Maximum : 100 marks

Time : 1 hour and 15 minutes

1. One hectare equals :

(A) $100 \, m^2$ 　　　　　(B) $1000 \, m^2$

(C) $10,000 \, m^2$ 　　　(D) $100000 \, m^2$

2. Chain surveying is most suitable for :

(A) forest area 　　　　(B) hill area

(C) undulating area 　　(D) flat surface

3. If a measuring tape is too long as compared to standard length, the error will be :

(A) Accidental error 　　(B) Instrumental error

(C) Personal error 　　　(D) Natural error

4. The boundary of water of a still lake represents :

(A) Level surface 　　　(B) Horizontal surface

(C) Contour line 　　　　(D) Concave line

5. Which method in plane table surveying for locating previous station point?

(A) Intersection 　　　　(B) Radiation

(C) Resection 　　　　　(D) Traversing

6. Multiplying constant for the tacheometer is generally:

(A) 50 　　　　　　　　(B) 100

(C) 150 　　　　　　　 (D) 200

7. The ratio of the length of the object in the drawing to the actual length of the object is called :

(A) full scale 　　　　　(B) least count

(C) diagonal scale 　　 (D) representative fraction

A 　　　　　　　　　　　　3 　　　　　　　　　　　　[P.T.O.]

8. A 500 sq.m area is represented by 500 sq.mm in a drawing. The scale of the drawing is :

   (A) 1 mm = 100 m   (B) 1 mm = 5 m

   (C) 1 mm = 1 m   (D) 1 mm = 10 m

9. Process of turning the telescope about the vertical axis in a horizontal plane is called :

   (A) reversing   (B) transiting

   (C) pluging   (D) swinging

10. The instrument used for measuring area on a contour map is :

    (A) clinometer   (B) planimeter

    (C) pantograph   (D) graphometer

11. In levelling a station point where :

    (A) Levelling instrument is set up   (B) Bench Mark is marked

    (C) Levelling staff is placed   (D) All of these

12. The last reading of levelling is always a :

    (A) fore sight   (B) back sight

    (C) intermediate sight   (D) change point

13. Levelling across a river is done by :

    (A) fly levelling   (B) cross levelling

    (C) trigonometrical levelling   (D) reciprocal levelling

14. The line of collimation should be parallel to :

    (A) vertical axis   (B) bubble axis

    (C) plumb axis   (D) none of these

15. The height of instrument method is :

    (A) less tedious   (B) more rapid

    (C) less calculation   (D) all of these

16. While traversing anticlockwise a closed traverse of 'N' sides, theoretical sum of included angles should be :

    (A) $(2N - 4) \times 90°$ (B) $(2N + 4) \times 90$

    (C) $(2N \pm 4) \times 90°$ (D) $360°$

17. Angle of dip at pole is :

    (A) 0°
    (B) 30°
    (C) 45°
    (D) 90°

18. An offset more than 15 m in length is called :

    (A) oblique offset
    (B) short offset
    (C) long offset
    (D) right angled offset

19. To calculate the area, the expression $A = \dfrac{n}{3}\left[(F + L) + 20 + 4E\right]$ where 'F' is first ordinate, 'L' is the last ordinate, 'O' is odd of ordinates 'E' is even ordinates and 'h' is the common distance between the ordinates :

    (A) Average ordinate rule
    (B) Mid ordinate rule
    (C) Trapezoidal rule
    (D) Simpson's rule

20. The correction for sag is always :

    (A) positive
    (B) negative
    (C) zero
    (D) none of these

21. Metallic tapes are made of :

    (A) stainless steel
    (B) nickel
    (C) steel and nickel
    (D) yarn and wire

22. Example for a deep foundation :

    (A) Grillage foundation
    (B) Well foundation
    (C) Mat foundation
    (D) Step foundation

23. Mechanical advantage equal to :

    (A) $\dfrac{W}{P}$
    (B) $\dfrac{P}{W}$
    (C) $P \times W$
    (D) $P - W$

24. The resultant of two forces 'P' and 'Q' acting at angle 'θ' is equal to :

    (A) $\sqrt{P^2 + Q^2 + 2PQ \sin \theta}$
    (B) $\sqrt{P^2 - Q^2 + 2PQ \sin \theta}$
    (C) $\sqrt{P^2 + Q^2 + 2PQ \cos \theta}$
    (D) $\sqrt{P^2 - Q^2 + 2PQ \cos \theta}$

25. The ratio of stress to strain is :
   - (A) Elasticity
   - (B) Modulus of elasticity
   - (C) Bulk modulus
   - (D) Poisson's ratio

26. In conics the fixed point is called :
   - (A) Vertex
   - (B) Apex
   - (C) Helix
   - (D) Focus

27. A regular solid having six square faces is :
   - (A) Hexagen
   - (B) Octa hedron
   - (C) Cube
   - (D) Tetra hedran

28. The horizontal angle between the true meridian and line is called :
   - (A) magnetic bearing
   - (B) azimuth
   - (C) arbitrary bearing
   - (D) reduced bearing

29. The observed fore bearing of a line is 142°18' then the back bearing is :
   - (A) 322°18'
   - (B) 37°42'
   - (C) 322°42'
   - (D) 232°18'

30. The true bearing of a line is 127° and declination is 2°W. The magnetic bearing equals :
   - (A) 125°
   - (B) 131°
   - (C) 129°
   - (D) 135°

31. The sum of the interior angles of a regular pentagen is :
   - (A) 360°
   - (B) 540°
   - (C) 720°
   - (D) 630°

32. The bearing of a line AB is 152°20' and the angle BAC is 124°38'. The bearing of AC is :
   - (A) 96°58'
   - (B) 96°18'
   - (C) 276°58'
   - (D) 127°18'

33. The inclination of the compass needle with the horizontal is known as:
   - (A) Declination
   - (B) Dip
   - (C) True bearing
   - (D) Magnetic Declination

34. The angle between the reflecting surfaces of a prism square is :

    (A) 45°   (B) 60°

    (C) 75°   (D) 90°

35. The angle of depression in theodolite traverse is :

    (A) positive angle   (B) negative angle

    (C) both positive and negative angle   (D) above horizontal angle

36. The bench mark at A is '200' m and staff reading at A is '3.5' m and the staff reading at B is '2' m. The reduced level at B is :

    (A) 203.5 m   (B) 202.0 m

    (C) 201.5 m   (D) 202.5 m

37. Which method is particularly suitable when a contoured map of a hill required?

    (A) Radial method   (B) Square method

    (C) Cross-section method   (D) Tachemetric method

38. The most common Coagulant is :

    (A) Alum   (B) Chlorine

    (C) Bleaching power   (D) All of these

39. The whole circle bearing of a line is 165°. Its reduced bearing is :

    (A) N 75° E   (B) N 75° W

    (C) S 15° E   (D) S 15° W

40. To locate an electric post near the plane table station which of the following method is suitable :

    (A) Intersection   (B) Radiation

    (C) Resection   (D) Traverse

41. If distance between two points A and B is 1 km, then combined correction for curvature and refraction will be :

    (A) $0.0673 \ D^2$ m   (B) $1.0673 \ D^2$ m

    (C) $0.673 \ D^2$ m   (D) $1.673 \ D^2$ m

42. The process of establishing intermediate points between two end points which are not intervisible, with the help of a theodolite is called:

    (A) Lining-in   (B) Ranging

    (C) Balancing-in   (D) Random line

43. The observation is taken on a change point is :

    (A) fore sight   (B) back sight

    (C) intermediate sight   (D) both fore sight and back sight

44. The isometric projection of a square is :

    (A) Rectangle   (B) Rhombus

    (C) Parallelogram   (D) Trapezoid

45. In a simply supported beam the point where the maximum bending moment occures is at :

    (A) support point   (B) mid point

    (C) the point where SF is zero   (D) end point

46. Which of the following is used for checking verticality of masonry wall?

    (A) spirit level   (B) water level

    (C) trowel   (D) plumb bob

47. Departure co-ordinate related to :

    (A) North and South   (B) East and West

    (C) South and West   (D) South and East

48. Bureau of Indian standards has recommended the use of folding staff as :

    (A) 2 m   (B) 3 m

    (C) 4 m   (D) 4.5 m

49. The observation with level is :

    (A) Horizontal linear measurement   (B) Vertical linear measurement

    (C) Angular measurement   (D) Horizontal angular measurement

50. The box of the compass is made of :

    (A) Aluminium
    (B) Iron

    (C) Copper
    (D) Brass

51. A fixed point of known elevation is :

    (A) Bench Mark
    (B) Station point

    (C) Change point
    (D) Intermediate point

52. Ring contours of higher values interval represents inside :

    (A) Ridge
    (B) Pond

    (C) Hill
    (D) Valley

53. The closing error of theodolite traverse where 'L' is the latitude and 'D' is the departure :

    (A) $\sqrt{\sum L^2 - \sum D^2}$
    (B) $\sqrt{\sum L^2 + \sum D^2}$

    (C) $\dfrac{\sum D}{\sum L}$
    (D) $\dfrac{\sum L}{D}$

54. The horizontal angle between true meridian and a survey line is :

    (A) Dip
    (B) Magnetic Declination

    (C) Magnetic bearing
    (D) Azimuth

55. The method used for calculating the earth work with more accuracy is :

    (A) Trapezoidal Rule
    (B) Mid-ordinate rule

    (C) Prismoidal rule
    (D) Average ordinate rule

56. The length of long chord is :

    (A) $2R\cos\theta/2$
    (B) $2R\sin\theta/2$

    (C) $R\cos\theta/2$
    (D) $R\sin\theta/2$

57. An instrument which is used for measuring horizontal angle, vertical angle and direct distance accurately is :

    (A) Tacheometric survey
    (B) Theodolite survey

    (C) Box-sextant
    (D) Total station

58. The value of deflection angle is :

(A) 0° to 90°   (B) 0° to 180°

(C) 0° to 270°   (D) 0° to 360°

59. In telescope the ratio of the focal length of the object to that of an eye-piece is known as :

(A) Magnification   (B) Sensitivity

(C) Definition   (D) Brightness

60. For accurate measurement of distance which tape is better?

(A) Metallic tape   (B) PVC coated tape

(C) Steel tape   (D) Invar tape

61. The number of links in a 30 m metric chain is :

(A) 100 links   (B) 150 links

(C) 180 links   (D) 200 links

62. The process of turning the telescope about the vertical axis in horizontal plane is called :

(A) Transiting   (B) Reversing

(C) Plugging   (D) Swinging

63. During chaining a straight line, the leader of the party has 4 arrows in his hand while the follower has 6 arrows in his hand from the starting point is :

(A) 4 chains   (B) 6 chains

(C) 120 metre   (D) 180 metre

64. The permissible error in compass survey is :

(A) 15 minutes   (B) 15 seconds

(C) 30 seconds   (D) 1 degree

65. In first angle projection the object is place :

(A) Above HP and behind VP   (B) Above HP and infront of VP

(C) Below HP and behind VP   (D) Below HP and infront of VP

66. In Engineering drawing chain lines are used for :

(A) Visible out lines   (B) Dimension lines

(C) Hidden lines   (D) Centre lines