

161/2014

Maximum : 100 marks

Time : 1 hour and 15 minutes

1. Which constituent in the earth gives plasticity to mould bricks?
(A) Lime (B) Magnesia
(C) Silica (D) Alumina
2. The distance from the optical centre to the principle focus of a lens :
(A) Radius of curvature (B) Focal length
(C) Focus (D) None of these
3. The study of static electricity :
(A) Electronics (B) Electrostatic Field
(C) Electrostatic (D) Electron gravity
4. In optical systems, the lens of system of lenses closest to the observer's eye :
(A) Object vane (B) Eye piece
(C) Nucleus (D) Prism
5. In CGS system, the unit of viscosity :
(A) Poise (B) N/mm^2
(C) Centipoise (D) m^3/sec
6. The technique of measuring very high temperatures :
(A) Pyroelectricity (B) Pyrometry
(C) Presbyopia (D) None of these
7. Distant objects are seen clearly but closer objects are difficult :
(A) Glaucoma (B) Presbyopia
(C) Short sight (D) Accommodation
8. The force per unit area :
(A) Joule (B) Energy
(C) Velocity (D) Pressure

9. The method of expressing the strength of solution :
- (A) Solvolysis (B) Hardness
(C) Molality (D) Solvation
10. The ratio of ultimate stress to the safe stress :
- (A) Stress (B) Factor of safety
(C) Strain (D) Working stress
11. One horse power equals :
- (A) 764 Watts (B) 764 ergs
(C) 746×10^7 ergs/s (D) 746×10^7 Watts/s
12. The energy possessed by a body due to change in its position :
- (A) Potential energy
(B) Kinetic energy
(C) Mechanical energy
(D) Absolute energy
13. The resultant upward thrust experienced by a body when immersed in the fluid :
- (A) Density of fluid (B) Viscosity
(C) Centre of floatation (D) Buoyancy
14. The ratio of density of a substance to the density of water :
- (A) Relative density (B) Relative gravity
(C) Specific gravity (D) Weight of substance
15. The meter used to determine the sugar content of a solution :
- (A) Hydrometer (B) Saccharometer
(C) Lactometer (D) Alcoholometer
16. The quantity of fluid flowing per unit time is constant :
- (A) Uniform flow (B) Steady flow
(C) Laminar (D) Unsteady

17. The discharge for right angular notch :
- (A) $Q = 1.417 H^{5/2}$ (B) $Q = cdH^{1/3}$
 (C) $Q = 8/15 cd\sqrt{2gH}$ (D) $Q = 2/3 cd\sqrt{2gH}^{3/2}$
18. The ratio between the wetted area of c/s and wetted perimeter :
- (A) Hydraulic depth (B) Gradient line
 (C) Hydraulic mean depth (D) Total energy line
19. The depth of liquid in a channel for which the specific energy is minimum :
- (A) Minimum depth (B) Static depth
 (C) Specific depth (D) Critical depth
20. The WCB of RB S 2°30' E :
- (A) 182°30' (B) 178°30'
 (C) 177°30' (D) 87°30'
21. In a transit theodolite, when the line of collimation is horizontal the vertical circle vernier must read :
- (A) Zero (B) +20 min
 (C) -20 min (D) None of these
22. The line of collimation and the axis of telescope are :
- (A) The same (B) One
 (C) One and the same (D) Different
23. The branch of surveying in which the horizontal and vertical distances are determined by angular observations with a pacheometer :
- (A) Theodolite survey (B) Tacheometry
 (C) Theodolite traverse (D) Chain traverse
24. The stadia markings are made on :
- (A) Object glass (B) Diaphragm
 (C) Eye-piece (D) Lens

25. The maximum resisting moment that can be developed at the cross section of a beam without exceeding the permissible bending stresses :
- (A) Bending stress (B) Moment of resistance
(C) Longitudinal stress (D) Flexural rigidity
26. The usual value of tacheometric survey :
- (A) 100 (B) 150
(C) 20 (D) Any desired value
27. The stress corresponding to the limiting value of load :
- (A) Shear stress (B) Shear strain
(C) Elastic limit (D) Strain
28. The structure constructed across a canal to regulate the discharge into another canal :
- (A) Tank sluice (B) Canal regulator
(C) Weir (D) Canal drop
29. The tanks used for treating the sewage from isolated residences where drainage connection to public sewer system is not possible :
- (A) Septic tank (B) Catch basin
(C) Sewer lines (D) Seepage pit
30. Convert S 78°40' W into WCB :
- (A) 281°20' (B) 191°20'
(C) 258°40' (D) 257°
31. The book in which the distance along the chain, the offset measurements, and sketches of detail points are recorded :
- (A) Record book (B) Survey book
(C) M-book (D) Field book
32. A fixed reference point of known elevation :
- (A) Change point (B) Bench mark
(C) Datum (D) Foresight

33. The sight which is taken between BS and FS?
- (A) IS (B) HI
(C) RL (D) BM
34. The least count of telescopic levelling staff :
- (A) 0.005 (B) 0.005 m
(C) 0.001 (D) 0.005 mm
35. In hydro power plant the pipe carrying water from the reservoir to the turbine :
- (A) Suction pipe (B) Penstock
(C) Draft tube (D) Turbine
36. At constant temperature the _____ flowing through a conductor is directly proportional to the potential difference between its ends.
- (A) Voltage (B) Resistant
(C) Current (D) Liquid
37. What is the cost of using a 6 hp motor for one year 2 hrs per day if the cost is Rs. 2.5/KWh?
- (A) Rs. 21 (B) Rs. 30
(C) Rs. 26 (D) Rs. 22
38. When soundness test is conducted, the expansion of cement should not be greater than :
- (A) 20 mm (B) 20 dm
(C) 10 mm (D) 10 dm
39. The operation of establishing intermediate points in survey line with end points :
- (A) Running survey line (B) Chaining
(C) Ranging (D) Offsetting
40. In a 20 m metric chain the number of links :
- (A) 200 (B) 100
(C) 50 (D) 250
41. The two methods for calculating the reduced levels of points, the height of collimation and the other is :
- (A) Height of instrument (B) Simpson's method
(C) Trapezoidal rule (D) Rise and fall method

42. To develop the phase lap which is the closer used next to the quoin header :
- (A) King closer (B) Queen closer
(C) Quoin closer (D) Quoin bat
43. The distance of the object from the survey line :
- (A) Chain age (B) Lateral measurement
(C) Scale reading (D) Offset
44. The system of collecting and carrying sewage through sewers :
- (A) Sewage (B) Sullage
(C) Sewerage (D) Sewer
45. The minimum velocity which will prevent the silting of particles in sewers :
- (A) Non-scouring velocity (B) Self cleansing velocity
(C) Scouring velocity (D) None of these
46. What will be the level difference between two points A and B when observations are done by levelling instrument. The staff readings taken on BM of RL 15.000 m, 3.185 m and 2.685 m respectively?
- (A) A is 0.500 m higher than B (B) B is 0.500 m higher than A
(C) B is 0.500 m lower than A (D) None of these
47. The sewer appurtenance constructed to provide a connection between the high level branch sewer to low level main sewer :
- (A) Catch basin (B) Man hole
(C) Drop man hole (D) Deep man hole
48. The term which is measured as the vertical distance between crown and dip of a trap :
- (A) Crest width (B) Water seal
(C) Dip depth (D) Depth of water
49. In the last man hole of house drainage system. The trap provided :
- (A) Gully trap (B) S trap
(C) Floor trap (D) Intercepting trap

50. In water bound macadam road, binding material to hold stone is :
- (A) Cement (B) Sand
(C) Bitumen (D) Red earth
51. The contractor profit in rate analysis :
- (A) 15% (B) 5%
(C) 1% (D) 10%
52. The back sight reading on a BM (100 m) was 1.650 m. If the inverted staff reading to the bottom of a veranda roof slab is 0.250 m, the RL of the bottom of the slab is :
- (A) 2.900 (B) 101.900
(C) 102.900 (D) 1.900
53. For portable water, the highest desirable level of chloride content is :
- (A) 250 mg/l (B) 600 mg/l
(C) 500 mg/l (D) 150 mg/l
54. The ratio of the total built up area inclusive of walls to the area of the land :
- (A) Plinth area (B) Carpet area
(C) Floor area (D) Floor space index
55. On the basis of population more than 300000 the city is known as :
- (A) Great city (B) Metropolis
(C) Super city (D) City
56. The frontage margin in front of the abutting road :
- (A) Playground (B) Porch
(C) Courtyard (D) Setback
57. For residential buildings the maximum pitch of stair :
- (A) 30° (B) 45°
(C) 42° (D) 35°
58. In public water supply project the coagulation is to be adopted when turbidity of water exceeds :
- (A) 40 ppm (B) 10 ppm
(C) 50 ppm (D) 100 ppm

59. The method of cleaning of rapid sand filters :
- | | |
|---------------------------|--------------------------------|
| (A) Long laborious method | (B) Compressed air method |
| (C) Scraping | (D) Agitation and back washing |
60. Temporary hardness is due to the presence of :
- | | |
|-------------------------|----------------------------|
| (A) Magnesium sulphates | (B) Calcium chlorides |
| (C) Calcium nitrates | (D) Magnesium bicarbonates |
61. Method of removing permanent hardness :
- | | |
|------------------------------|-------------------|
| (A) Demineralisation process | (B) Adding lime |
| (C) Boiling | (D) None of these |
62. The system of layout of distribution pipe, one main supply from which sub-mains are taken :
- | | |
|----------------------|---------------------|
| (A) Radial method | (B) Circular method |
| (C) Grid-iron method | (D) Tree system |
63. The automatic device which allows water to go in one direction only :
- | | |
|------------------|------------------|
| (A) Relief valve | (B) Reflux valve |
| (C) Sluice | (D) Scour valve |
64. The system of carrying sewage through sewer :
- | | |
|-------------------------------|------------------------|
| (A) Dry system | (B) Conservancy system |
| (C) Partially separate system | (D) Sewerage |
65. The sloping structure for negotiating the changes in different floors by vehicle or passengers :
- | | |
|-------------------|------------------|
| (A) Moving stairs | (B) Fixed ladder |
| (C) Ramps | (D) Stairs |
66. The technique of providing a new foundation below the existing one without endangering the stability :
- | | |
|-------------------|-----------------|
| (A) Shoring | (B) Pilling |
| (C) Under pinning | (D) Scaffolding |
67. The head room for a staircase should not be less than :
- | | |
|---------|------------|
| (A) 2 m | (B) 2.10 m |
| (C) 3 m | (D) 3.10 m |