SSC - JEn 2014 Objective Paper (Evening Session)

1. The minimum percentage of steel in R.C.C.slab using mild steel reinforcement in given by: **[SSC-2014]**
(a) 0.35%　　　　　(b) 0.12%
(c) 0.15%　　　　　(d) 0.30%

2. To obtain very high strength concrete, it is necessary to use very fine grained **[SSC-2014]**
(a) Volcanic Scoria　　(b) Granite
(c) Magnetite　　　　(d) Barite

3. Which of the following type of lime is used for underwater constructions **[SSC-2014]**
(a) Fat lime　　　　(b) Quick lime
(c) Slaked lime　　　(d) Hydraulic lime

4. Which one of the following has least bearing capacity? **[SSC-2014]**
(a) Loose gravel　　(b) Hard rocks
(c) Soft rocks　　　(d) Compact gravel

5. Factor of safety is the ratio of: **[SSC-2014]**
(a) bearing stress and working stress
(b) yield stress and working stress
(c) tensile stress and working stress
(d) compressive stress and working stress

6. For lined canals, the freeboard measured from the : **[SSC-2014]**
(a) full supply level to the top of the lining
(b) full supply level to the top of the bank
(c) top of the bank to the top of the lining
(d) full supply level to the top of the dowel

7. The property of a material by which it gets permanent deformation under a load which is not recovered after removal of load is called **[SSC-2014]**
(a) elasticity　　　(b) brittleness
(c) ductility　　　　(d) plasticity

8. The concrete having a slump of 6.5 cm, is said to be **[SSC-2014]**
(a) plastic　　　　(b) dry
(c) earthmoist　　　(d) semi-plastic

9. Capillary rise is a phenomenon that is attributed to the following property of fluid: **[SSC-2014]**
(a) vapour pressure　　(b) viscosity
(c) density　　　　　　(d) surface tension

10. The value of C_v for sharp edged orifice generally **[SSC-2014]**
(a) 0.98　　　　(b) 0.95
(c) 0.96　　　　(d) 0.97

11. As a cheap alternative, the fineness of cement is tested by using **[SSC-2014]**
(a) IS 100μ sieve where at least 90% (by weight) should be retained
(b) IS 90μ sieve where at least 90% (by weight) should pass
(c) IS 90 μ sieve where at least 95% (by weight) should pass
(d) IS 100 μ sieve where at least 90% (by weight) should pass

12. Strain energy due to sudden axial load is given by: **[SSC-2014]**
σ : resultant stress
P : Axial load
Δ : detornator
∈ : strain
E : modulous of elasticity
(a) $\frac{1}{2}P\Delta$　　　　(b) $\sigma.\in$
(c) $P\Delta$　　　　　　(d) $\frac{\sigma^2}{2E}$

13. The maximum permissible stress for hand driven river in axial tension is : **[SSC-2014]**
(a) 250N/mm²　　(b) 80 N/mm²
(c) 90 N/mm²　　(d) 100 N/mm²

14. Measurement of pressure difference between two points is, generally done by using **[SSC-2014]**
(a) Venturimeter　　(b) Pitot tube
(c) Different manometer　(d) None of the above

15. Calcium chloride added in concrete acts as: **[SSC-2014]**
(a) retarder　　　　(b) accelerator
(c) air entraining agent　(d) plasticizer

16. The following document contains detailed description of all items of work excluding their quantities, along with the current rates : **[SSC-2014]**
(a) Analysis of rates
(b) Tender document
(c) Abstract estimate
(d) Schedule of rates

17. Specific gravity has a unit: **[SSC-2014]**
(a) g/cc
(b) kg/m^3
(c) N/m^3
(d) No unit-dimensionless

18. To construct a massive dam the type of cement used is: **[SSC-2014]**
(a) blast furnace slag cement
(b) low heat cement
(c) rapid hardening cement
(d) ordinary Portland cement

19. The size of fillet weld is indicated by: **[SSC-2014]**
(a) Size of the plate
(b) Side of the triangle of fillet
(c) Throat of the fillet
(d) Length of fillet weld

20. In limit state method of design, for bars in compression in values of bond stress shall be **[SSC-2014]**
(a) Decreased by 25%
(b) Increased by 20%
(c) Decreased by 20%
(d) Increased by 25%

21. The main gas liberated from an anaerobic sludge digestor is : **[SSC-2014]**
(a) NH_3
(b) CO
(c) CO_2
(d) CH_4

22. Spacing of stirrups in a rectangular beam is : **[SSC-2014]**
(a) increased at the ends
(b) kept constant throughout the length
(c) decreased towards the centre of the beam
(d) increased at the centre of the beam

23. The minimum percentage of longitudinal reinforcement in RCC column is : **[SSC-2014]**
(a) 12
(b) 0.6
(c) 0.8
(d) 1.0

24.

A   B   C

The beam shown in Fig. is : **[SSC-2014]**
(a) Free cantilever beam
(b) Single overhanging beam
(c) Doubel overhanging beam
(d) Proper cantilever beam

25. The slende mess ratio of a column is zero when its length
(a) Effective length is equal to Actual length **[SSC-2014]**
(b) is very large
(c) is equal to its radius of gyration
(d) is supported on all sides throughout its length

26. Most important constituents of cement are : **[SSC-2014]**
(a) C_3A and C_2S
(b) C_3S and C_3A
(c) C_3S and C_2S
(d) C_3A and C_4AF

27. Which of the following has leasst carbon content? **[SSC-2014]**
(a) Wrought Iron
(b) Cast Iron
(c) Mild steel
(d) Pid steel

28. When R is the radius of the curve (in meters), D is the degree of curve (in degrees) and length of the chord is 30 m, then the relation between R and D is: **[SSC-2014]**
(a) R = 5400/D
(b) R = 1520/D
(c) R = 1720/D
(d) R = 4500/D

29. The floor area includes the area of the balcony upon **[SSC-2014]**
(a) 25%
(b) 85%
(c) 75%
(d) 50%

30. The increase in the strength of concrete with time is : **[SSC-2014]**
(a) Linear
(b) Non-linear
(c) Asymptotic
(d) All of the above

31. Generally concrete cubes are tested measure concrete's **[SSC-2014]**
(a) Compressive strength
(b) Tensile strength
(c) Twisting strength
(d) None of the above

32. In a singly reinforced beam if the stress in concrete reaches its allowable limit earlier than the steel reaches its permissible limit, the beam section is called : **[SSC-2014]**
(a) critical section
(b) under reinforced section

(c) over feinforced section

(d) economic section

33. Which of the following is a dimensionless quantity?

[SSC-2014]

(a) Shear force   (b) Stress

(c) Strain   (d) Modulus of elasticity

34. Weight of one bag of cement is :   **[SSC-2014]**

(a) 70 kg   (b) 50 kg

(c) 60 kg   (d) 65 kg

35. The flow constant 'f' in Darcy Weisbach equation for head loss in piped flow has a unit of :   **[SSC-2014]**

(a) No unit-diversion less   (b) m

(c) m/sec   (d) Kg-m/sec

36. Steel corrodes in exposure of air and moisture and rust has: **[SSC-2014]**

(a) 2.5 times the volume of steel

(b) 0.5 times the volume of steel

(c) equal volume compared to amount of steel rustad

(d) twice the volume of steel

37. In the quadrantal bearing system, a whole circle bearing of 293°30' can be expressed as :   **[SSC-2014]**

(a) N 23°30' W   (b) W 23°30' N

(c) N 66° 30' W   (d) S 113° 30' N

38. Workability of concrete is directly proportional to

[SSC-2014]

(i) time of transit

(ii) wate cement ratio

(iii) gradign of aggregate

(iv) stength of aggregate

(v) aggragate cement ratio

(a) (iii), (iv), (v)   (b) (i), (ii), (iv)

(c) (ii), (iii), (v)   (d) (ii), (iii)

39. A 40 cm diameter circular timber column is 4 m long. The slenderness ratio of the column is :   **[SSC-2014]**

(a) $20\sqrt{2}$ (b) 10

(c) 20   (d) 40

40. The percentage of the fine aggregate of fineness modulus 2.6 to be combined with coarse aggregate of fineness modulus 6.8 of obtaining the aggregates of fineness modulus 5.4, is :   **[SSC-2014]**

(a) 60%   (b) 30%

(c) 40%   (d) 50%

41. Administrative head of public works department who is directly responsible to Government is :   **[SSC-2014]**

(a) Assistant Engineer

(b) Executive Engineer

(c) Superintending Engineer

(d) Chief Engineer

42. The load factor applied to wind and seismic loads in design of steel structures is :   **[SSC-2014]**

(a) 2.2   (b) 1.3

(c) 1.5   (d) 1.8

43. The minimum diameter of longitudinal reinforcement in RCC column should not be less than :   **[SSC-2014]**

(a) 16 mm   (b) 6 mm

(c) 8 mm   (d) 12 mm

44. Generally the ratio of different ingredients (Cement Sand and aggregate) in concrete mix of grade M20 **[SSC-2014]**

(a) 1 : 2 : 4   (b) 1 : 15 : 3

(c) 1 : 3 : 6   (d) 1 : 1 : 2

45. Fineness test of cement gives us an estimate of :

[SSC-2014]

(a) Workability of concrete   (b) heat of hydration

(c) rate of hydration   (d) durability of concrete

46. The type of surveying which requires least office work is (least calculation) :   **[SSC-2014]**

(a) Theodolite surveying

(b) Tacheometry

(c) Trignometrical levelling

(d) Plane table surveying

47. Admixture which cause early setting and hardening of concrete are called: **[SSC-2014]**

(a) Air entraining agents   (b) Workability admixture
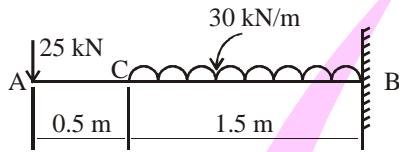
(c) Accelerators   (d) Retarders

48. Basalt stone is by nature :   **[SSC-2014]**

(a) meta morphic   (b) volcanic

(c) plutonic   (d) sedimentary

49. In open channels 9 maximum velocity occurs : **[SSC-2014]**

(a) just below the free surface

(b) at the surface

(c) near the channel bottom

(d) in the mid-depth of flow

50.

For the cantilever beam shown in Fig, the value of shear Force at fixed end is :   **[SSC-2014]**

(a) 100 kN   (b) 70 kN

(c) 80 kN   (d) 90 kN

51. In a simply supported beam of span, L subjected to Uniformly Distributed load (UDL) of intensity W kN/m over its entire length the maximum bending is given by the expression :   **[SSC-2014]**

(a) $\dfrac{WL^2}{8}$ (b) $\dfrac{WL}{2}$
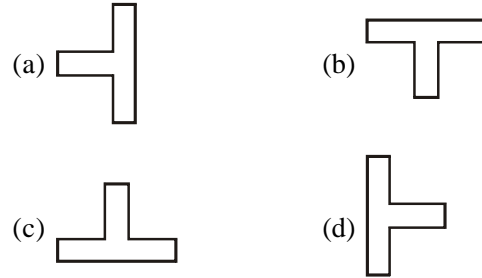
(c) $\dfrac{WL^2}{2}$ (d) WL

52. The relationship between void ratio 'e' and porosity 'n' is   **[SSC-2014]**

(a) $n = \dfrac{1+e}{1-e}$ (b) $e = n (1 + e)$

(c) $n = \dfrac{e}{1-e}$ (d) $n = \dfrac{1+n}{1-e}$

53. When 1 cm on a map represents 10 m on the ground, the representative fraction of the scale is :   **[SSC-2014]**

(a) $\dfrac{1}{10000}$ (b) $\dfrac{1}{10}$

(c) $\dfrac{1}{100}$ (d) $\dfrac{1}{1000}$

54. A simply supported beam of span 'L' is loaded with downward uniformly distributed load of intensity W/mp over iuts entire length. Which of the following orientation of T-beams is preferred to resist bending?   **[SSC-2014]**

55. The total energy line lies over the hydraulic gradient line by an amount equal to   **[SSC-2014]**

(a) sum of pressure, velocity and datum heads

(b) pressure head, $\dfrac{P}{\gamma}$

(c) velocity head, $\dfrac{v^2}{2g}$

(d) datum head, π

56. Diameter of rivet hole is made larger than the diameter of the river by   **[SSC-2014]**

(a) 0.5 mm   (b) 1.0 mm

(c) 3 mm   (d) 2.0 mm

57. A flyover seggregates traffic with respect to : **[SSC-2014]**

(a) direction   (b) grade

(c) speed   (d) class of vehicle

58. For producing electricity, following combination of machines will be required: **[SSC-2014]**
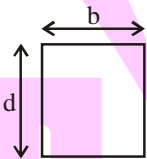
(a) Electric Motor + Pump

(b) Hydraulic Turbine + Gernerator

(c) Hydraulic Turbine + Electric Motor

(d) Generatore

59. Irrigation efficiency of an irrigation system is the ratio of   **[SSC-2014]**

(a) Water reaching the farm to water delivered from the source

(b) Crop yield to total amount of water used in a field

(c) Water actually stored in root zone water delivered to the farm

(d) Water actually utilised by growing crops to water delivered from the source.

60. The specific gravity of bitumen is **[SSC-2014]**

(a) 2.09   (b) 0.8

(c) 0.9   (d) 1.09

61. The ratio of normal stress to normal strain within elastic limits is called : **[SSC-2014]**

(a) Young's Modulus   (b) Shear Modulus

(c) Poisson's Ratio   (d) Bulk Modulus

62. Gravel and sand belongs to the following category of soils **[SSC-2014]**

(a) alluvial   (b) cohesive

(c) expansive   (d) marine

63. The shape of Bending moment Diagram in a beam subjected to only Uniformly Distributed Load (UDL) is : **[SSC-2014]**

(a) Constant   (b) Cubic parabola

(c) Parabola   (d) Triangular

64. To prevent sulphate attack in concrete, for preparing concrete mix, water pH must be within **[SSC-2014]**

(a) 7 – 10   (b) 4 – 6

(c) 5 – 7   (d) 6 – 9

65. For subcritical flow, the froude number is : **[SSC-2014]**

(a) Non equal to one   (b) Less than one

(c) Greater than one   (d) Equal to one

66. The permissible bending stress in working stress method of design of column base is considered equal to : **[SSC-2014]**

(a) 0.87 fy   (b) 0.6 fy

(c) 0.67 fy   (d) 0.75 fy

67. In single laced solumn construction, the thickness of the flat lacing bars shall not be less than : **[SSC-2014]**

(a) $\dfrac{1}{15}$ th of the width of the lacing bar

(b) $\dfrac{1}{30}$ th of the effective length of single lacing

(c) $\dfrac{1}{40}$ th of the effective length of single lacing

(d) $\dfrac{1}{10}$ th of the width of the lacing bar

68. The most accurate instrument for measuring horizontal and vertical angles is : **[SSC-2014]**

(a) Theodolite   (b) Dumpy level

(c) Compass   (d) Tape and chain

69. The quantity of wood for the shutters of doors and windows its calculate in: **[SSC-2014]**

(a) m^3 (b) lump-sum

(c) m   (d) m^2

70. The plane of a building is in the form of square with centreline dimensions of outer walls as 14.7 m × 14.7 m. If the thickness of the wall in superstructure is 0.30 m, then its plinth area is **[SSC-2014]**

(a) 234 m^2 (b) 150 m^2

(c) 216 m^2 (d) 225 m^2

71. The counter lines can cross one another on map only in the case of : **[SSC-2014]**

(a) an overhanging cliff   (b) a vertical cliff

(c) a valley   (d) a ridge

72. The purpose of stiffeners in a plate girder is to : **[SSC-2014]**

(a) prevent buckling of web plate

(b) reduce the shear stress

(c) take care of bearing stress

(d) increase the moment carrying capacity of the girder

73. The value of property during its useful life based on purchase value and depreciations etc. **[SSC-2014]**

(a) Ideal fluid   (b) Real fluid

(c) Newtonian fluid   (d) Non Newtonian fluid

74. The value of property during its useful life based on purchase value and depreciations etc. is known as : **[SSC-2014]**

(a) Junk value   (b) Salvage value

(c) Scrap value   (d) Book value

75. The relationship between atmosphere pressure (P_{atm}), gage pressure (P_{gage}) and absolute pressure (P_{abs}) is given by : **[SSC-2014]**

(a) $P_{atm} = P_{abs} - P_{gage}$ (b) $P_{abs} = P_{atm} + P_{gage}$

(c) $P_{abs} = P_{atm} - P_{gage}$ (d) $P_{atm} = P_{abs} + P_{gage}$

76. In a structure, cables and wires are used generally as : [SSC-2014]

(a) to resist shear stress (b) tension member

(c) compression member (d) flexural member

77. When the magnetic bearing of the sun at noon is 185°20', the magnetic declination will be [SSC-2014]

(a) 5°20' south (b) 5°20' east

(c) 5°20' west (d) 5°20' north

78. A RCC columnis regarded as long column if the ratio of its unsupported length between end restraints to least lateral dimension is more than: [SSC-2014]

(a) 25 (b) 150

(c) 125 (d) 60

79. The height of instrument is equal to : [SSC-2014]

(a) Reduced level of bench mark – back sight

(b) Reduced level of bench mark + back sight

(c) Reduced level of bench mark + fore sight

(d) Reduced level of bench mark + Intermediate sight

80. Thickness of Plastering is usually [SSC-2014]

(a) 40 mm (b) 6 mm

(c) 12 mm (d) 25 mm

81. Water absorption of Class I brick after 24 hours of immersion in water should not exceed_____of self weight [SSC-2014]

(a) 25% (b) 18%

(c) 20% (d) 22%

82. For a given aggregate ratio increasing the water cement ratio: [SSC-2014]

(a) increases the strength

(b) decrease shrinkage

(c) increase shrinkage

(d) does not cause any change in shrinkage

83. Granite is a rock that is by nature [SSC-2014]

(a) metamorphic (b) volcanic

(c) plutonic (d) sedimentary

84. When the plastic limit of a soil is greater than the liquid limit, then the plasticity index is reported as : [SSC-2014]

(a) 1 (b) Negative

(c) Zero (d) Non-Plastic (NP)

85. Compression member always tend to buckle in the direction of the : [SSC-2014]

(a) Least radius of gyration

(b) Axis of load

(c) Perpendicular to the axis of load

(d) Minimum cross section

86. As per IS 456-2000. In the absence of test data, the approximate value of the total strain for design may be taken as : [SSC-2014]

(a) 0.004 (b) 0.001

(c) 0.002 (d) 0.003

87. Separation of water or water sand cement from a freshly mixed concrete is known as : [SSC-2014]

(a) Segregation (b) Flooding

(c) Bleeding (d) Creeping

88.

Moment of Inertia of rectangular section shown in Fig. about its base is : [SSC-2014]

(a) $\dfrac{bd^2}{3}$ (b) $\dfrac{bd^3}{12}$

(c) $\dfrac{bd^3}{3}$ (d) $\dfrac{bd^2}{12}$

89. The correct prismoidal formula for volume calculation is : [SSC-2014]

(a) $\dfrac{D}{6}$ [fitst section area + last section areas + 2Σ even numbered section area + 4 Σ odd numbered section area

(b) D [first section area + last section area + Σ even numbered section area + 2 Σ odd numbered section areas]

(c) $\dfrac{D}{3}$ [first section area + last section area + 4Σ even numbered section area + 2Σ odd numbered section area

(d) $\dfrac{D}{3}$ [first section area + last section area + 2Σ even numbered section area + 4Σ odd numbered section areas]

90. Zinc Oxide is a pigment having colour_____ **[SSC-2014]**

(a) blue   (b) white

(c) yellow   (d) red

91. The correction for sag is : **[SSC-2014]**

(a) Some times additive and sometimes subtractive

(b) Always additive

(c) Always subtractive

(d) Always zero

92. The permanent deformation of concrete with time under steady load is called **[SSC-2014]**

(a) visco-elasticity   (b) vicidity

(c) creep   (d) relaxation

93. Intersection method in plane table surveying is most suitable for : **[SSC-2014]**

(a) Plains   (b) Forests

(c) Urban areas   (d) Hilly areas

94. An aggregate is known as cyclopean aggregate if its size is more than : **[SSC-2014]**

(a) 75 mm   (b) 4.75 mm

(c) 30 mm   (d) 60 mm

95. The centrifugal force on a car moving on a horizontal circular curve is proportional to: **[SSC-2014]**

(a) $\dfrac{Wv^2}{(gR)}$ (b) $\dfrac{Wv}{(gR)}$

(c) $\dfrac{Wv^2}{(gR^2)}$ (d) $\dfrac{Wv}{(gR^2)}$

96. Using straight line method annual depreciation D is equal to **[SSC-2014]**

(a) $\dfrac{\text{Life in year} - \text{Scrap value}}{\text{Original cost}}$

(b) $\dfrac{\text{Scrap value} - \text{life in year}}{\text{Original cost}}$

(c) $\dfrac{\text{Original cost} - \text{life in year}}{\text{scrap value}}$

(d) $\dfrac{\text{Original cost} - \text{scrap value}}{\text{life in year}}$

97. If R and T are rise and tread of a stair spanning horizontally and steps are supported by wall on one side and by stringer beam on the otherside, the steps are designed as beam of width : **[SSC-2014]**

(a) $\dfrac{(R+T)}{2}$ (b) R + T

(c) T – R   (d) $\sqrt{R^2 + T^2}$

98. Segregation in the concrete occurs when : **[SSC-2014]**

(a) Cement gets separated from mixture due to excees water

(b) Cement fails to give adequate binding quality

(c) Water is driven out of concrete at the faster rate

(d) Coarse aggregate tries to separate out from the finer material

99. Unit of second moment of area is : **[SSC-2014]**

(a) mm   (b) mm^4

(c) mm^3 (d) mm^2

100. BOD test is conducted at a temperature of : **[SSC-2014]**

(a) Ambient temperature   (b) 15°C

(c) 20°C   (d) 27°C

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

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