PAPER – I
DRAUGHTSMAN (CIVIL)
(THEORY)
SEMESTER – III

Time: 2 Hrs.

Marks: 150

Note: Attempt all the questions. All questions carry equal marks.

Choose the correct answer:

1. What is the overlap length of reinforcement bar in tension if its diameter is d? 
   a) 30 to 35 d 
   b) 35 to 40 d 
   c) 40 to 45 d 
   d) 45 to 50 d

2. What is the name of beam having more than three supports?
   a) Fixed Beam 
   b) Continuous Beam 
   c) Partially Fixed Beam 
   d) Simply Supported Beam

3. What is the tread measurement of a R.C.C stair in public building?
   a) 28 to 32 cm 
   b) 25 to 27 cm 
   c) 22 to 24 cm 
   d) 18 to 20 cm

4. What is the percentage of reinforcement for a column as a thumb rule?
   a) 1 to 5% 
   b) 5 to 7% 
   c) 9 to 10% 
   d) 0.75 to 1%

5. What is the maximum ratio value for the effective span to over all depth of a one way simply supported slab?
   a) 15 
   b) 20 
   c) 25 
   d) 30

6. What is the minimum depth of two way slab?
   a) \( \frac{30}{\text{span}} \) 
   b) \( \frac{27}{\text{span}} \) 
   c) \( \frac{24}{\text{span}} \) 
   d) \( \frac{20}{\text{span}} \)

7. What is the ratio of long span and short span of two way slab?
   a) 1:1 
   b) 1:2 
   c) 1:3 
   d) 1:4

8. What is the minimum diameter of stirrups?
   a) 6 mm 
   b) 8 mm 
   c) 10 mm 
   d) 7 mm

Contd….2/-
9. How many types of retaining walls are there?
   a) 3  
   b) 4  
   c) 5  
   d) 6

10. How much percentage of yield stress can be improved by using twisted bars comparing to the plain ordinary M. S. bars in R.C.C.?
   a) 30%  
   b) 40%  
   c) 50%  
   d) 60%

11. What is the spacing distance of lateral ties on long columns in terms of diameter of reinforcement rod?
   a) 10 times  
   b) 13 times  
   c) 16 times  
   d) 20 times

12. How much quantity of water used per cement bag for R.C.C 1:2:4?
   a) 25 litres  
   b) 28 litres  
   c) 32 litres  
   d) 35 litres

13. What is the minimum percentage of main vertical reinforcement in long column?
   a) 0.8%  
   b) 1.0%  
   c) 1.2%  
   d) 1.5%

14. What is the hook length at the end of the reinforcement?
   a) 3 d  
   b) 4 d  
   c) 5 d  
   d) 6 d

15. What is Unwin's formula for dia of rivet?
   a) \( d = 5.05 \sqrt{t} \)  
   b) \( d = 7.05 \sqrt{t} \)  
   c) \( d = 6.05 \sqrt{t} \)  
   d) \( d = 8.05 \sqrt{t} \)

16. What is the minimum pitch between the two adjacent rivets?
   a) 3 d  
   b) 4 d  
   c) 5 d  
   d) 6 d

17. What is the name of failure of rivetted joint?
   a) Tension of plate  
   b) Crushing of plate  
   c) Shear of rivet  
   d) Double shear of rivet

Contd....3/-
18. What is the name of symbol?
   a) Counter sunk headed screw slot
   b) Counter sunk headed screw cross slot
   c) Cylinder screw pan headed type slot
   d) Oval counter sunk headed screw slot

19. What is the name of steel roof truss?
   a) Pratt truss
   b) Fink truss
   c) FAN truss
   d) Cambered fink truss

20. What is the name of rivet head?
   a) Pan Head
   b) Pan Head type 2
   c) Conical head type 2
   d) Pan Head with tapered neck

21. What is the edge angle marked 'X' in double cover single rivetted butt joint?
   a) 5°
   b) 8°
   c) 10°
   d) 12°

22. What is the portion of pipe having its diameter and wall thickness remain uniform throughout its length?
   a) Drain
   b) Sewer
   c) Barrel
   d) Soil pipe

Contd...4/-
23. What includes all types of house waste and garbage?
   a) Ashes
   b) Sludge
   c) Refuse
   d) Rubbish

24. What is the rain water of a locality?
   a) Storm water
   b) Raw sewage
   c) Outfall sewer
   d) Fresh sewage

25. What is the name of sewer section?
   a) New egg shaped section
   b) Horse shoe sewer section
   c) Semi circular sewer section
   d) Standard egg shaped section

26. What is the name of underground pipe joint?
   a) Collar joint
   b) Flexible joint
   c) Flanged joint
   d) Expansion joint

27. What is the name of Trap?
   a) P-trap
   b) Gully trap
   c) Floor trap
   d) Intercepting trap

Contd....5/-
28. What is the name of any vertical line of drainage for soil, waste and vent pipe?
   a) Stack  
   b) Fixture drain  
   c) Raw sewage  
   d) Storm sewer

29. Which impurity is removed while softening water treatment?
   a) Hardness  
   b) Living organism  
   c) Floating matters  
   d) Dissolved matters

30. What is the name of part marked "x"?
   a) Ferrule  
   b) Stop key  
   c) Stop valve  
   d) Goose neck

31. What is the name of the pipe appurtenance?
   a) Sluice valve  
   b) A relief valve  
   c) Post fire hydrant  
   d) A flush fire hydrant

32. What is the name of pipe appurtenance?
   a) Leaping weir  
   b) Overflow weir  
   c) Combined inlet  
   d) Syphon spill way

Contd....6/-
33. What is the name of top layer or wearing coat of bitumen or concrete in a road?
   a) Slides
   b) Carpet
   c) Surfacing
   d) Road way

34. What is the slope provided to the road surface in transverse direction?
   a) Carpet
   b) Camber
   c) Gradient
   d) Angle of repose

35. What is the distance marked 'X'?
   a) Road way
   b) Head way
   c) Carriage way
   d) Right of way

36. What is the normal recommended land width for the state highways in plain land?
   a) 40 m
   b) 45 m
   c) 50 m
   d) 55 m

37. What is W. B. M? 
   a) Water Bond Macadam
   b) Water Bond Method
   c) Water Brake Method
   d) None of these

38. What is the R. C. C. road?
   a) Reinforced Cement Concrete
   b) Reinforced Coarse Cement
   c) Re-stressed Concrete Cement
   d) None of these

39. What is the rise in level of the river water caused due to the obstruction by the bridge?
   a) Afflux
   b) Low water level
   c) High flood level
   d) Ordinary flood level

40. What is the term for a layer of concrete or masonry stone laid at the entrance or outlet of culvert?
   a) Apron
   b) Bearings
   c) Scuppers
   d) Wing walls

Contd....7/-
40. What is the name of distance marked 'X'?
   a) Beam  b) Approach  c) Clearance  d) Free board

42. What is the term for a pool of water constructed in downstream side of dam to absorb the impact of falling water?
   a) Cribs  b) Afflux  c) Scuppers  d) Water cushion

43. What is the type of foundation for bridge piers adopted if loose soil extends to a great depth?
   a) Coffer dam  b) Caisson well  c) Pile foundation  d) Spread foundation

44. Which caisson having closed at top and open at bottom?
   a) Box caisson  b) Well caisson  c) Cylinder caisson  d) Pneumatic caisson

45. What is the term for a temporary structure constructed in water logged area to remove water or soil from that area to carry construction?
   a) Cribs  b) Caisson  c) Scuppers  d) Coffer dam

46. What is the narrow gauge distance in railway?
   a) 1.00 m  b) 1.675 m  c) 0.762 m  d) 0.572 m

47. What are the arrangements that allow the train to change from the route to another?
   a) Loop line  b) Turn table  c) Fish plates  d) Point and crossing

48. What is the name of rail head?
   a) Flat footed rail  b) Bull headed rail  c) Double headed rail  d) Point and crossing rail
49. What is the size of broad gauge wooden sleeper?
   a) 150 x 18 x 11.5 cm
   b) 180 x 20 x 11.5 cm
   c) 220 x 20 x 13.0 cm
   d) 275 x 25 x 13.0 cm

50. Which warning signal for the driver gives the indication of the position ahead whether the platform is clear or not?
   a) Disc signal
   b) Outer signal
   c) Home signal
   d) Starter signal