MFCP held on - 6/8/18

QUESTION PAPER FOR JUNIOR ENGINEER (CIVIL)

1. In brick masonry, the headers and stretchers are placed alternatively in every course, is referred to as:
   (A) English bond (B) Flemish bond
   (C) Facing bond (D) Dutch bond
2. The exposed vertical surface left on the sides of an opening after the door or window frames has been fitted in position, is called:
   (A) Jamb (B) Reveal
   (C) Sill (D) Soffit
3. The horizontal distance between the faces of two consecutive rises is called:
   (A) Riser (B) Tread
   (C) Going (D) Nosing
4. Granite is an example of:
   (A) Igneous rocks (B) Sedimentary rocks
   (C) Metamorphic rocks (D) Aqueous rocks
5. The base material for distemper is:
   (A) Lime (B) Lime putty
   (C) Chalk (D) Clay
6. Sinking fund is:
   (A) The fund for rebuilding a structure when its economic life is over
   (B) Raised to meat maintenance cost
   (C) The total sum to be paid to the municipality authorities by the tenants
   (D) A part of money kept in reserve for providing additional structures and structural modifications
7. In PERT analysis the duration of the activity is taken as:
   (A) Optimistic time (B) Pessimistic time
   (C) Most likely time (D) Expected mean time
8. The workability of concrete is mostly influenced by its
   (A) Aggregate cement ratio (B) Cement content
   (C) Water cement ratio (D) Water content
9. In building construction, the place for providing damp proof course is at the:
   (A) Basement level (B) Window sill level
   (C) Lintel level (D) roof level
10. Concrete is
   (A) Weak in compression
   (B) Strong in tension
   (C) Weak in tension
   (D) Strong in both tension and compression
11. The minimum number of main steel bars provided in RCC circular column is

(A) 2 (B) 4
(C) 6 (D) 8

12. As per IS 456-2000, The partial safety factor applied in addition to the factor of safety 2/3 for the design compressive strength of concrete is:
(A) 1.1 (B) 1.25
(C)1.5 (D) 1.8

13. Curing of concrete is:
(A) to prevent the loss of moisture content from the concrete.
(B) to prevent the development of high temperature gradients within the concrete.
(C) particularly important, if the water cement ratio is low and the cement hasa high rate of strength development.
(D) All of the above.

14. Basic value of span to effective depth ratio for continues beam upto 10m span as per IS 456-2000 is:
(A) 7 (B) 20
(C) 26 (D) None of these

15. The principle used for control of deflection in beams and slabs
(A) Span to overall depth ratio (B) Mohr's theorem
(C) Span to effective depth ratio (D) Maxwell method

16. The stem or upright slab of a counterfort retaining wall behaves like:
(A) Continuous slab (B) Cantilever slab
(C) Simply supported slab (D) None of these

17. A thin cylindrical shell of diameter 'd' and thickness 't' is subjected to an internal pressure 'p'. The stress in the shell material is:
(A) pd/t (B) pd/2t
(C) pd/4t (D) pd/4t

18. Which of the following is the most precise instrument for measuring horizontal distances.
(A) Chain (B) Tape
(C) Tacheometer (D) Tellurometer

19. The liquid part of the paint is called
(A) Pigment (B) Vehicle
(C) Thinner (D) Drier

20. Foundation with thick reinforced concrete slab covering the entire area of the bottom of a structure is known as
(A) Raft foundation (B) Pier foundation
(C) Pile foundation (D) Machine foundation

21. The process of filling up the cracks with putty is known as
(A) Stopping (B) Knotting
(C) Priming (D) Finishing

22. The basic principle of surveying is:

(A) To work from whole to part

(B) To work from part to whole

(C) To locate a point by at least two measurements from fixed reference points

(D) Both (A) and (C)

23. The optical square is used to measure angles by:

(A) Refraction (B) Reflection

(C) Double refraction (D)Double reflection

24. Which of the following statement is incorrect:

(A) Contours never run into one another except in the case of a vertical cliff.

(B) All points in a contour line have the same elevation.

(C) A series of closed contour lines on the map represents a hill if the higher values are outside.

(D) Contour line across ridge or valley lines at right angles.

25. Which one of the following is an instrumental error in levelling:

(A) The parallax error

(B) Inclined line of collimation

(C) The staff is not being held vertical

(D) Curvature and Refraction

26. Seasoning of wood is to

(A) Increase the moisture (B) Change the direction of grains

(C) Remove voids (D) Reduce the moisture

27. Type of truss commonly used for spans varying from 5 to 9 metre is

(A) Queen post truss (B) King post truss

(C) Composite truss (D) Mansard truss

28. The maximum bending moment at the fixed end of cantilever beam with uniformly distributed load 'w' and span 'l' is:

(A) $wl^2/2$ (B) $wl^2/8$

(C) $wl^2/10$ (D) $wl^2/12$

29. The moment of inertia of an isolated triangle with base "b" and height "h" about its centroid is:

(A) $bh^3/4$ (B) $bh^3/12$

(C) $bh^3/24$ (D) $bh^3/36$

30. A beam having one fixed end and one free end is called

(A) Cantilever beam (B) Fixed beam

(C) Overhanging beam (D) Simply supported beam

31. If Youngs Modulus and bulk modulus of a material are same. The Poisson's ratio is:

(A) 1/2 (B)1/3

(C)2/3 (D) 3/4

32. The maximum deflection of a simply supported beam of span "l" with central concentrated load "W" is:

(A) $Wl^2/6EI$ (B) $Wl^3/8EI$

(C) $Wl^2/16EI$ (D) $Wl^3/48EI$

33. According to Indian standards, a 2mm sieve is one with

(A) Hole of 2 mm diameter (B) Hole of 2 mm square

(C) 2 holes/mm (D) 2 holes/cm

34. Dechlorination of water is achieved by adding:

(A) Sodium sulphate (B) Sodium bisulphate

(C) Sodium thiosulphate (D) Sodium Hexametaphosphate

35. The ultimate BOD value of a waste:

(A) Increase with temperature

(B) Decrease with temperature

(C) Remains the same at all temperature

(D) Double with every 10^0C rise in temperature

36. Iron and manganese can be removed from water by:

(A)Boling (B) Aeration followed by coagulation

(C) Activated carbon addition (D) Chlorination

37. The process which involves chlorination beyond break point chlorination:

(A) Pre-chlorination (B) Super chlorination

(C) Post chlorination (D) Dechlorination

38. The suitable method for forecasting population for young and a rapidly developing city is:

(A) Arithmetic mean method (B) Geometric mean method

(C) Comparative graphical method (D) None of these

39. A manhole is generally classified as a deep manhole if its depth is more than:

(A) 0.9m (B) 1.2m

(C) 1.5m (D) 2m

40. Most polluted city in the world as per WHO (2018):

(A) Kanpur, India (B) Bamenda, Cameron

(C) Baoding, China (D) Delhi, India

41. Roof which slopes in four direction is called

(A) Shed roof (B) Hipped roof

(C) Gable end roof (D) Gambrel roof

42. Window which projects outward from the walls of a room to provide more area of opening I called

(A) Dormer window (B) Bay window

(C) Corner window (D) Clerestorey window

43. The maximum gross loading which the foundation will safely carry without the risk of shear failure and permissible settlement is:

(A) Ultimate bearing capacity (B) Safe bearing capacity

(C) Net safe bearing capacity (D) Allowable bearing capacity

44. The minimum water content at which the soil mass is fully saturated:

(A) Liquid limit (B) Plastic limit

(C) Shrinkage limit (D) Optimum moisture content

45. The total horizontal earth pressure to the retaining wall acts at what depth from the top ground level, if the height of the retaining wall is 'h':

(A) h/4 (B) 3h/4

(C) h/3 (D) 2h/3

46. Stone masonry commonly done in the residential building is

(A) Un-coursed rubble masonry (B) Coursed rubble masonry

(C) Random rubble masonry (D Dry rubble masonry

47. The layer of the pavement which finally carries the load from the road is:

(A) Sub base (B) Base course

(C) Wearing surface (D) Subgrade

48. The inward transverse inclination provided to the cross section of a carriage way on horizontal curves is called:

(A) Camber (B) Gradient

(C) Super Elevation (D) Widening of pavement

49. The amount collected along the tender to ensure the willingness of the contractor is called:

(A) PAC (B) EMD

(C) Security Deposit (D) Penalty

50. The quantity of coarse aggregate for $1m^3$ 1:2:4 mix concrete is 0.9 m^3. Then the quantity of cement required for $5m^3$ concrete in bags approximately:

(A) 29 (B) 31

(C) 33 (D) 35

KEY FOR JUNIOR ENGINEER(CIVIL)

1. B	2. B	3.C
4. A	5. C	6. A
7. D	8. C	9. A
10. C	11. C	12. C
13. D	14. C	15. B
16. A	17. B	18. D
19. B	20. A	21. A
22. D	23. B	24. C
25. B	26. D	27. B
28. A	29. D	30. A
31. B	32. D	33. B
34. C	35. C	36. B
37. B	38. C	39. C
40. A	41. B	42. C
43. D	44. C	45. D
46. B	47. D	48. C
49. B	50. C	