

Exam held on: 07.05.16.

Code: D

- The first staff reading is taken after the level is setup is called :  
(a) Back sight (b) Fore sight (c) Intermediate sight (d) None of these
- In coastal region minimum grade of concrete for RCC as per IS 456-2000 :  
(a) M15 (b) M20 (c) M25 (d) M30
- The number of plastic hinges necessary to convert a beam fixed at one end and propped at other end is:  
(a) 1 (b) 2 (c) 3 (d) 4
- The bitumen grade 80/100 indicates :  
(a) Viscosity (b) Specific gravity (c) Penetration (d) None of these
- The maximum limit of super elevation for plain terrain as per IRC recommendations is:  
(a) 1 in 10 (b) 1 in 15 (c) 1 in 20 (d) 1 in 30
- A simply supported beam carries a working live load of 2.5 kN/m and dead load is 3.5 kN/m. The design load for limit state of collapse is:  
(a) 6 kN (b) 7 kN (c) 9 kN (d) 12 kN
- Standard EDTA solution is used to determine:  
(a) Hardness in water (b) Acidity in water (c) Chlorides in water (d) All of these
- For a bar of diameter 'd' the anchorage value of hook is :  
(a) 8d (b) 10d (c) 16d (d) 20d
- The ability of material to absorb large amount of energy is:  
(a) Elasticity (b) Ductility (c) Hardness (d) Toughness
- The unit in which both sedimentation and digestion process of sludge take place simultaneously is:  
(a) Digestion tank (b) Skimming tank (c) Imhoff tank (d) Detritus tank
- In the theory of plastic bending of beams, the ratio of plastic moment to yield moment is:  
(a) Shape factor (b) Plastic section modulus (c) Bulk modulus (d) Shear modulus
- Camber on highway pavement is provided to take care of:  
(a) Centrifugal force (b) Drainage (c) Sight distance (d) Off tracking
- Fine aggregate conforming of which zone is not recommended for making reinforced concrete:  
(a) Zone I (b) Zone II (c) zone III (d) Zone IV
- The quantity of Gypsum added in cement varies from 2 to 3% will depend upon the quantity of:  
(a) C<sub>3</sub>A in cement (b) C<sub>4</sub>AF in cement (c) C<sub>2</sub>S in cement (d) C<sub>2</sub>S in cement
- Strain Energy per unit volume is called:  
(a) Resilience (b) Proof resilience (c) Bulk resilience (d) None of these
- Bond between steel and concrete ensures:  
(a) Stress compatibility (b) Strain compatibility (c) Both (a) and (b) (d) None of these
- Rapid curing cutback bitumen is produced by blending bitumen with:  
(a) Benzene (b) Kerosine (c) Diesel (d) Petrol
- The relationship between the length (l) and radius (r) of an ideal transition curve is given by:  
(a)  $la \propto r$  (b)  $la \propto \frac{1}{r}$  (c)  $la \propto r^2$  (d)  $la \propto \frac{1}{r^2}$
- The minimum dissolved oxygen content (ppm) in a river necessary for the survival of aquatic life is :  
(a) 0 (b) 2 (c) 3 (d) 4
- Spire test is used for adjustment of:  
(a) Line of sight (b) Adjustment of altitude bubble (c) Horizontal axis (d) Vertical axis
- The ratio of shear stress to shear strain is constant within elastic limit is called  
(a) Torsional rigidity (b) Modulus of rigidity (c) Young's modulus (d) Volumetric strain
- In trigonometric levelling, combined correction is :  
(a) 0.0673 D<sup>2</sup>m (b) 0.0112 D<sup>2</sup>m (c) 0.0785 D<sup>2</sup>m (d) None of these
- The increase in metacentric height:  
(a) Increase stability (b) Decrease stability (c) Increase comfort for passengers (d) All of these
- What is the angle between two plane mirrors of an optical square?  
(a) 15° (b) 30° (c) 45° (d) 90°
- Characteristic compressive strength of concrete is :  
(a) The same as the average cylinder strength (b) The same as the average cube strength (c) Lower than the average cylinder strength (d) Higher than the average cube strength
- Distances are measured with instruments that rely on propagation, reflection and subsequent reception of either radio, visible light or infra red waves by :  
(a) Geodimeter (b) Telluro meter (c) Distomat (d) All of these
- Coagulation - flocculation with alum is performed :  
(a) Before screening (b) After rapid sand filtration (c) Before rapid sand filtration (d) Immediately before chlorination
- Three point problem can be solved by :  
(a) Graphical method (b) Tracing paper method (c) Trial and error method (d) All of these
- The mass production of railway sleepers can be done with :  
(a) Hoyer system (b) Magnel system (c) Gifford udall system (d) None of these
- A pre-stressed concrete beam is loaded with two point loads. The profile of cable is laid based on the load balancing concept, the shape of profile is :  
(a) Parabolic (b) Triangular (c) Trapezoidal (d) None of these
- For a station to be free of local attraction :  
(a) Fore and back bearings of the line should be exactly same (b) Fore and back bearings of line should differ by exactly 180° (c) Fore and back bearings of line should be measured accurately (d) None of these
- Closed contours with higher value inside represent a :  
(a) hill (b) valley (c) plain surface (d) None of these
- Consistency index for a clayey soil is [Liquid limit = LL, Plastic limit = PL, Plasticity index = PI and natural water content = W] :  
(a) LL-PL (b)  $\frac{W-PL}{PI}$  (c)  $\frac{LL-W}{PI}$  (d) all of these
- In a cantilever beam, if the length is doubled while keeping the cross section and the concentrated load acting at the free end is same, the deflection at the free end will increase by:  
(a) 2 times (b) 4 times (c) 6 times (d) 8 times
- In levelling height of instrument is:  
(a) Height of levelling staff (b) Elevation of plane of collimation (c) Height of Tripod (d) Sum of reduced level of BM and foresight
- Roof truss is provided when the span is:  
(a) less than 4 m (b) more than 5 m (c) between 4 m and 5 m (d) all of these
- 110 cm theodolite means that:  
(a) Diameter of the graduated circle of its lower plate is 10 cm (b) Length of its telescope is 10 cm (c) Height of the telescope is 10 cm (d) Diameter of the graduated circle of its vertical circle is 10 cm
- A column of length L, one end fixed, at other end lateral displacement and partial rotation. The effective length of column is:  
(a) 0.5 L (b) 0.7 L (c) L (d) 1.5 L
- The expected life of cement concrete floor is taken as:  
(a) 10 years (b) 25 years (c) 50 years (d) 100 years
- The boundaries between the pavement and shoulder or foot paths are called:  
(a) Kerbs (b) Burrow pit (c) Berms (d) None
- Vertical windows built on sloping sides of a pitched roof:  
(a) Corner window (b) Bay window (c) Dormer window (d) Glazed window
- If 20 m arc length is the basis for the degree of curve then radius of curve is:  
(a)  $\frac{573}{D}$  metres (b)  $\frac{1146}{D}$  metres (c)  $\frac{1600}{D}$  metres (d)  $\frac{5730}{D}$  metres
- A pin jointed plane frame with 'n' number of member and 'j' number of joints will be stable:  
(a)  $n=2j-3$  (b)  $n>2j-3$  (c)  $n<2j-3$  (d) None of these
- The permissible shear stress in concrete for beams without shear reinforcement depends upon:  
(a) Grade of concrete (b) Percentage tension reinforcement (c) Both (a) and (b) (d) None
- The minimum grade of concrete used for post-tensioning system is:  
(a) M20 (b) M30 (c) M40 (d) M60
- A thin cylindrical vessel of internal diameter 'd' and thickness 't' subjected to fluid pressure 'p' longitudinal stress is:  
(a)  $\frac{pd}{2t}$  (b)  $\frac{pd}{t}$  (c)  $\frac{pd}{4t}$  (d)  $\frac{pd}{8t}$
- Reciprocal levelling eliminates the effect of:  
(a) Errors due to curvature of earth (b) Errors due to atmospheric refraction (c) Errors due to line of collimation (d) All of these
- Pile caps are used on a group of piles to:  
(a) Increase the load bearing of each pile (b) Protect the piles from lateral displacement (c) Protect in case of offshore structure (d) Spread the vertical and horizontal loads to all the piles
- According to IS 456-2000, maximum compressive stress in concrete for design purpose is taken as :  
(a) 0.380 f<sub>ck</sub> (b) 0.416 f<sub>ck</sub> (c) 0.446 f<sub>ck</sub> (d) 0.670 f<sub>ck</sub>
- The relative density of a soil having maximum dry density rd(max) = 2 minimum dry density 1.2 and normal density is 1.6 :  
(a) 75% (b) 62.5% (c) 66.67% (d) 50%
- If the uniformity coefficient Cu = 9 and coefficient of curvature Cc = 1 for a soil then  $\frac{D_{30}}{D_{10}}$  for the soil is :  
(a) 1 (b) 2 (c) 3 (d) 4
- The whole circle bearings of line AB and BC are 60° 15' and 150° 30'. What is the included angle ABC between the lines AB and BC :  
(a) 90° 15' (b) 210° 45' (c) 149° 15' (d) 89° 45'
- The distance from two point on a photographic point to the principal line are 68.24mm to left and 58.48 mm to the right. The angle between the two points measured with a transit theodolite is 44° 30'. Focal length of the lens is equal to :  
(a) 150 mm (b) 154.7 mm (c) 160 mm (d) 180 mm
- It is proposed to put in a circular curve of 20 chains radius with transition curves 3 chains long at each end. The total deflection angle of the combined curve is 40° 30'. The total tangent length in chains is :  
(a) 8.882 (b) 10.98 (c) 15 (d) 18.50
- Which of the following figure are equal to one acre?  
(a) 43560 sq. ft (b) 40 Gunthas (c) 10 sq. Gunter's chain (d) All of these
- A cylindrical shell is 3 m long and 1000 mm internal diameter and 15 mm thickness is subjected to an internal pressure of 1.5 N/mm<sup>2</sup>. The maximum shear stress developed in N/mm<sup>2</sup> is:  
(a) 12.5 (b) 15.5 (c) 16 (d) 18.8
- Slenderness ratio of a 5m long column fixed at both ends and having a circular cross section with dia 10 cm is :  
(a) 100 (b) 115 (c) 150 (d) 200
- The shape factor of rectangular section is:  
(a) 1.5 (b) 2 (c) 2 (d) 2.5
- Neutral float can occur in case of:  
(a) Normal activity (b) Critical activity (c) Sub-critical activity (d) Super critical activity
- Sea water has a total dissolved solids concentration of about:  
(a) 360 mg/litre (b) 3,600 mg/litre (c) 36,000mg/litre (d) 3,60,000 mg/litre
- Maximum value of strain hardening modulus occurs :  
(a) at the beginning of strain hardening curve (b) during first half of strain - hardening curve (c) during second half of strain hardening curve (d) at the end of strain hardening curve
- A 30 m metric chain is found to be 10 cm too short throughout a measurement. If the distance measured is recorded as 300 m. What is the actual distance?  
(a) 300.1m (b) 299 m (c) 301 m (d) 304 m
- The unknown multiples or independent constants used for finding most probable values of unknown are known as :  
(a) correlates (b) matching value (c) adjustment factors (d) none of these
- The photographic coordinates of pt A is +8.48mm and -16.38 mm. The focal length of the lens is 120.80 mm. Azimuth of the camera axis is 10° 53'. Azimuth of B is:  
(a) 32° 40' (b) 11° 53' (c) 18° 48' (d) 14° 53'
- The void ratio and specific gravity of a soil are 0.65 and 2.72 respectively. The degree of saturation in percent corresponding to water content of 20% is:  
(a) 65.3 (b) 83.7 (c) 20.9 (d) 54.4
- Auxiliary theodolite station near an inaccessible main triangulation station :  
(a) change point (b) benchmark (c) satellite station (d) none of these
- The maximum and minimum number of steps in a flight is equal to :  
(a) 12 and 1 (b) 18 and 2 (c) 24 and 3 (d) 12 and 3
- What is the angle of intersection of a contour and a ridge line?  
(a) 0° (b) 90° (c) 180° (d) 270°
- If stiffness of a metal increases its ductility :  
(a) Decreases (b) Increases (c) Remains same (d) None of these
- Temporary hardness in water is caused by the presence of:  
(a) Chlorides of Ca and Mg (b) Nitrates of Ca and Mg (c) Bicarbonates of Ca and Mg (d) Sulphates of Ca and Mg
- A header bond is usually used for:  
(a) Half brick wall (b) One brick wall (c) One and a half brick wall (d) Two brick wall
- Endurance limit of a metal is determined by :  
(a) Hardness test (b) Torsion test (c) Impact test (d) Fatigue test
- An instrument is used to measure distance, horizontal angle and vertical angle :  
(a) Theodolite (b) Distanat (c) Total station (d) Tacheometer
- For steel grade fy = 415N/mm<sup>2</sup> the value of xu max/d is :  
(a) 0.48 (b) 0.46 (c) 0.43 (d) 0.53
- A depression formed in a surface layer longitudinal to the road by the wheels of travelling vehicles is called:  
(a) Depression (b) Blow hole (c) Pothole (d) Rut
- Two and a half brick thickness of wall is roughly equal to:  
(a) 10 cm (b) 20 cm (c) 40 cm (d) 50 cm
- In this process the soil particles are forced to move closer together by pounding action :  
(a) rolling (b) ramming (c) kneading (d) vibrations
- White cement contains the following ingredient in least amount?  
(a) Lime (b) Silica (c) Iron oxide (d) None of these
- Brick should have a minimum compressive strength of:  
(a) 5.5 N/mm<sup>2</sup> (b) 8 N/mm<sup>2</sup> (c) 10 N/mm<sup>2</sup> (d) 12.5 N/mm<sup>2</sup>
- According to limit state of collapse values of partial safety factor for steel and concrete are  
(a) 1 and 1 (b) 1 and 1.2 (c) 1 and 2 (d) 1.15 and 1.5
- The author of the novel 'Agnisakshi':  
(a) V.T. Bhattathiripad (b) Lalithambika Antharjanam (c) Arya Pallam (d) Lalitha Prabhu
- Who established Ananda Mahasabha :  
(a) Brahmananda Sivayogi (b) Vagbhadananda (c) Swami Agamananda (d) Swami Ananda Theerthan
- K.P. Keshava Menon is the founder of which popular news paper in Kerala :  
(a) Deshabhimani (b) Kerala Kaumudi (c) Madhyamam (d) Mathrubhumi
- Which among the following award was not received by Vaikom Muhammed Basheer?  
(a) Vallathol Award (b) Padmashri Award (c) Jnanpith Award (d) Muttathu Varkey Award
- Which among the following is not the work of S.K. Pottekkad?  
(a) Oru Deshathinte Katha (b) Kayar (c) Naadan Premam (d) Oru Theruvinte Katha
- From which country India borrowed the concept of preamble of Indian Constitution :  
(a) Germany (b) U.S.A (c) Canada (d) Spain
- 'Right to Education Act' included, in which article :  
(a) Article 22 (b) Article 23 (c) Article 51 (d) Article 21 (A)
- In which year Dr. A.P.J. Abdul Kalam received Bharat Ratna :  
(a) 1981 (b) 1990 (c) 1997 (d) 1998
- Who was the Indian shuttler to win silver medal in 2015 World Badminton Championship?  
(a) Saina Nehwal (b) P.V. Sindhu (c) Jwala Gutta (d) Kidambi Srikanth
- The programme aims to provided housing for the rural poor in India :  
(a) Samagra Awaas Yojana (b) Bharat Nirman (c) Indira Awaas Yojana (d) Antyodaya Anna Yojana
- In which year university of Travancore established?  
(a) 1937 (b) 1875 (c) 1930 (d) 1957
- Who prepared the first authentic book in Malayalam Grammar?  
(a) Rev. Mead (b) Hermann Gundert (c) Dawson (d) Twinkle Tab
- The scheme aims at opening a zero balance bank account for every Indian family:  
(a) Samagra Awaas Yojana (b) Valmiki Ambedkar Awaas Yojana (c) Sampooma Grameen Rozgar Yojana (d) Jan Dhan Yojana
- Who founded the organization vaala samudaya parishkarani sabha?  
(a) Pandit K.P. Karuppan (b) Ayya Vaikundar (c) Kumara Guru (d) Sahadran Ayyappan
- Which among the following was the organization of vaikunta swami?  
(a) Prathyaksha Raksha Daiva (b) Samatva Samajan (c) Yogakshema Sabha (d) SNDP Yogam
- Kuttamakulam Sathyagraha associated with which temple :  
(a) Guruvayur temple (b) Chottanikara Temple (c) Koodalmanikyam Teemple (d) Vaikom Temple
- The protest against the policy of appointing outsiders to Travancore service known as :  
(a) Paliyam Satyagraha (b) Abstention Movement (c) Ezhava Memorial (d) Malayali Memorial
- The news paper started by Vakkom Maulavi in 1905 :  
(a) Al - Ameen (b) Prabhatham (c) Kesari (d) Swadeshbhiniami
- The father of the library movement in Kerala :  
(a) K.M. Panikkar (b) P. Kesavadev (c) P.N. Panicker (d) P.C. Kuttikrishnan
- The first woman in India to became a high court judge :  
(a) Annachandy (b) Pathima Beevi (c) Akkama Cheriyan (d) Sujatha Manohar

**Answer Key**

- 1 a, 2 d, 3 b, 4 c, 5 a, 6 c, 7 a, 8 c, 9 d, 10 c, 11 a, 12 b, 13 d, 14 a, 15 d, 16 b, 17 a, 18 d, 19 d, 20 c, 21 b, 22 a, 23 a, 24 c, 25 b, 26 d, 27 c, 28 d, 29 a, 30 c, 31 b, 32 a, 33 c, 34 d, 35 b, 36 b, 37 a, 38 d, 39 a, 40 a, 41 c, 42 b, 43 a, 44 c, 45 b, 46 c, 47 d, 48 d, 49 c, 50 b, 51 c, 52 d, 53 b, 54 a, 55 c, 56 a, 57 a, 58 b, 59 d, 60 c, 61 b, 62 b, 63 a, 64 d, 65 b, 66 c, 67 d, 68 b, 69 a, 70 c, 71 b, 72 d, 73 c, 74 a, 75 d, 76 d, 77 b, 78 c, 79 c, 80 d, 81 b, 82 a, 83 d, 84 c, 85 b, 86 b, 87 d, 88 c, 89 a, 90 c, 91 a, 92 b, 93 d, 94 a, 95 b, 96 c, 97 d, 98 d, 99 c, 100 a