump

b. reciprocating pump

c. pneumatic ejector

d. none of these.

33. Water-shed line is abondened for aligning an irrigation canal if

a. water shed forms a sharp loop

b. canal has to take off from a river

c. towns and villages are located on the water shed line

d. all the above.

34. For the conditions enumerated to provide a crossing at C1 You will probably provide

a. an aqueduct

b. a super-passage

c. a syphon aqueduct

d. none of these.

35. The depth of the crest of a scouring sluice below the crest of a head regulator, is generally kept

a. 1.20 m

b. 2.20 m

c. 3.20 m

d. 4.90 m

36. Pick up the correct statement from the following:

a. If the setting of an outlet is higher than that required for proportionality, the outlet is hyper-proportional

b. If the setting of an outlet is lower than that required for proportionality, the outlet is sub-proportional

c. If the flexibility is zero, it is a rigid module

d. All the above.

37. The head light of vehicles should be such that its lower beam illuminates objects at

a. 20 m

b. 30 m

c. 40 m

d. 50 m

38. The usual width of parapet walls along Highways in hilly region, is

a. 60 cm

b. 70 cm

c. 80 cm

d. 100 cm

39. In India the modes of transportation, in the order of their importance, are

a. shipping, roads, railways, air transport

b. roads, railways, air transport, shipping

c. railways, roads, shipping, air transport

d. shipping, railways, roads, air transport.

40. The basic formula for determination of pavement thickness was first suggested by

a. Spanglar

b. Picket

c. Kelly

d. Goldbeck

41. The brick work is measured in sq metre, in case of

a. Honey comb brick work

b. Brick flat soling

c. Half brick walls or the partition

d. All the above.

42. The order of booking dimensions is

a. Length, breadth, height

b. Breadth, length, height

c. Height, breadth, length

d. None of these.

43. The damp proof course (D.P.C.) is measured in

a. Cub.m

b. Sq m

c. Metres

d. None of these

44. The total length of a cranked bar through a distance (d) at 45° in case of a beam of effective length L, is

a. L + 0.42 d

b. L + 2 x 0.42 d

c. L - 0.42 d

d. L - 2 x 0.4 d

45. Modular co-ordination of construction means proper

a. planning

b. designing

c. execution

d. all the above.

46. If TL is the latest allowable event occurrence time, total activity slack(s), is equal to

a. LST-EST

b. LFT-EFT

c. TL-EFT

d. all the above.

47. The object of technical planning, is

a. preparation of estimates

b. initiating the procurement action of resources

c. taking remedial action for likely bottleneck in the execution

d. all the above.

48. Henry Gantt developed Bar charts for planning and scheduling of projects in

a. 1900

b. 1920

c. 1940

d. 1950

49. The threshold markings are

a. 1 m clear space between adjacents

b. 45 m in length

c. placed symmetrically on either side of the runway centre line

d. all the above.

50. Pick up the correct statement from the following:

a. Approximate geometric centre of the landing area, is called air port reference point

b. The boundaries of horizontal surface and conical surface are marked with reference to air port reference point

c. The location of the air port on a map is the position of air port reference point

d. All the above.