1. The angle between the direction of star and the direction of earth's axis of rotation is called
(A) Co-declination
(B) Co-latitude
(C) Declination
(D) Latitude

2. Polaris is usually observed for the determination of the latitude when it is
(A) At culmination
(B) At elongation
(C) Neither at culmination nor at elongation
(D) Either at culmination or at elongation

3. Pick up the correct statement from the following:
(A) The vertical plane containing the zenith, the station of observation and the celestial pole is the observer's meridian plane
(B) The angle between the direction of star in vertical plane and the direction of the star in horizontal plane is called the altitude of the star
(C) The complement of the altitude of star is called the zenith distance of the star
(D) All the above

4. The point on the photograph where bisector between the vertical line through optical centre of the camera lens and the plate perpendicular meets, is known as
(A) Principal point
(B) Isocenter
(C) Plumb point
(D) Perspective centre

5. The station where observations are not made, but the angles at the station are used in triangulation series, is known as
(A) Satellite station
(B) Subsidiary station
(C) Pivot station
(D) Main station

6. Which of the following has more fire resisting characteristics?
(A) Marble
(B) Lime stone
(C) Compact sand stone
(D) Granite

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. Plywood has the advantage of
(A) Greater tensile strength in longer direction
(B) Greater tensile strength in shorter direction
(C) Same tensile strength in all directions
(D) None of the above

9. Due to attack of dry rot, the timber
(A) Cracks
(B) Shrinks
(C) Reduces to powder
(D) None of these

10. Excess of alumina in brick earth makes the brick
(A) Impermeable
(B) Brittle and weak
(C) To lose cohesion
(D) To crack and warp on drying

11. The rate of payment is made for 100 cu m (per % cu m) in case of
(A) Earth work in excavation
(B) Rock cutting
(C) Excavation in trenches for foundation
(D) All the above

12. The rate of an item of work depends on
(A) Specifications of works
(B) Specifications of materials
(C) Proportion of mortar
(D) All the above

13. The main factor to be considered while preparing a detailed estimate, is
(A) Quantity of the materials
(B) Availability of materials
(C) Transportation of materials
(D) All the above

14. Pick up the correct statement from the following:
(A) The estimated value of the work excluding the amount for contingencies, work charged establishment, tool and plants, is called work value
(B) The actual expenditure involved to complete a work including incidental, establishment and travelling charges, is called actual cost
(C) The formal acceptance by the administrative department for incurring an expenditure on the work, is called administrative approval
(D) All the above

15. 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

16. When a body is placed over a liquid, it will sink down if
(A) Gravitational force is equal to the up-thrust of the liquid
(B) Gravitational force is less than the up-thrust of the liquid
(C) Gravitational force is more than the up-thrust of the liquid
(D) None of the above

17. The property by virtue of which a liquid opposes relative motion between its different layers is called
(A) Surface tension
(B) Coefficient of viscosity
(C) Viscosity
(D) Osmosis

18. A weir is said to be narrow-crested weir, if the width of the crest of the weir is _____ half the height of water above the weir crest.
(A) Equal to
(B) Less than
(C) More than
(D) None of these

19. Euler's dimensionless number relates the following
(A) Inertial force and gravity
(B) Viscous force and inertial force
(C) Viscous force and buoyancy force
(D) Pressure force and inertial force

20. When a body floating in a liquid, is displaced slightly, it oscillates about
(A) C.G. of body
(B) Center of pressure
(C) Center of buoyancy
(D) Metacentre

21. Select the correct statement
(A) Material cost of a rivet is higher than that of a bolt
(B) Tensile strength of a bolt is lesser than that of a rivet
(C) Bolts are used as a temporary fastening whereas rivets are used as permanent fastenings
(D) Riveting is less noisy than bolting

22. The forces acting on the web splice of a plate girder are
(A) Axial forces
(B) Shear and axial forces
(C) Shear and bending forces
(D) Axial and bending forces

23. Generally the purlins are placed at the panel points so as to avoid
(A) Axial force in rafter
(B) Shear force in rafter
(C) Deflection of rafter
(D) Bending moment in rafter

24. Which of the following sections should preferably be used at places where torsion occurs?
(A) Angle section
(B) Channel section
(C) Box type section
(D) Any of the above

25. Other conditions being same, the load factor in indeterminate structures is
(A) Equal to load factor in determinate structures
(B) More than the load factor in determinate structures
(C) Less than the load factor in determinate structures
(D) Unpredictable

26. Group index method of design of flexible pavement is
(A) A theoretical method
(B) An empirical method based on physical properties of sub-grade soil
(C) An empirical method based on strength characteristics of sub-grade soil
(D) A semi empirical method

27. Which of the following is considered to be the highest quality construction in the group of black top pavements?
(A) Mastic asphalt
(B) Sheet asphalt
(C) Bituminous carpet
(D) Bituminous concrete

28. Los Angeles testing machine is used to conduct
(A) Abrasion test
(B) Impact test
(C) Attrition test
(D) Crushing strength test

29. When the width of car parking space and width of street are limited, generally preferred parking system is
(A) Parallel parking
(B) 45° angle parking
(C) 65° angle parking
(D) 90° angle parking

30. When the bituminous surfacing is done on already existing black top road or over existing cement concrete road, the type of treatment given is
(A) Seal coat
(B) Tack coat
(C) Prime coat
(D) Spray of emulsion

31. The consumptive use of water for a crop
(A) Is measured as the volume of water per unit area
(B) Is measured as depth of water on irrigated area
(C) May be supplied partly by precipitation and partly by irrigation
(D) All the above

32. Canals taken off from ice-fed perennial rivers, are known
(A) Permanent canals
(B) Ridge canals
(C) Perennial canals
(D) Inundation canals

33. In gravity canals, F.S.L. is
(A) Always at the ground level
(B) Always below the ground level

(C) Generally 4 to 5 meters above the ground level
(D) Only a few cm above the ground level

34. The field capacity of a soil is 25%, its permanent wilting point is 15% and specific dry unity weight is 1.5. If the depth of root zone of a crop, is 80 cm, the storage capacity of the soil, is
(A) 8 cm
(B) 10 cm
(C) 12 cm
(D) 14 cm

35. If water table is comparatively high, the irrigation canal becomes useless, due to
(A) Large amount of seepage
(B) Water logging of the cultivated areas
(C) Uncertain water demand
(D) All the above

36. An R.C.C. beam of 6 m span is 30 cm wide and has a lever arm of 55 cm. If it carries a U.D.L. of 12 t per m and allowable shear stress is 5 kg/cm2, the beam
(A) Is safe in shear
(B) Is safe with stirrups
(C) Is safe with stirrups and inclined bars
(D) Needs revision of section

37. According to I.S. : 456, slabs which span in two directions with corners held down, are assumed to be divided in each direction into middle strips and edge strips such that the width of the middle strip, is
(A) Half of the width of the slab
(B) Two-third of the width of the slab
(C) Three-fourth of the width of the slab
(D) Four-fifth of the width of the slab

38. The load stress of a section can be reduced by
(A) Decreasing the lever arm
(B) Increasing the total perimeter of bars
(C) Replacing larger bars by greater number of small bars
(D) Replacing smaller bars by greater number of greater bars

39. The diameter of the column head support a flat slab, is generally kept
(A) 0.25 times the span length
(B) 0.25 times the diameter of the column
(C) 4.0 cm larger than the diameter of the column
(D) 5.0 cm larger than the diameter of the column

40. If ‘W’ is the uniformly distributed load on a circular slab of radius ‘R’ fixed at its ends, the maximum positive radial moment at its centre, is
(A) $3WR^2/16$
(B) $2WR^2/16$
(C) $WR^2/16$
(D) None of these

41. $P = 4\pi^2 EI/L^2$ is the equation of Euler's crippling load if
(A) Both the ends are fixed
(B) Both the ends are hinged
(C) One end is fixed and other end is free
(D) One end is fixed and other end is hinged

42. Pick up the correct statement from the following:
(A) The structural member subjected to compression and whose dimensions are small as compared to its length, is called a stmt
(B) The vertical compression members are generally known as columns or stanchions
(C) Deflection in lateral direction of a long column, is generally known as buckling
(D) All the above

43. For calculating the allowable stress of long columns $\sigma 0 = \sigma y/n [1 - a (1/r)^2]$is the empirical formula, known as
(A) Straight line formula
(B) Parabolic formula
(C) Perry's formula
(D) Rankine's formula

44. Maximum principal stress theory for the failure of a material at elastic point, is known
(A) Guest's or Trecas' theory
(B) St. Venant's theory
(C) Rankine's theory
(D) Von Mises' theory

45. Pick up the correct statement from the following:
(A) The moment of inertia is calculated about the axis about which bending takes place
(B) If tensile stress is less than axial stress, the section experiences compressive stress
(C) If tensile stress is equal to axial stress, the section experiences compressive stress
(D) All the above