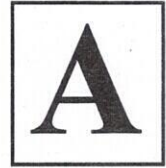


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TR/TES/PRE/CIVIL/DIPLOMA/(Gr.II)/2025

Test Booklet Series

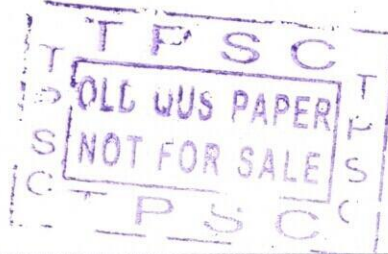
**TEST BOOKLET
GENERAL STUDIES AND
ENGINEERING APTITUDE**



(Signature of the Candidate)

(Invigilator's Signature)

Time Allowed – Two (02) hours



Maximum Marks – 100

INSTRUCTIONS

1. PLEASE CHECK THE TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.
2. **ENCODE CLEARLY THE TEST BOOKLET SERIES A, B, C OR D AS THE CASE MAY BE IN THE APPROPRIATE PLACE ON THE ANSWER SHEET BY BLACK BALL POINT PEN ONLY.**
3. This Test Booklet contains 100 items (questions). Each question has four responses (answers). You will select the responses which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the most appropriate. In any case, choose **ONLY ONE** response for each item.
4. You have to mark all your responses **ONLY** on the separate Answer Sheet provided. See directions in the Answer Sheet.
5. All items carry equal marks.
6. Before you proceed to mark on the Answer Sheet the responses to various items in the Test Booklet, you have to fill in some particulars on the Answer Sheet as per instructions sent to you with your Admission Certificate.
7. After you have completed filling in responses on the Answer Sheet and the Examination is completed, you should handover the Answer Sheet to the Invigilator only. You are permitted to take away the Test Booklet.
8. Sheets for rough work are appended on the Test Booklet at the end.
9. **Penalty for wrong answers :**
 - (a) There will be four alternatives for the answer to every question. For each question for which a wrong answer has been given by the candidate, **one-fourth** of the marks assigned to that question will be deducted as penalty.
 - (b) If a candidate gives more than one answer, it will be treated as a **Wrong Answer** even if one of the given answers happens to be correct and there will be same penalty as above to that question.
 - (c) If a question is left blank, i.e., no answer is given by the candidate, there will be **no penalty** for that question.

DO NOT OPEN THIS TEST BOOKLET UNTIL YOU ARE ASKED TO DO SO.

Four options are given against each of the following questions. Select the correct option from the four options and encode it in the answer sheet by using **Black Ball Point Pen** only as per examples given below :

Example P : Aunt Polly wanted to trap Tom _____ damaging confessions.

☒ (A) into

(B) with

(C) by

(D) on

Example Q : Let's watch _____ movie; I mean 'Pathar Panchali'.

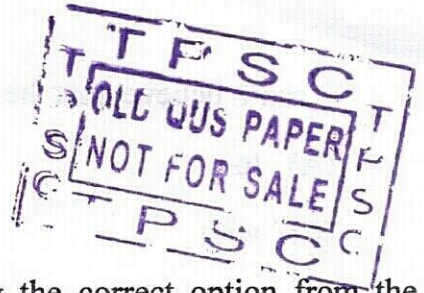
(A) a

(B) an

☒ (C) the

(D) No article is needed.

PART - I



Answer the following questions from 1 to 10 by choosing the correct option from the choices given :

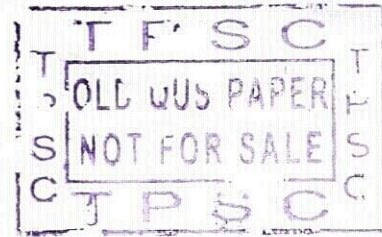
I. Choose the correct sentence from the options given in Question Nos. 1 and 2.

1. (A) I met her by chance then I go to get some medicine.
- (B) I met her by chance when I went to getting some medicine.
- (C) I met her by chance then I go to getting some medicine.
- (D) I met her by chance when I went to get her some medicine.

2. (A) More than two-thirds of the World's large cities are in areas sensitive to Global Warming and rising sea-level.
(B) More than two-thirds in the World's large cities are in areas sensitive of Global Warming and rising sea-level.
(C) More than two-thirds in the World's large cities are on areas sensitive of Global Warming and rising sea-level.
(D) More than two-thirds of the World's large cities are with areas sensitive over Global Warming and rising sea-level.

II. Fill in the blanks with appropriate prepositions from the choices given in Question Nos. 3 and 4 :

3. The Rajput declared before his last breath that death is preferable _____ dishonour.
(A) in (B) to
(C) than (D) with
4. I can't believe that he is vexed _____ me.
(A) to (B) over
(C) with (D) into



III. Select the antonyms of the words in Question No. 5 and 6 from the given options :

5. Vague
(A) Opaque (B) Transparent
(C) Rear (D) Weak
6. Amateur
(A) Minor (B) Despair
(C) Immature (D) Professional

IV. Choose the word which is most nearly the same in meaning as the given words in Question Nos. 7 and 8.

7. Interpolate

(A) Clarify

(B) Investigate

(C) Reverse

(D) Insert

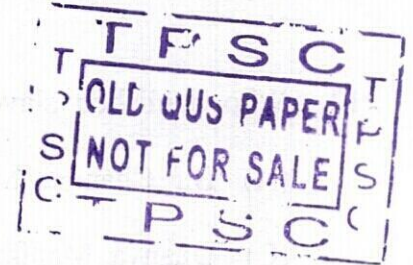
8. Primordial

(A) Feeling of elation

(B) Original

(C) Elementary

(D) Daunting



V. Choose the correct article to fill in the blanks given in Q. Nos. 9 and 10.

9. Is this _____ book you are telling me about ?

(A) an

(B) a

(C) the

(D) None of these

10. Be careful of the speed of your vehicle when you are passing _____ one way road.

(A) a

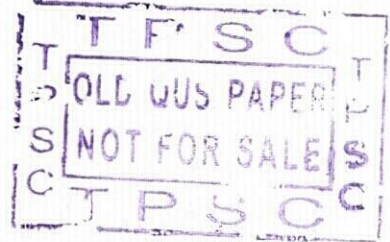
(B) the

(C) an

(D) None of these.

PART – II

11. Tripura acceded to the Indian Union and became a part and parcel of it on
(A) 9th September, 1949 (B) 15th October, 1949
(C) 15th August, 1947 (D) 15th October, 1947
12. Who abolished slavery from Tripura ?
(A) Bir Chandra Manikya (B) Bir Bikram Manikya
(C) Dhanya Manikya (D) Radhakishore Manikya
13. Who became the Chief Minister of Delhi after the last Assembly Election held there in February, 2025 ?
(A) Manoj Verma (B) Arvind Kejriwal
(C) Rekha Gupta (D) Atishi Marlena
14. The State which topped in Panchayat Devolution Index Report, 2025 is _____.
(A) Tamil Nadu (B) Kerala
(C) Karnataka (D) Gujarat
15. Where is the Headquarters of UNESCO ?
(A) Paris (B) London
(C) Geneva (D) Vienna
16. Who is the winner of the 59th Jnanpith Award, 2025 ?
(A) Gayatri Chakravorty Spivak (B) Taslima Nasrin
(C) Vinod Kumar Shukla (D) None of them



17. The hijacking of the "Jaffar Express Train " in Pakistan in March, 2025 occurred in

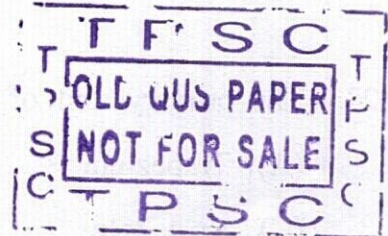
- (A) Sind Province (B) Punjab
(C) Occupied Kashmir (D) Balochistan

18. The city of Ujjaini is situated on the bank of the river

- (A) Narmada (B) Shipra
(C) Godavari (D) Cauvery

19. Global Gender Gap Index (GGGI) is released by _____.

- (A) International Labour Organisation
(B) World Bank
(C) World Economic Forum
(D) United Nations Development Programme



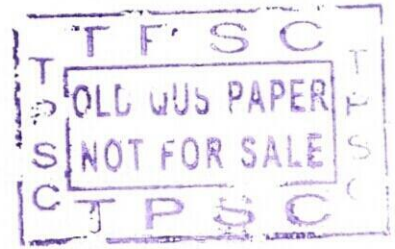
20. Which of the following statements are correct in respect of Aadhaar Good Governance Portal _____.

- I. This Portal is aimed at streamlining the approval process of Aadhaar authentication requests.
II. It was launched by Ministry of Home Affairs, Government of India.
III. This platform follows the recent amendments to Aadhaar Authentication for Good Governance Rules-2024.
IV. The Aadhaar Programme was launched in the year 2009.

- (A) I and IV (B) I and II
(C) II and III (D) I and III

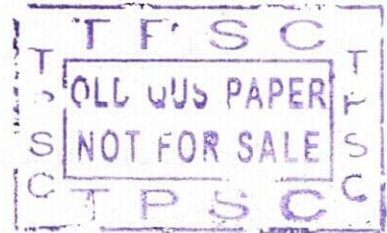
PART – III

21. The bending moment on a section is maximum where shear force is
- (A) Zero (B) Minimum
(C) Maximum (D) Changing Sign
22. The moment of inertia of a triangle of base 'b' and height 'h' about the base is
- (A) $\frac{bh^3}{12}$ (B) $\frac{bh^3}{6}$
(C) $\frac{bh^3}{36}$ (D) $\frac{bh^3}{18}$
23. The primary unit of a truss is
- (A) Trapezium (B) Parallelogram
(C) Rectangle (D) Triangle
24. A cantilever beam of length L is subjected to counter clockwise moment MO at the free end. The shape of B.M.D. and S.F.D. respectively will be
- (A) Triangular, Rectangular (B) Rectangular, Line
(C) Partly Rectangular, Partly Triangular (D) Triangular, Line
25. A member is subjected to a rise in temperature develops thermal stresses
- (A) when it is allowed to expand
(B) when it is not allowed to expand
(C) irrespective of conditions in (A) and (B)
(D) when thermal strain develops

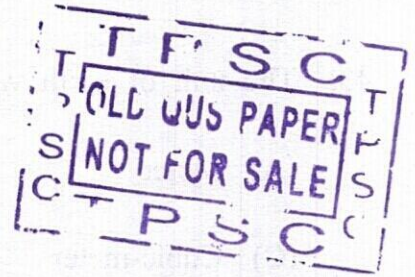


26. An increase in temperature on the top fibre of a simply supported beam will cause
- (A) Downward deflection (B) Upward deflection
- (C) No deflection (D) Angular rotation about neutral axis
27. If moment of inertia of timber is I_1 , moment of inertia of steel is I_2 and the modular ratio 'm' is E_2/E_1 , E being modulus of elasticity, then the equivalent moment of inertia of composite beam made of steel and timber expressed in terms of timber is given by
- (A) $I_1 + \frac{I_2}{m}$ (B) $I_2 + \frac{I_1}{m}$
- (C) $I_1 + m * I_2$ (D) $I_2 + m * I_1$
28. If the width of a rectangular cantilever beam is halved, the deflection at its free end will
- (A) increase by 8 times (B) increase by 2 times
- (C) decrease by 4 times (D) None of (A), (B) or (C)
29. Shear stress on a principal plane is
- (A) Maximum (B) Minimum
- (C) Zero (D) None of (A), (B) or (C)
30. A simply supported beam of constant El is subjected to a uniformly distributed load totalling wl over its entire span of l . The deflection at the centre and rotation at each end are given by
- (A) $\frac{5wl^4}{384 El}, \frac{wl^2}{3El}$ (B) $\frac{5wl^4}{384 El}, \frac{wl^3}{24El}$
- (C) $\frac{wl^4}{48 El}, \frac{wl^3}{24El}$ (D) None of (A), (B) or (C)

31. Total shear forces/total area in shear =
- (A) Average shear stress (B) Maximum shear stress
(C) Effective shear stress (D) Shear stress
32. Unequal settlements in the supports of a statically indeterminate structure develop
- (A) Member forces (B) Reactions at the support(s)
(C) Strains in the members (D) All of (A), (B) or (C)
33. If a three hinged parabolic arch carries an uniformly distributed load throughout every section of the arch resists only
- (A) Normal thrust (B) Shear force
(C) Bending moment (D) All of (A), (B) or (C)
34. Maximum area of tension reinforcement in reinforced concrete beam of overall width, 'b' and depth, 'D' shall not exceed
- (A) $0.04 bD$ (B) $0.08 bD$
(C) $0.02 bD$ (D) $0.10 bD$
35. The maximum value of span/effective depth ratio permissible in case of a simply supported reinforced concrete beam is
- (A) 5 (B) 10
(C) 20 (D) 40
36. In Limit State Method of design, ratio of compressive strength to characteristics strength of concrete is
- (A) 0.5 (B) 0.446
(C) 0.67 (D) 1.0

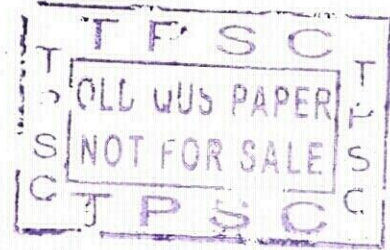


37. As per IS 456:2000, span to overall depth ratio for two-way simply supported slabs (with HYSD bars) satisfying vertical deflection limits is
- (A) 28 (B) 30
(C) 32 (D) 35
38. A concrete mixer is specified by
- (A) the volume of the mixing drum
(B) the Horse power of the prime-mover
(C) the volume of mixed concrete per batch
(D) the Mixer drum speed
39. The property of material due to which it can be drawn into wires is known as
- (A) Malleability (B) Ductility
(C) Toughness (D) Softness
40. Seasoning of timber is done to
- (A) reduce the weight of timer
(B) reduce the chance of shrinkage
(C) increase the strength and durability
(D) All of (A), (B) or (C)
41. The load of equipment and furniture kept in a building is termed as
- (A) Dead load (B) Live load
(C) Design load (D) All of (A), (B) and (C) are wrong



42. Direct cost of a project is due to

- (A) Establishment charges due to salaries of admin staff
- (B) Loss or gain of revenue
- (C) Cost of material
- (D) Penalty imposed



43. The unit of earth work is per

- (A) Meter
- (B) Square-meter
- (C) Cubic-meter
- (D) All of (A), (B) or (C)

44. The plinth area of a building does not include

- (A) Lift and wall including landing
- (B) Area of the cantilever porch
- (C) Internal shaft for installations
- (D) Area of the walls at floor levels

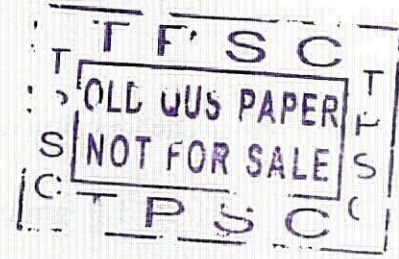
45. For aggressive environment (exposure condition as severe), the assessed surface width of cracks should not exceed

- (A) 0.1 mm
- (B) 0.2 mm
- (C) 0.3 mm
- (D) 0.4 mm

46. The shrinkage of concrete is due to change in

- (A) Length
- (B) Cross-sectional area
- (C) Volume
- (D) The surface area

47. The surface width of the cracks should not, in general, exceed ____ mm in members where cracking is not harmful and does not have any serious adverse effects upon the preservation of reinforcement steel nor upon the durability of the structures.
- (A) 0.02 (B) 0.3
(C) 0.2 (D) 0.03
48. The centre to centre distance between two adjacent rivets along the direction of applied/external load is known as
- (A) Staggered pitch (B) Gauge
(C) Pitch (D) Edge distance
49. In steel structure, the wires/cables are generally used as
- (A) Compression members (B) Tension members
(C) Members for resisting shear (D) Either of (A) or (B)
50. A boom is which type of principal member in a crane ?
- (A) Tension (B) Flexure
(C) Torsion (D) Compression
51. The Poisson Ratio and Modulus of Elasticity of structural steel irrespective of its grade may be taken as
- (A) 0.15 and 1.0×10^5 MPa (B) 0.3 and 2.0×10^5 MPa
(C) 0.3 and 0.769×10^6 MPa (D) 0.15 and 1.0 MPa
52. The most efficient cross-section, using the same quantity of steel, for resisting torsional force is
- (A) Solid circular (B) Hollow circular
(C) Solid square (D) Solid rectangular



53. The strength of butt weld is

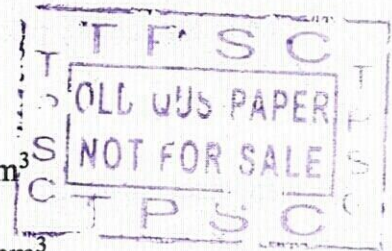
- (A) About 50-90% of the member (B) Equal to the strength of the member
(C) More than strength of the member (D) None of (A), (B) or (C)

54. The type of weld used for joining two surfaces at right angles to each other is

- (A) Butt weld (B) Fillet weld
(C) Groove weld (D) Either (A) or (B)

55. The density of steel used for structural members is

- (A) 1.0 gm/mm^3 (B) 6.4 gm/mm^3
(C) 7.85 gm/mm^3 (D) 13.6 gm/mm^3



56. The mode of failure of fillet weld is

- (A) Tension (B) Shear
(C) Bearing (D) Crushing

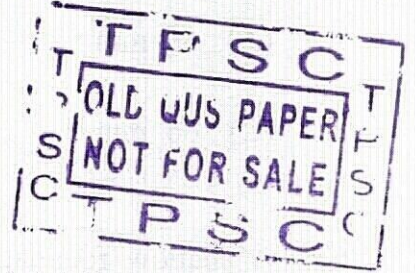
57. For the fillet weld of size, 'S' the effective throat thickness is

- (A) $0.61 S$ (B) $0.65 S$
(C) $0.70 S$ (D) $0.75 S$

58. Granite stone is

- (A) Igneous rock (B) Sedimentary rock
(C) Metamorphic rock (D) None of (A), (B) and (C)

59. The compressive strength of stone is found out by
(A) Attrition test (B) Crushing test
(C) Hardness test (D) Impact test
60. For a rectangular foundation of width, 'b', the eccentricity of the load should not be greater than
(A) $b/3$ (B) $b/4$
(C) $b/5$ (D) $b/6$
61. The bricks used for lining of furnaces are
(A) Under burnt bricks (B) Over burnt bricks
(C) Refractory bricks (D) Clay bricks
62. The width of landing in a staircase should not be less than
(A) 1.0m (B) 1.2m
(C) 0.9m (D) Stair width
63. The maximum size of the aggregate used in a damp proof course is about
(A) 6 mm (B) 10 mm
(C) 15 mm (D) 20 mm
64. Vicat's apparatus is used to determine the
(A) The initial setting time of the cement
(B) Final setting time of the cement
(C) Normal consistency of the cement
(D) All of (A), (B) and (C)



65. The strength of cement concrete depends mainly on

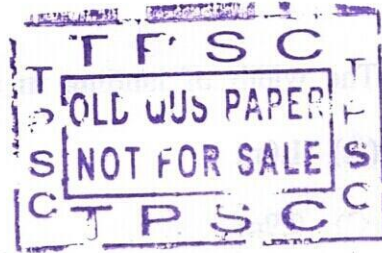
- (A) Water-cement ratio
- (B) Quality of water
- (C) Quantity of aggregate
- (D) Quality of cement

66. In a Standard Penetration Test, the height of the fall of the hammer is

- (A) 86 mm
- (B) 76 mm
- (C) 66 mm
- (D) 56 mm

67. A shallow foundation is defined as a foundation which

- (A) is 30° to equipotential line that has low bearing capacity
- (B) is resting on ground surface
- (C) has depth less than width
- (D) causes less settlement



68. Falling head method to determine permeability test is suited for

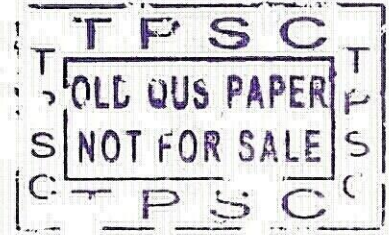
- (A) Clayey soils
- (B) Coarse grained soils
- (C) Both (A) and (B)
- (D) None of (A), (B) or (C)

69. For compaction of soil in laboratory using Indian Standard light compaction test, the weight of hammer used for giving blows to soil is

- (A) 6.5 kg
- (B) 4.9 kg
- (C) 3.5 kg
- (D) 2.6 kg

70. The contact pressure of rigid footing on cohesive soil is

- (A) More in the centre than at the edges
- (B) Less in the centre than at the edges
- (C) Uniform throughout
- (D) None of (A), (B) or (C)



71. For a pin jointed plane frame, the relation between number of joints, 'j', and the number of members, 'm' is given by

- (A) $m = 2j - 3$
- (B) $m = 2j + 3$
- (C) $m = 3j - 2$
- (D) $m = 3j + 2$

72. The relationship between radius of curvature, 'R', bending moment, 'M' and flexural rigidity EI is given by

- (A) $R = M/EI$
- (B) $M = EI/R$
- (C) $EI = R/M$
- (D) $EI = M/R$

73. The deflection at centre of a simply supported beam of span, 'L' subjected to concentrated load, 'W' at midspan is

- (A) $\frac{wL^3}{48 EI}$
- (B) $\frac{wL^2}{48 EI}$
- (C) $\frac{wL^2}{16 EI}$
- (D) $\frac{wL^3}{16 EI}$

Other notations have their usual meaning.

74. The diagram showing the variation of axial load along the span is called

- (A) Shear force diagram
- (B) Bending moment diagram
- (C) Thrust diagram
- (D) Influence line diagram

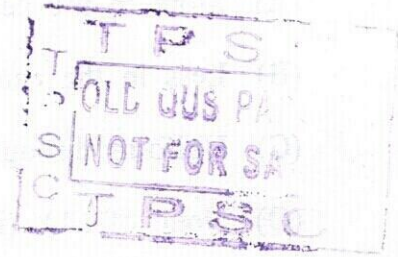
75. Section modulus of a circular section of diameter, 'd', is

(A) $\frac{\pi d^3}{64}$

(B) $\frac{\pi d^3}{32}$

(C) $\frac{\pi d^3}{16}$

(D) $\frac{\pi d^3}{8}$



76. The best hydraulic channel cross-section is the one which has a

- (A) Minimum roughness coefficient (B) Least cost
(C) Maximum area for a given flow (D) Minimum wetted perimeter

77. Pelton wheel is a

- (A) Tangential flow turbine (B) Radial flow turbine
(C) Mixed flow turbine (D) Axial flow turbine

78. In brick masonry, the frog of the brick is normally kept on the

- (A) Bottom face (B) Top face
(C) Exposed face (D) Interior face

79. The sides of the opening such as doors, windows are known as

- (A) Jambs (B) Heads
(C) Reveals (D) Verticals

80. The slope of stair should not be more than

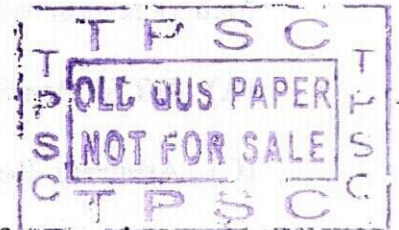
- (A) 40 degree (B) 45 degree
(C) 50 degree (D) 60 degree

81. The member laid horizontally to support the common rafters and which transmit the load to truss or walls is called

- (A) Jack Rafters (B) Dragon Beam
(C) Purlins (D) Battens

82. In long buildings, expansion joints are recommended to be provided at interval of

- (A) 30-35m (B) 55-60m
(C) 70-75m (D) 90-95m



83. Principle of surveying followed to prevent accumulation of errors is

- (A) to work from part to whole (B) to work from whole to part
(C) None of (A) or (B) (D) Both (A) and (B)

84. The representative fraction $1/1,00,000$ signifies a scale of

- (A) 1 cm = 100000m (B) 1 cm = 10 km
(C) 1 cm = 1 km (D) None of (A), (B) and (C)

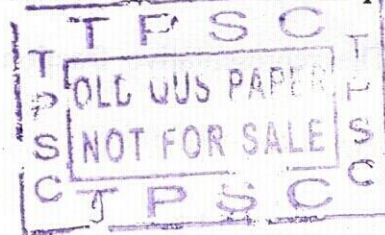
85. The rise and fall method of levelling provides a complete check on

- (A) Backsight (B) Intermediate sight
(C) Foresight (D) All of (A), (B) and (C)

86. Magnetic declination at a point

- (A) does not change with time (B) never remains constant
(C) varies with time (D) Both (B) and (C)

87. In the quadrantal bearing system, whole circle bearing of $204^\circ - 30'$ will be expressed as
- (A) $W\ 65^\circ - 30'S$ (B) $S\ 65^\circ - 30'W$
(C) $S\ 24^\circ - 30'W$ (D) $S\ 24^\circ - 30'E$
88. The Permanent benchmark established by the Survey of India Department with very high precision with reference to mean sea level is known as
- (A) G.T.S. Benchmarks (B) True Benchmark
(C) Arbitrary Benchmark (D) Temporary Benchmark
89. The trunnion axis or transverse axis is
- (A) The axis about which the telescope can be rotated in a vertical plane
(B) The axis about which the telescope can be rotated in a horizontal plane
(C) The vertical axis
(D) The horizontal axis
90. A degree of a curve is 1° . If the length of chord in a curve is 20m, then the curve will have a radius of
- (A) 1718.9m (B) 1146m
(C) 892m (D) 573m
91. During mass concreting, which cement is recommended to be used
- (A) Rapid hardening Portland Cement (B) Low Heat Cement
(C) Quick Setting Cement (D) Sulphate Resisting Cement



92. In case of effective width of flange of a T-beam given by the expression, I_o stands for

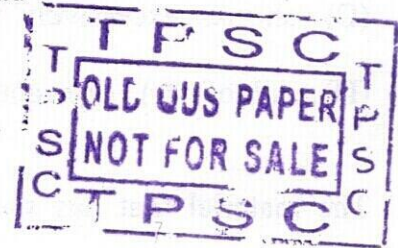
$$b_f = \frac{I_o}{6} + b_w + 6D_f$$

Then b_f is

- (A) An effective span of T beam
- (B) Distance between points of zero moments in beam
- (C) Distance between points of maximum bending moment
- (D) Clear span of T beam

93. Lacing in the built up steel column are designed to resist

- (A) Bending moment due to 2.5% of column load
- (B) Shear force due to 2.5% of column load
- (C) Axial force due to 2.5% of column load
- (D) Both (A) and (B)



94. The settling velocity of inorganic particles in a sedimentation tank of the water treatment plant is governed by

- (A) Darcy's Law
- (B) Stroke's Law
- (C) Dupit's Law
- (D) None of (A), (B) and (C)

95. The water meter which is installed in individual house connection, on municipal supply is

- (A) Velocity Meter
- (B) Inferential Meter
- (C) Displacement Meter
- (D) Speedometer

96. The maximum efficiency of BOD removal is obtained in
- (A) Oxidation ditch (B) Sedimentation pond
- (C) Aerated lagoon (D) Trickling filter
97. Waste water from different sources like bathrooms, kitchens and wash basins is called
- (A) Sewage (B) Garbage
- (C) Sullage (D) Discharge
98. Black cotton soil is unsuitable for foundation because it
- (A) undergoes volumetric changes with the change of atmospheric conditions
- (B) swells excessively when wet
- (C) shrinks excessively when dry
- (D) All of (A), (B), and (C)
99. The material that has same properties in all direction is
- (A) Homogenous (B) Isotropic
- (C) Elastic (D) Orthotropic
100. A bubble tube with divisions of 2 mm and a radius of 1m has the sensitivity of
- (A) $1/2000$ radians (B) $1/500$ radians
- (C) $1/50$ radians (D) $1/20$ radians.

