

Answer Key CIVIL ENGINEERING

Q.No.	Answer	Q.No.	Answer
1	C	21	A
2	A	22	A
3	C	23	A
4	A	24	A
5	B	25	B
6	B	26	A
7	A	27	D
8	A	28	D
9	B	29	C
10	D	30	A
11	D	31	D
12	D	32	A
13	D	33	A
14	A	34	A
15	B	35	A
16	B	36	C
17	B	37	B
18	B	38	A
19	B	39	D
20	B	40	C

Handwritten signature and date: 03/11/25

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Ph.D. Entrance Examination of CIVIL ENGINEERING

1. The minimum compressive strength of first class brick should be
A. 75 kg/cm^2
B. 90 kg/cm^2
C. 105 kg/cm^2
D. 120 kg/cm^2

2. The equivalent length of a column fixed at both ends is
A. $0.5L$
B. $0.7L$
C. $2.0L$
D. $1.5L$

where L is the clear span between fixed ends

3. For keeping the stress wholly compressive the load may be applied on a circular column within a concentric circle diameter

- A. $d/2$
B. $d/3$
C. $d/4$
D. $d/8$

where d is the diameter of the circular column

4. The deflection due to couple M at the free end of a cantilever of length L is
A. ML/EI
B. $2ML/EI$
C. $ML^2/2EI$
D. $M^2L/2EI$

5. A floating body attains stable equilibrium if the metacentre is
A. At the Centroid
B. Above the Centroid
C. Below the Centroid
D. Anywhere

6. The detention time of a settling tank may be defined as the time required for
A. A Particle to travel along its length
B. A particle to travel from top surface to bottom sludge zone
C. The Flow of Sewage to fill the tank
D. None of These

7. Cohesionless soil is
A. Sand
B. Silt
C. Clay
D. Clay & Silt

8. The minimum grade of concrete for construction under sea water is
A. M20
B. M30
C. M35
D. M15

9. The Max. Shear Stress $q_{\max}$ in a rectangular beam section is
- 1.25 $q_{\max}$
 - 1.50 $q_{\max}$
 - 2.0 $q_{\max}$
 - 2.5 $q_{\max}$
10. If the diameter of a reinforcing bar is 'd', the anchorage value of hook shall be
- 4d
 - 8d
 - 12d
 - 16d
11. The Shear reinforcement in RCC is provided to resist
- Vertical Stress
 - Horizontal Shear
 - Diagonal Compression
 - Diagonal Tension
12. An outlet is said to be proportional if its flexibility is
- Zero
 - Less than one
 - More than one
 - One
13. In a canal siphon flow is
- Under Atmospheric Pressure
 - Pipe flow
 - With Critical Velocity
 - Under Negative Pressure
14. Bar charts are suitable for
- Minor Works
 - Major Works
 - Very Large projects
 - All the above
15. The main principle of surveying is
- Part to whole
 - Whole to part
 - Traversing
 - Triangulation
16. Smallest basic unit of length in metric system is
- Meter
 - Centimeter
 - Kilometer
 - Feet
17. The Length of a standard arrow is
- 50cm
 - 40cm
 - 25cm
 - 45cm

18. The simplest type of surveying is the
A. Plane Tabling
B. Chain Surveying
C. Compass Surveying
D. None of the above
19. The principle of chain Surveying is to divide the area into
A. Rectangles
B. Triangles
C. Squares
D. Circles
20. The horizontal angle between True North and Magnetic North at any place is known as
A. Dip
B. Declination
C. Bearing
D. None of the above
21. The vertical axis, horizontal axis and the line of sight of a transit must meet in a point
A. Always
B. Sometimes
C. Never
D. None of the Above
22. The setting up a Plane Table means
A. Levelling, Centring, Orientation
B. Levelling and Orientation
C. Centring and Levelling
D. None of the Above
23. Cement possesses the unique property of
A. Settling
B. Decrease in Strength with age
C. Increase in Strength with age
D. None of the above
24. Rocks formed by solidification of lava are known as
A. Igneous Rocks
B. Sedimentary
C. Limestone
D. None of the above
25. Initial cost of flexible pavements is
A. High
B. Low
C. Medium
D. None of the above
26. The traffic signs indicating Prohibitions are known as
A. Warning Signs
B. Prohibitory Signs
C. Mandatory Signs
D. None of the above

27. The limiting Gradient recommended in the plain area is
A. 1 in 10
B. 1 in 15
C. 1 in 100
D. 1 in 20
28. Indian Road Congress was founded in
A. 1947
B. 1957
C. 1919
D. 1934
29. The first railway was opened in Germany in
A. 1887
B. 1935
C. 1835
D. 1897
30. The vertical cutting of the river bed is called
A. Scour
B. Afflux
C. Ventway
D. None of the above
31. A force while acting on a body may
A. Change its motion
B. Balance the forces already acting on it
C. Give rise to the internal stresses in it
D. All of These
32. The term Centroid is
A. The same as centre of gravity
B. The point of suspension
C. The point of Rotation
D. None of the above
33. A steel bar of 5mm is heated from 15° to 40°C and it is free to expand. The bar will induce
A. No stress
B. Shear Stress
C. Tensile Stress
D. Compressive Stress
34. The deformation of the bar per unit length in the direction of the force is known as
A. Linear Strain
B. Lateral Strain
C. Volumetric Strain
D. Shear Strain
35. The planes, which carry no shear stress are known as
A. Principle Planes
B. Oblique Planes
C. inclined Planes
D. None of the above

36. A beam of T-Section is subjected to a shear force of F . The Maximum Shear force will occur at the
- Top of the Section
 - Bottom of the Section
 - Neutral Axis of the section
 - Junction of Web and Flange
37. When two shafts of the same length one of which is hollow, transmit equal torques and have equal maximum stress, then they should have equal
- Polar Moment of Inertia
 - Polar Modulus
 - Diameter
 - Angle of Twist
38. A Column that fails due to direct stress is called
- Short column
 - Long Column
 - Weak Column
 - Medium Column
39. Weigh Batching is done by
- Spring Dial scale
 - Platform Weighing balance
 - Portable Weigh batchers
 - All of the above
40. The mixer, which produces a steady stream of concrete as long as it is in operation, is known as
- Non-Tilting batch mixer
 - Tilting-type Batch Mixer
 - Continuous batch mixer
 - None of these