

PAPER - I  
DRAUGHTSMAN CIVIL  
(THEORY)  
SEMESTER - III

TIME: 3 HRS.

MARKS: 150

**Note: Attempt all the questions.****All questions carry equal marks.****This paper carries negative marking. 25% marks will be deducted for each wrong answer.****Choose the correct answer.**

1. The strength and quality of concrete depends on-  
(a) Grade of the concrete  
(b) Grade of the cement  
(c) Water cement ratio  
(d) All of these
2. The entrained air in concrete-  
(a) Increases workability  
(b) Decreases workability  
(c) Decreases strength  
(d) None of these
3. After casting, an ordinary cement concrete on drying-  
(a) Expands  
(b) Shrinks  
(c) Remains unchanged  
(d) Swells
4. For slabs and beams, the grade of the concrete mixed, generally should not be less than-  
(a) 1: 1: 4  
(b) 1: 3: 6  
(c) 1: 2: 4  
(d) None of these
5. When R.C.C beam is subjected to bending, and the topmost layer elongates and the bottom on shortens, then that beam is called-  
(a) Fixed beam  
(b) Simply supported beam  
(c) Cantilever beam  
(d) Doubly reinforced beam
6. A reinforced concrete beam will crack if tensile stress set up in the concrete below the neutral axis is-  
(a) Less than permissible stress  
(b) More than permissible stress  
(c) Equal to the permissible stress  
(d) None of these
7. For a simply supported slab of span ( $L$ ) the overall minimum thickness of the slab should be-  
(a)  $L/35$   
(b)  $L/30$   
(c)  $L/20$   
(d)  $L/12$
8. The minimum thickness of the floor for buildings is usually-  
(a) 2 cm  
(b) 5 cm  
(c) 9cm  
(d) 45cm
9. In a two way slab, the torsion steel is provided at-  
(a) Top  
(b) Bottom  
(c) Top and bottom  
(d) None of these
10. The minimum percentage of reinforcement in RCC short column is-  
(a) 0.8%  
(b) 2.5%  
(c) 6%  
(d) 8%

Contd....2/-

11. Horizontal loads on domestic stairs, internal balustrade or parapets are generally taken as-  
(a) 305 kg/m (b) 75 kg/m (c) 200kg/m (d) 35 kg/m
12. As per IS 456 recommendations the thickness of footing edge on soils should not be less than-  
(a) 10cm (b) 12cm (c) 15cm (d) 20cm
13. The maximum number of steps in flight of a stair case should be restricted up to-  
(a) 8 (b) 10 (c) 12 (d) 20
14. The minimum size of reinforcement bars in RCC column is-  
(a) 12mm (b) 8mm (c) 10mm (d) 18mm
15. For RCC column, a column is considered to be short if the effective length to the least side ratio is less than-  
(a) 30 (b) 24 (c) 12 (d) 16
16. A strut is a -  
(a) Flexible member (c) Torsion member  
(b) Compression member (d) Tension member
17. A tie is a-  
(a) Flexible member (c) Torsion member  
(b) Compression member (d) Tension member
18. The rivets which are driven at atmospheric temperature are known as-  
(a) Power driven shop rivets (c) Cold driven rivets  
(b) Hand driven rivets (d) None of these
19. When one member is placed above the other and they are connected by means of rivets, the joint is known as-  
(a) Lap joint (c) Double cover butt joint  
(b) Butt joint (d) Single cover butt joint
20. Rolled steel angle sections are classified  
(a) Equal angles (c) Bulb angles  
(b) Unequal angles (d) All of these
21. Slenderness ratio of a compression member is the ratio of effective length of member to the-  
(a) Critical load (c) Area of cross-section  
(b) Radius of gyration (d) Weight of the section
22. As compared to riveting, welding is preferred these days because -  
(a) It is a silent process (c) It has more efficiency  
(b) It is more economical (d) All of these



23. The liquid waste conveyed by a sewer is known as-  
(a) Sewer (c) Sewage  
(b) Sewerage (d) None of these
24. The solid content of sewage is usually-  
(a) 99% (b) 9% (c) 0.9% (d) 0.1%
25. The manhole covers are usually made of-  
(a) Cement (b) Wood (c) Cast iron (d) Steel
26. The velocity of flow in sewers should be-  
(a) At least 30cm/s (c) Less than cleansing velocity  
(b) Not more than 50cm/s (d) More than cleansing velocity
27. Traps are used in house in household drainage systems to-  
(a) Prevent entry of foul gases in the houses  
(b) Restrict the flow of water  
(c) Provide partial vacuum  
(d) Trap the solid waste
28. The portion of road surface which is used by the vehicular traffic is known as-  
(a) Carriage way (c) Express way  
(b) Shoulder (d) None of these
29. As per I.R.C. the camber on cement concrete road should be-  
(a) 1 in 6 to 5 (c) 1 in 60 to 50  
(b) 1 in 45 to 60 (d) 1 in 12 to 16
30. The maximum design gradient for vertical profile of a road is-  
(a) Ruling gradient (c) Exceptional gradient  
(b) Limiting gradient (d) Minimum gradient
31. Cause ways are type of-  
(a) Side drains (c) Jelly drains  
(b) Cross drainage structures (d) Sub surface drainage structures
32. As per I.R.C. the minimum width of median in rural areas is-  
(a) 10m (b) 8m (c) 5m (d) 2m
33. Bituminous pavements are  
(a) Rigid pavements (c) Semi-flexible pavements  
(b) Semi-rigid pavements (d) Flexible pavements
34. CBR Test is widely used in the design of-  
(a) Flexible pavements (c) Semi-rigid pavements  
(b) Rigid pavements (d) All of these



35. As per IRC the maximum width of a vehicle should-
- (a) 2m (b) 2.44m (c) 3.8m (d) 1.58m
36. The sub structure of the bridge supports super structure consists -
- (a) Doors, windows, lintels etc.  
(b) Abutments, wing walls, foundations for the piers and abutments etc.  
(c) Masonry walls of English bond, Flemish bond, garden bond  
(d) None of the above
37. Determinate and indeterminate bridges are classified under-
- (a) Classification based on Degree of redundancy  
(b) Classification based on span length  
(c) Classification based on loadings  
(d) Classification based on material used for construction
38. Highway bridges and Railway bridges are classified under-
- (a) Classification based on Degree of redundancy  
(b) Classification based on span length  
(c) Classification based on loadings  
(d) Classification based on purposes
39. In case of deck bridge, the platform of the bridge is supported -
- (a) At the top of the bridge (c) At the bottom of the bridge  
(b) At the side of the bridge (d) None of these
40. In open spandrel arch bridge floor is supported by -
- (a) More than one arches (c) Suspenders  
(b) Beams and columns (d) None of these
41. The framework of horizontal and cross beam laid in alternate layers is called-
- (a) Grip (c) Drip  
(b) Crip (d) None of these
42. Railways transport requires least amount of power as compared to its-
- (a) Length (c) Weight  
(b) Width (d) None of these
43. Proper amount \_\_\_\_\_ must be provided to outer rail above the inner rail.
- (a) Tangent (c) Gauge  
(b) Super elevation (d) All of these
44. The standard length of rails for B.G is as per Indian railways-
- (a) 12.8m (c) 14.8  
(b) 13.8 (d) 11.8
45. Creep of rails is prevented by using-
- (a) Anti-corrosive system (c) Anti-creepers  
(b) Anti-buckling system (d) All of these

46. The fittings which are permanently fastened in the track for making connections of rail to rail and rail to sleepers are referred as-
- (a) Fixtures
  - (b) Rattle
  - (c) Fastenings
  - (d) None of these
47. Fish plates are usually made of-
- (a) Wrought iron
  - (b) High carbon steel
  - (c) Mild steel
  - (d) All of these
48. The standard length of metal sleepers is-
- (a) 1.23m
  - (b) 2.13
  - (c) 3.98
  - (d) 2.68
49. The members laid transversely under the rail for supporting and fixing them to the gauge distance apart are referred as-
- (a) Sleepers
  - (b) Rail bolts
  - (c) Track bolts
  - (d) All of these
50. The railway track from which the train is diverted is called-
- (a) Diversion track
  - (b) Through track
  - (c) Gap track
  - (d) Null track

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