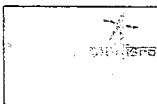


|    |   |                        |   |                        |
|----|---|------------------------|---|------------------------|
| 1. | A cohesive soil yields a maximum dry density of $18\text{kN/m}^3$ during a standard proctor compaction test. If the specific gravity is 2.65, what would be its void ratio? (Adopt unit of water as $10\text{kN/m}^3$ )   |                        |   |                        |
|    | (a) 0.5523  | (b) 0.4722             | (c) 0.7121  | (d) 0.5835             |
| 2. | A footing $2\text{m} \times 1\text{m}$ exerts a uniform pressure of $150\text{kN/m}^2$ on the soil. Assuming a load dispersion of 2 vertical to 1 horizontal, the average vertical stress in ( $\text{kN/m}^2$ ) at 1.0m below the footing is                                   |                        |   |                        |
|    | (a) 50  | (b) 75                 | (c) 80  | (d) 100                |
| 3. | Match List-I with List-II and select the correct answer using the code given below the lists :  |                        |   |                        |
|    | List - I  |                        | List - II   |                        |
|    | A. Axel Bendixen  |                        | 1. The mathematical theory of elasticity                |                        |
|    | B. Hardy Cross  |                        | 2. Theory of curved bars                                |                        |
|    | C. Winkler  |                        | 3. Slope-deflection method                              |                        |
|    | D. St. Venant   |                        | 4. Moment distribution                                  |                        |
|    | (a) A B C D<br>1 2 3 4  | (b) A B C D<br>3 4 2 1 | (c) A B C D<br>1 2 4 3                                  | (d) A B C D<br>3 2 4 1 |
| 4. | The standard size of brick is   |                        |   |                        |
|    | (a) $20\text{cm} \times 10\text{cm} \times 10\text{cm}$   |                        | (b) $19\text{cm} \times 9\text{cm} \times 9\text{cm}$   |                        |
|    | (c) $18\text{cm} \times 9\text{cm} \times 9\text{cm}$   |                        | (d) $18\text{cm} \times 10\text{cm} \times 10\text{cm}$ |                        |
| 5. | The velocity of flow of water in a pipe of 150 mm dia is 0.3m/sec, a diaphragm with a central hole 80mm in diameter is placed in the pipe obstructing the flow. With coefficient of contraction $C_c=0.60$ , the loss of head from Vena Contracta to a point downstream will be |                        |   |                        |
|    | (a) 0.1083m   | (b) 0.2250m            | (c) 1.2054m   | (d) 0.8250m            |
| 6. | If the depletion of oxygen is found to be 5 ppm after incubating a 2.5% solution of sewage sample for 5 days at $20^\circ\text{C}$ , B.O.D of the sewage is   |                        |   |                        |
|    | (a) 50 ppm  | (b) 100 ppm            | (c) 150 ppm   | (d) 200 ppm            |
| 7. | A trapezoidal section of an open channel has side slope 2H:1V. If bottom width is 'b' and depth 'd', the relation between b & d for most economical trapezoidal section of the channel is:  |                        |   |                        |
|    | (a) $b = 0.472 d$   | (b) $b/d = 0.5$        | (c) $b^2 = 0.3 d^2$                                     | (d) $d = \sqrt{b}$     |
| 8. | If the difference in elevation of an edge of the pavement 9m wide and its crown is 15 cm, the camber of the pavement is   |                        |   |                        |
|    | (a) 1 in 60   | (b) 1 in 45            | (c) 1 in 30   | (d) 1 in 15            |

|     |   |                      |                                      |                      |
|-----|---|----------------------|--------------------------------------|----------------------|
| 9.  | The scour depth $D$ of a river during flood, may be calculated from the Lacey's equation  |                      |                                      |                      |
|     | (a) $D = 0.47 (Q/f)^{1/2}$  |                      | (b) $D = 0.47 (Q/f)$                 |                      |
|     | (c) $D = 0.47 (Q/f)^{1/4}$  |                      | (d) $D = 0.47 (Q/f)^{1/3}$           |                      |
| 10. | The Glycerine is flowing at $25^{\circ}$ C in a pipe of diameter 150mm with a velocity of 3.6m/s. The flow is   |                      |                                      |                      |
|     | (a) Laminar   | (b) Turbulent        | (c) Critical                         | (d) Rectilinear      |
| 11. | A concrete column 200 x 200 mm in cross-section is reinforced with steel bars of $1200 \text{ mm}^2$ , total cross-sectional area. Calculate the safe load for the column if permissible stress in concrete is $5 \text{ N/mm}^2$ and $E_s$ is $15 E_c$                           |                      |                                      |                      |
|     | (a) 264 kN  | (b) 274 kN           | (c) 284 kN                           | (d) 294 kN           |
| 12. | For design of Flexure members, the strain in the reinforcing bars under tension at ultimate state as per IS 456-2000 shall not be less than   |                      |                                      |                      |
|     | (a) $f_y/1.15E$   |                      | (b) $f_y/1.15E_s+0.002$              |                      |
|     | (c) $f_y/E_s$   |                      | (d) $f_y/E_s+0.002$                  |                      |
| 13. | A soil has liquid limit of 35, plastic limit of 20 and moisture content 25%. What will be its liquidity index and plasticity index  |                      |                                      |                      |
|     | (a) 0.67, 15  | (b) 0.33, 15         | (c) 0.67, 25                         | (d) 0.33, 20         |
| 14. | If the moment of inertia of a section about its axis is $I$ and its effective sectional area is $A$ , its radius of gyration $r$ about the axis is  |                      |                                      |                      |
|     | (a) $r = \frac{I}{A}$   | (b) $r = \sqrt{I/A}$ | (c) $r = \sqrt[3]{I/A}$              | (d) $r = \sqrt{A/I}$ |
| 15. | A uniform cantilever beam has a span of 2m and carries a point load of 6kN at free end. The magnitude of moment to be applied at free end for zero vertical deflection at that point is (neglect self-wt. of the beam)  |                      |                                      |                      |
|     | (a) 5 kN.m  | (b) 10 kN.m          | (c) 11 kN.m                          | (d) 8 kN.m           |
| 16. | A bar 40mm in diameter and subjected to a tensile force of 40,000 kgs. Undergoes elongation resulting in decrease in diameter considering the properties of the material as $E = 2 \times 10^5 \text{ N/mm}^2$ and Poisson's ratio $\nu$ as 0.3, the modulus of rigidity will be: |                      |                                      |                      |
|     | (a) $76923.07 \text{ N/mm}^2$   |                      | (b) $20 \times 10^4 \text{ kg/cm}^2$ |                      |
|     | (c) $56898.50 \text{ N/mm}^2$   |                      | (d) $3 \times 10^5 \text{ Kg/cm}^2$  |                      |

|     |   |                             |  |                             |
|-----|---|-----------------------------|--|-----------------------------|
| 17. | <b>If the volume of a liquid weighing 3000 kg is 4 cubic metres, 0.75 is its</b>  |                             |  |                             |
|     | (a) Specific weight   |                             | (b) Specific mass                                  |                             |
|     | (c) Specific gravity  |                             | (d) Specific volume                                |                             |
| 18. | <b>The height of water level in a tank above the centre of a circular hole 2.5 cm in diameter is 50m. The velocity of water flowing through the hole is (neglect friction between jet and wall)</b> |                             |  |                             |
|     | (a) 20.53 m/sec   | (b) 25.85 m/sec             | (c) 31.32 m/sec                                    | (d) 40.40 m/sec             |
| 19. | <b>A simply supported beam is considered as a deep beam if the ratio of effective span to overall depth is less than</b>  |                             |  |                             |
|     | (a) 1   | (b) 2                       | (c) 3  | (d) 4                       |
| 20. | <b>In two dimensional stress system, the radius of the Mohr's circles represents</b>  |                             |  |                             |
|     | (a) Maximum normal stress   |                             | (b) Minimum normal stress                          |                             |
|     | (c) Minimum shear stress  |                             | (d) Maximum shear stress                           |                             |
| 21. | <b>If <math>5x+3y+7z = 5</math>, <math>3x+2y+2z = 9</math>, <math>7x+2y+10z = 5</math>, be a system of equations, then</b>  |                             |  |                             |
|     | (a) It has only trivial solution, $x=0, y=0, z=0$   |                             | (b) System is consistent and has infinite solution |                             |
|     | (c) System is consistent and has unique solution.   |                             | (d) System is inconsistent                         |                             |
| 22. | <b>What is the angle between the tangents to the curve <math>x=t, y=t^2, z=t^3</math> at <math>t= \pm 1</math></b>  |                             |  |                             |
|     | (a) $\text{Cos}^{-1}(-3/7)$   | (b) $\text{Cos}^{-1}(1/7)$  | (c) $\text{Cos}^{-1}(3/7)$                         | (d) $\text{Cos}^{-1}(-1/7)$ |
| 23. | <b>What is the Laplace transform of <math>e^{-3t}(2 \cos 5t - 3 \sin 5t)</math></b>   |                             |  |                             |
|     | (a) $2s + 9/s^2 + 6s + 34$  |                             | (b) $3s - 9/s^2 + 6s + 34$                         |                             |
|     | (c) $2s - 9/s^2 + 6s + 34$  |                             | (d) $S + 9/s^2 + 6s + 34$                          |                             |
| 24. | <b>x is a uniformly distributed random variable that takes values between 0 &amp; 1. The value of <math>E\{x^2\}</math> will be</b>   |                             |  |                             |
|     | (a) 0   | (b) 1/8                     | (c) 1/4  | (d) 1/2                     |
| 25. | <b>The earth pressure of a soil at rest, is proportional to</b>   |                             |  |                             |
|     | (a) $\tan(45^\circ - \phi)$   | (b) $\tan(45^\circ + \phi)$ | (c) $(1 - \sin \phi)$                              | (d) $(1 + \sin \phi)$       |
| 26. | <b>The slope of the e-log p curve for a soil mass gives:</b>  |                             |  |                             |
|     | (a) Coefficient of permeability, k  |                             | (b) Coefficient of consolidation $C_v$             |                             |
|     | (c) Compression index, $C_c$  |                             | (d) Coefficient of volume compressibility, $m_v$   |                             |
| 27. | <b>Stress produced in a bar by a suddenly applied load is <math>\frac{x}{\text{---}}</math> the one produced by the same load when applied gradually. The value of 'X' is</b>                       |                             |  |                             |
|     | (a) Twice   | (b) Thrice                  | (c) Same as  | (d) Half of                 |

|     |  |                    |   |                    |
|-----|--|--------------------|---|--------------------|
| 28. | Two circular mild steel bars A and B of equal lengths have diameters 2 cm and 3 cm respectively. Each is subjected to a tensile load of magnitude T. The ratio of elongations of the bars $I_A/I_B$ is |                    |   |                    |
|     | (a) 2/3  | (b) 5/8            | (c) 4/9   | (d) 2/5            |
| 29. | A pipe of $0.1 \text{ m}^2$ cross sectional area suddenly enlarges to $0.3 \text{ m}^2$ cross sectional area. If the discharge of the pipe is $0.3 \text{ m}^3/\text{sec}$ , the head loss is,         |                    |   |                    |
|     | (a) $2/g$ m of water   |                    | (b) $g/2$ m of water                                      |                    |
|     | (c) $1g$ m of water  |                    | (d) $\sqrt{g}$ m of water                                 |                    |
| 30. | The length of hydraulic jump in rectangular channel is roughly   |                    |   |                    |
|     | (a) 2 to 3 times its height  |                    | (b) 3 to 5 times its height                               |                    |
|     | (c) 5 to 7 times its height  |                    | (d) 10 to 12 times its height                             |                    |
| 31. | The absolute minimum radius of horizontal curve for a design speed of 60 Kmph is nearly  |                    |   |                    |
|     | (a) 151 m  | (b) 210 m          | (c) 360 m   | (d) 129 m          |
| 32. | If whole circle bearing of a line is $120^\circ$ , its reduced bearing is  |                    |   |                    |
|     | (a) S $20^\circ$ E   | (b) S $60^\circ$ E | (c) N $120^\circ$ E                                       | (d) N $60^\circ$ E |
| 33. | If,<br>A = Cross sectional area<br>E = Young's modulus of elasticity<br>G = Modulus of rigidity<br>J = Polar moment of inertia<br>Then Torsional rigidity is given by,                                 |                    |   |                    |
|     | (a) AE   | (b) GE             | (c) EI  | (d) GJ             |
| 34. | The Muller-Breslau principle in structural analysis is used for,   |                    |   |                    |
|     | (a) Drawing influence line diagram for any force function  |                    | (b) Superimposition of load effects                       |                    |
|     | (c) Writing virtual work equation  |                    | (d) Calculating strain energy                             |                    |
| 35. | Minimum stopping distance as per IRC for moving vehicles on road with a design speed of 80 km/hour is  |                    |   |                    |
|     | (a) 80 m   | (b) 100 m          | (c) 120 m   | (d) 150 m          |
| 36. | The bearing of C from A is N $30^\circ$ E and from B, 50 metres east of A, is N $60^\circ$ W. The departure of C from A is   |                    |   |                    |
|     | (a) 50 m   | (b) $50\sqrt{3}$ m | (c) $25\sqrt{3}$ m  | (d) 25 m           |
| 37. | Which one of the following conditions is valid in case of unconfined compression test in comparison to triaxial test?  |                    |   |                    |
|     | (a) Minor principal stress = 0   |                    | (b) Minor principal stress = 0.5 x major principal stress |                    |
|     | (c) Minor principal stress = major principal stress  |                    | (d) Major principal stress = 3 x minor principal stress   |                    |



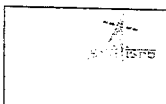
|     |   |  |  |  |
|-----|---|--|--|--|
| 38. | A rod of uniform cross-section A and length L is deformed by $\delta$ , when subjected to a normal force P. The Young's Modulus E of the material is, |  |  |  |
|     | (a) $E = \frac{P \cdot \delta}{A \cdot L}$  | (b) $E = \frac{A \cdot \delta}{P \cdot L}$ | (c) $E = \frac{P \cdot L}{A \cdot \delta}$ | (d) $E = \frac{A \cdot L}{P \cdot \delta}$ |

|     |   |                 |                                 |                 |
|-----|---|-----------------|---------------------------------|-----------------|
| 39. | A simply supported beam has an effective span of 16m. What shall be the limiting ratio of span to effective depth as per IS 456-2000?                         |                 |                                 |                 |
|     | (a) 26  | (b) 20          | (c) 12.5                        | (d) 15          |
| 40. | If the depletion of oxygen is found to be 2.5 mg/litre after incubating 2.5 ml of sewage diluted with 250 ml water for 5 days at 20°C, B.O.D of the sewage is |                 |                                 |                 |
|     | (a) 50 mg/l   | (b) 100 mg/l    | (c) 200 mg/l                    | (d) 250 mg/l    |
| 41. | The number of bricks per CUM of brickwork in CM is about  |                 |                                 |                 |
|     | (a) 200 numbers   | (b) 500 numbers | (c) 700 numbers                 | (d) 800 numbers |
| 42. | The slope correction for a length of 30 m along a gradient of 1 in 20, is   |                 |                                 |                 |
|     | (a) 3.75 cm   | (b) 0.375 cm    | (c) 37.5 cm                     | (d) 2.75 cm     |
| 43. | Both Reynolds and Froude numbers assume significance in one of following examples:  |                 |                                 |                 |
|     | (a) Motion of submarine at large depths   |                 | (b) Motion of ship in deep seas |                 |
|     | (c) Cruising of missile in air  |                 | (d) Droplet formation           |                 |
| 44. | The flow in open channel is said to be subcritical if the Froude number is  |                 |                                 |                 |
|     | (a) Less than 1.0   |                 | (b) Equal to 1.0                |                 |
|     | (c) Greater than 1.0  |                 | (d) Zero                        |                 |
| 45. | An ideal vertical curve to join two gradients is  |                 |                                 |                 |
|     | (a) Cubic   | (b) Parabolic   | (c) Elliptical                  | (d) Hyperbolic  |
| 46. | For the differential equation $dy/dx + ay = 0$ with $y(0) = 1$ , solution is  |                 |                                 |                 |
|     | (a) $e^{at}$  | (b) $e^{-at}$   | (c) $ae^{-at}$                  | (d) $e^{y-at}$  |
| 47. | $y = cx - c^2$ is a general solution of the differential equation   |                 |                                 |                 |
|     | (a) $(dy/dx)^2 - x(dy/dx) + y = 0$  |                 | (b) $d^2y/dx^2 = 0$             |                 |
|     | (c) $dy/dx = c$   |                 | (d) $d^3y/dx^3 = 0$             |                 |
| 48. | The triangle formed by three points A(1, -2, -3), B(2, -3, -1), C(3, -1, -2) is   |                 |                                 |                 |
|     | (a) Isosceles right angled $\Delta$   |                 | (b) Equilateral $\Delta$        |                 |
|     | (c) Scalene $\Delta$  |                 | (d) Acute $\Delta$              |                 |



|     |   |                                      |                                      |                                      |
|-----|---|--------------------------------------|--------------------------------------|--------------------------------------|
| 49. | The partial differential equation $5\partial^2 z / \partial x^2 + 6\partial^2 z / \partial y^2 = xy$ is,  |                                      |                                      |                                      |
|     | (a) Elliptic  | (b) Parabolic                        | (c) Hyperbolic                       | (d) Sinusoidal                       |
| 50. | If A is a 3x3 matrix and $ A =3$ , then $ 3A $ is   |                                      |                                      |                                      |
|     | a) 9  | b) 27                                | c) 81                                | d) 243                               |
| 51. | The relationship between void ratio (e) and porosity ratio (n) is:  |                                      |                                      |                                      |
|     | (a) $n = \frac{1+e}{1-e}$   | (b) $e = \frac{1+n}{1-e}$            | (c) $n = \frac{e}{1+e}$              | (d) $e = n(1+e)$                     |
| 52. | If D1 and D2 are depths of water up-stream and down-stream of a hydraulic jump in rectangular channel, the loss of head at the jump is  |                                      |                                      |                                      |
|     | (a) $\frac{(D_2 - D_1)^3}{D_1 D_2}$   | (b) $\frac{(D_2 - D_1)^3}{2D_1 D_2}$ | (c) $\frac{(D_2 - D_1)^3}{3D_1 D_2}$ | (d) $\frac{(D_2 - D_1)^3}{4D_1 D_2}$ |
| 53. | Modular ratio 'm' for M25 grade of concrete is  |                                      |                                      |                                      |
|     | (a) 18.67   | (b) 13.33                            | (c) 10.98                            | (d) None                             |
| 54. | The minimum reinforcement in slabs should not be less than ----% of the total cross-sectional area when HYSD bars are used in the either direction,                                   |                                      |                                      |                                      |
|     | (a) 0.10  | (b) 0.12                             | (c) 0.15                             | (d) 0.18                             |
| 55. | A cantilever beam carries a uniformly distributed total load W over its whole length and a concentrated upward load W at its free end. The net vertical deflection at the free end is |                                      |                                      |                                      |
|     | (a) Zero  | (b) $\frac{5.WL^3}{24 EI}$ downwards |                                      |                                      |
|     | (c) $\frac{5.WL^3}{24 EI}$ upwards  |                                      | (d) $\frac{5.WL^3}{48 EI}$ downwards |                                      |
| 56. | As per IS 1893 [Part-I] – 2002, Bangalore falls under which earthquake zone -   |                                      |                                      |                                      |
|     | (a) Zone-I  | (b) Zone-II                          | (c) Zone-III                         | (d) Zone-IV                          |
| 57. | The maximum shear stress in a rectangular beam is ----- times of average shear stress   |                                      |                                      |                                      |
|     | (a) 1.15  | (b) 1.25                             | (c) 1.5                              | (d) 1.75                             |
| 58. | Minimum cement content required for M 35 grade of concrete for very severe exposure condition as per IS 456 -2000 is ----- kg/m <sup>3</sup>  |                                      |                                      |                                      |
|     | (a) 300   | (b) 320                              | (c) 340                              | (d) 360                              |
| 59. | Permissible deviation from specified dimensions of cross-section of Column & Beams as per IS Standards is -----mm   |                                      |                                      |                                      |
|     | (a) +10 mm<br>- 4 mm  | (b) +12 mm<br>- 6 mm                 | (c) +14 mm<br>- 8 mm                 | (d) None                             |

|     |  |              |  |                       |
|-----|--|--------------|--|-----------------------|
| 60. | <b>Soundness of Cement is measured by</b>  |              |  |                       |
|     | (a) Vicat Apparatus  |              | (b) Le Chatelier Apparatus   |                       |
|     | (c) Rebound Hammer   |              | (d) Ultra Sonic Pulse Velocity Apparatus   |                       |
| 61. | <b>The moment of Inertia of a thin Rod of Mass 'm' &amp; length 'l', about its axis through its center of gravity &amp; Perpendicular to its length is</b> |              |  |                       |
|     | (a) $ml^2/4$   | (b) $ml^2/6$ | (c) $ml^2/8$   | (d) $ml^2/12$         |
| 62. | <b>The ratio of Static Friction to Dynamic friction is always</b>  |              |  |                       |
|     | (a) Equal to 1   |              | (b) Less than 1  |                       |
|     | (c) Greater than 1   |              | (d) None   |                       |
| 63. | <b>Laterite is Chemically Classified as</b>  |              |  |                       |
|     | (a) Calcareous Rock  |              | (b) Argillaceous rock  |                       |
|     | (c) Siliceous rock   |              | (d) Metamorphic rock   |                       |
| 64. | <b>The compressive strength of Granite is</b>  |              |  |                       |
|     | (a) 50to70MN / M <sup>2</sup>  |              | (b) 70 to 130MN / M <sup>2</sup>   |                       |
|     | (c) 130 to 170 MN / M <sup>2</sup>   |              | (d) 170 to 200 MN / M <sup>2</sup>   |                       |
| 65. | <b>A first class brick should not absorb water more than -----of its own dry weight after 24 hours of immersion in cold water</b>                          |              |  |                       |
|     | (a) 10%  | (b) 15%      | (c) 20%  | (d) 25%               |
| 66. | <b>For RCC Construction the maximum size of Coarse aggregate is limited to</b>   |              |  |                       |
|     | (a) 10 mm  | (b) 15 mm    | (c) 20 mm  | (d) 25 mm             |
| 67. | <b>The propagation of Shear Crack in prestressed concrete member depends on</b>  |              |  |                       |
|     | (a) Tensile Reinforcement  |              | (b) Compression Reinforcement  |                       |
|     | (c) Shear reinforcement  |              | (d) Shape of the Cross-section of beam   |                       |
| 68. | <b>A doubly Reinforced section is used ,</b>   |              |  |                       |
|     | a) When the members are subjected to alternate external loads and bending moment in the section reverses   |              | (b) When the members are subjected to loading eccentric on either side of the axis |                       |
|     | (c) When the members are subjected to accidental lateral loads   |              | (d) All the above  |                       |
| 69. | <b>The material having particle size varying from 0.007 mm to 0.06 mm is termed as ,</b>   |              |  |                       |
|     | (a) Silt   | (b) Clay     | (c) Sand   | (d) None of the above |



|     |  |   |                     |                     |
|-----|--|---|---------------------|---------------------|
| 70. | <b>In a manufacture of cement, the dry and wet mixture of Calcareous and argillaceous materials are burnt at a temperature of</b>  |   |                     |                     |
|     | (a) 900°C to 1000° C   | (b) 1000°C to 1200° C   |                     |                     |
|     | (c) 1200°C to 1500° C  | (d) 1500°C to 1600° C   |                     |                     |
| 71. | <b>A method of differential levelling is used in order to find the differences in elevation between the two points when,</b>   |   |                     |                     |
|     | (a) They are too far apart   | (b) There are obstacles between two   |                     |                     |
|     | (c) The differences between them is too great  | (d) All the above   |                     |                     |
| 72. | <b>If the depth is kept constant for a beam of uniform strength , then its width will vary in proportion to -----, where M is the bending moment,</b>  |   |                     |                     |
|     | (a) M  | (b) $\sqrt{M}$  | (c) $M^2$           | (d) $M^3$           |
| 73. | <b>A lead ball with certain velocity is made to strike a wall, it falls down; but a rubber ball of the same mass and with same velocity strikes the same wall, it rebounds. Select the reason from the following :</b>                                     |   |                     |                     |
|     | (a) Both the balls under go an equal change in the momentum  | (b) The change in momentum suffered by rubber ball is more than the lead ball |                     |                     |
|     | (c) The change in momentum suffered by rubber ball is less than the lead ball  | (d) None of the above   |                     |                     |
| 74. | <b>A large tank open to the Atmosphere is filled with water to a height of 5m from the outlet tap. A tap near the bottom of tank is now opened , and water flows out from the smooth and rounded outlet. Determine the Maximum velocity at the outlet,</b> |   |                     |                     |
|     | (a) 9.2 m/s  | (b) 9.9 m/s   | (c) 19.8 m/s        | (d) none            |
| 75. | <b>The loss of pressure in Venturimeter,</b>   |   |                     |                     |
|     | (a) Reduces with decrease in cone angle in the outlet cone   | (b) Reduces with decreasing cone angle in the inlet cone                      |                     |                     |
|     | (c) Increases with decreasing cone angle in the outlet cone  | (d) Increase with decreasing cone angle in the inlet cone .                   |                     |                     |
| 76. | <b>Bending equation is</b>   |   |                     |                     |
|     | (a) $M/I=R/E=F/Y$  | (b) $I/M=E/R=Y/R$   |                     |                     |
|     | (c) $M/I=E/R=F/Y$  | (d) $M/I=R/E=Y/F$   |                     |                     |
| 77. | <b>For a prismatic beam of length L &amp; moment of inertia I, the stiffness factor is</b>   |   |                     |                     |
|     | a) $IE/L$  | (b) $2EI/L$   | (c) $3EI/L$         | (d) $4EI/L$         |
| 78. | <b>In case of SHM, the period of oscillation (T) is given by,</b>  |   |                     |                     |
|     | (a) $T=2\omega/\pi^2$  | (b) $T=2\pi/\omega$   | (c) $T=\omega/2\pi$ | (d) $T=\pi/2\omega$ |





|     |  |                  |                  |                  |
|-----|--|------------------|------------------|------------------|
| 79. | One Newton force is,   |                  |                  |                  |
|     | (a) $10^3$ dynes   | (b) $10^4$ dynes | (c) $10^5$ dynes | (d) $10^6$ dynes |
| 80. | If 2,3,4 are the Eigen values of A , then the Eigen values of 4A will be |                  |                  |                  |
|     | (a) 2,3,16   | (b) 2,12,4       | (c) 8,12,16      | (d) 8,3,4        |

End of questions