भारतीय सांकेतिक विज्ञान संस्थ हैदराबाद्
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Kandi, Sangareddy, IITH-502284; Tel: 040-23016074

Application Number of the Candidate

Name of the Post: JE Civil   Pay Level:

Date & Time of the Exam: 7th Dec 2023   Duration: 01 hr. 30 min

Scheme of the Exam:

Topic	Number of Question	Marks
General English (Communication Skills)	10	10
Work Related Topics	90	90
Total	**100**	**100**

Instructions to fill the responses in the OMR answer sheet

1. Candidate must write his/her **application number** in the designated box on the top of OMR answer sheet
2. Candidate must write the Question paper ID in the designated box on the top of OMR answer sheet
3. Candidate must sign in the box provided in the OMR answer sheet
4. Each answer sheet must be signed by the invigilator in the space printed in the OMR answer sheet
5. Only one response to be selected & marked. In case more than one response is marked for a single question or no response is marked for a question, no marks will be awarded for that question.
6. Partially filled circles shall not be considered as responses
7. Erasing or changing of answer is not allowed.
8. No negative marking
9. Candidate must use Blue/Black ball point pen to fill his/her responses
10. Rough work should not be done on the OMR answer sheet.
11. Candidate can use the designated page(s) of the question booklet for the purpose of rough work
12. Question booklet needs to be returned along with the OMR answer sheet.

Section 1 General English (Communication Skills)
Attempt all questions.
All questions carry 1 mark each unless stated otherwise.

1. Choose the word closest in meaning to the underlined section of the sentence:
   There was a <u>shadow</u> across his face upon hearing the sad news.
   a. Complexion
   b. Look of gloom
   c. Shade
   d. Gravity

2. Choose the word closest in meaning to the underlined section of the sentence:
   There was a <u>persistent</u> drizzle during our week-long holiday in Darjeeling.
   a. Consistent
   b. Incessant
   c. Continuous
   d. Intermittent

3. Choose the word most nearly opposite in meaning to the underlined section of the sentence:
   Many people <u>prefer</u> a vegetarian diet.
   a. Abhor
   b. Desire
   c. Taste
   d. Like

4. Choose the word most nearly opposite in meaning to the underlined section of the sentence:
   It was an <u>arduous</u> task.
   a. Difficult
   b. Problematic
   c. Effortless
   d. Fitting

5. Choose the correct meaning of the underlined section of the sentence:
   He <u>stood to his ground</u> with firmness.
   a. Dug up the ground
   b. Built a house
   c. Maintained his position
   d. Built a wall

6. Choose the correct meaning of the underlined section of the sentence:
   I did not notice in him anything <u>out of the way</u>.
   - a. Familiar.
   - b. Strange.
   - c. Attractive.
   - d. Charming.

7. Choose the best word to complete the given sentence:
   The thief disappeared in a _____
   - a. Day
   - b. Run
   - c. Trice
   - d. Hurry

8. Choose the best word to complete the given sentence:
   The odds against us were indeed _____
   - a. Light
   - b. Colorful
   - c. Cheerful
   - d. Heavy

9. Choose the correct preposition to fill in the blank in the sentence.
   The celebrated grammarian Patanjali was a contemporary _____ Pushyamitra Sunga
   - a. To
   - b. With
   - c. Of
   - d. In

10. Choose the correct preposition to fill in the blank in the sentence.
    The income derived _____ the ownership of land is commonly called rent.
    - a. With
    - b. For
    - c. From
    - d. Under

Section 2 Civil Engineering
Attempt all questions.
All questions carry 1 mark each unless stated otherwise.

11. The fines fraction of soil to be used for highway near Hapur was subjected to hydrometer analysis be placing 25 g of dry soil in 100 ml solution of water ($\mu=0.01$ poise at 20^0c) the specific gravity is 2.65. Estimate the maximum diameter D of particle found at depth of 5 cm after sedimentation of 4 hours has elapsed,
    a. 0.062 mm
    b. 0.05 mm
    c. 0.08 mm
    d. 0.09 mm

12. If the material of the base of Casagrande liquid limit device on which the cup containing soil paste drops is softer than the standard hard rubber, Then
    a. Liquid limit of soil always increases
    b. Liquid limit is unaffected
    c. Liquid limit of soil always decreases
    d. Liquid limit can increase or decrease

13. The depth of the groove cut by Casagrande tool for determining the liquid limit is
    a. 0.6 mm
    b. 6 mm
    c. 12 mm
    d. 25 mm

14. If The compaction energy used for standard proctor test is _____
    a. 300 kJ/m^3
    b. 595 kJ/m^3
    c. 1000 kJ/m^3
    d. 6065 kJ/m^3

15. Which of the following factors affects compacted density?
    a. Water content and type of compaction
    b. Degree of saturation
    c. None of the mentioned
    d. All of the mentioned

16. Two soil specimens with identical geometric dimensions were subjected to falling head permeability tests in the laboratory under identical conditions. The fall of water head was

measured after an identical time interval. The ratio of initial to final water heads for the test involving the first specimen was 1.25. If the coefficient of permeability of the second specimen is 5- times that of the first, the ratio of initial to final water heads in the test involving the second specimen is

    a. 3.05
    b. 3.80
    c. 4.00
    d. 6.25

17. Sieve analysis of a soil shows that C_u, D_{30} & D_{60} values are 4, 0.3mm & 0.8mm respectively. The effective size of the soil is

    a. 0.1mm
    b. 0.2mm
    c. 0.3mm
    d. 0.4mm

18. Sieve analysis on a dry soil sample of mass 1kg showed 980g and 270g of soil passing 4.75mm and 0.075mm sieve respectively. The liquid and plastic limit are 40% and 18%. The soil is classified as

    a. SM
    b. MI
    c. CI
    d. SC

19. What is the Net Ultimate Bearing Capacity of a foundation?

    a. Ultimate Bearing Capacity/Factor of Safety
    b. (Ultimate Bearing Capacity/Factor of Safety) – Overburden Pressure
    c. Ultimate Bearing Capacity – Overburden Pressure
    d. Ultimate Bearing Capacity – Factor of Safety

20. The effect of cohesion on a soil is to:

    a. Reduce both active and passive earth pressure intensities.
    b. Increase both active and passive earth pressure intensities.
    c. Increase active earth pressure intensity but to decrease passive earth pressure intensity
    d. None of the above

21. The major principal stress in an element of cohesionless soil within the backfill of a retaining wall is:

    a. horizontal if the soil is in an active state of plastic equilibrium
    b. horizontal if the soil is in a passive state of plastic equilibrium
    c. Inclined at 45° to the vertical plane
    d. None of the above

22. If the load-carrying capacity of a pile in sand is denoted as Q and that of a group of N identical piles as by Qg, then the ratio of Qg/Q will:
    a. be equal to 1 irrespective of width of the group
    b. be equal to N irrespective of width of the group
    c. decrease as the width of the group increases
    d. increase as the width of the group increases

23. The ultimate load-carrying capacity of a pile socketed in a bedrock depends on:
    (i)   Skin friction resistance
    (ii) End bearing resistance in rock
    (iii) Length of the pile embedment
Choose the correct answer:
    a. (i) and (ii)
    b. (ii) and (iii)
    c. (i) and (iii)
    d. (iii)

24. A soil has a dry unit weight of 17 kN/m^3 and a water content of 20%. What will be its bulk unit weight?
    a. 19.3 kN/m^3
    b. 20.4 kN/m^3
    c. 22.6 kN/m^3
    d. 24.4 kN/m^3

25. What will be the porosity of a soil sample with a void ratio of 0.35?
    a. 19.5%
    b. 25.9%
    c. 30.65%
    d. 40.6%

26. Which of the following are responsible for the formation of photochemical smog?
    1. Light Intensity
    2. Ratio of hydrocarbons to nitric oxide
    3. CO_2
    4. Hydrocarbon reactivity
    5. SO_2
Choose the correct answer
    a. 1, 2, 3, 4 and 5
    b. 1, 2 and 4 only
    c. 2, 3 and 4
    d. 2, 3 and 5 only

27. An effluent at a flow rate of 2060 m³/d from a sewage treatment plant is to be disinfected. The laboratory data of disinfection studies with a chlorine dose of 15mg/L yields the model:

$N_t = N_o e^{-0.145t}$; where N_t = no. of microorganisms surviving at time t (in min) and N_o = no. of microorganism present initially (t=0). Find the volume of disinfection unit (in m³) required to achieve a 98% kill of microorganisms.

     a. 38.59
     b. 30.97
     c. 10.50
     d. 24

28. A hard water of 300 mg/L is passed through an ion-exchange filter to filter for an apartment which has a demand of 1000 l/day. Tap water in the home is found to be 90 mg/L. what is the amount of water that is surpassed by the filter to get that final hardness water?

     a. 900 L/day
     b. 300 L/day
     c. 400 L/day
     d. 350 L/day

29. Select correct general order of Ground water treatment

     a. plain sedimentation, coagulation, filtration, disinfection & distribution
     b. plain sedimentation, aeration, coagulation, filtration, disinfection & distribution
     c. Aeration, softening, filtration, disinfection & distribution
     d. Aeration, softening, filtration, coagulation, disinfection & distribution

30. A 50 cm³ of water is passed through a filter paper whose initial weight is 1.234 gm. After oven drying its final weight is measured to be 1.246 gm. What is the value of suspended solids in that water sample?

     a. 120 mg/L
     b. 200mg/L
     c. 240 mg/L
     d. 300 mg/L

31. Total Kjeldahl nitrogen is combination of

i) Ammonia nitrogen
ii) Nitrites
iii) Nitrates
iv) organic nitrogen

Choose the correct answer

     a. i & ii
     b. i & iv

c. ii , iii & iv
d. i only

32. Which is a secondary air pollutant?
    a. Photochemical smog
    b. Sulphur dioxide
    c. Nitrogen dioxide
    d. Dust particles

33. In large thermal power stations very fine particulates present in flue gas are removed by
    a. Wet scrubber
    b. bag filter
    c. electrostatic precipitators
    d. dust catcher

34. The microbial quality of treated piped water supplies is monitored by
    a. Microscopic examination
    b. Plate count of heterotrophic bacteria
    c. Coliform MPN test
    d. Identification of all pathogens

35. The 5-day BOD of a wastewater sample is obtained as 190 mg/l (with k = 0.01 h-1). The ultimate oxygen demand (mg/l) of the sample will be

    a. 3800
    b. 475
    c. 271
    d. 190

36. What type of settling you will see primarily in a grit chamber?

    a. Type I
    b. Type II
    c. Type III
    d. Type IV

37. A sample of mixed solid waste was analyzed in laboratory, and it was observed to contain 21% moisture and 5% ash, with a total energy content of 14740 KJ/kg. What is the energy content on an ash-free dry basis.

    a. 19919 KJ/kg
    b. 18658 KJ/kg
    c. 17215 KJ/kg
    d. None of the above

38. A water sample contains 60 mg/L Ca^{2+}, 30 mg/L Mg^{2+}, and 400 mg/L of HCO_3^-, calculate the carbonate hardness of the sample.

    a. 90 mg/L
    b. 490 mg/L
    c. 400 mg/L
    d. 273 mg/L

39. Wastewater having an organic concentration of 54 mg/L is flowing at a steady rate of 0.8 m^3/d through a tank of dimensions 2 m * 4 m * 2 m. If the contents of the tank are well mixed and the decay constant is 0.1 day^{-1}, calculate the outlet concentration.

    a. 53.46 mg/L
    b. 0.54 mg/L
    c. 54 mg/L
    d. None of the above

40. Blue baby disease may be caused in infants due to water supplies containing higher concentrations of _____

    a. Nitrates
    b. Fluride
    c. Polyaromatic hydrocarbon(s)
    d. Lead

41. The design speed for expressways on rolling terrain is_____
    a. 80 km/h
    b. 100 km/h
    c. 60 km/h
    d. 120 km/h

42. The ideal form of curve for the summit curve is _____
    a. 2^0 Parabola
    b. 3^0 Parabola
    c. Spiral
    d. None of these

43. Bitumen of grade 80/100 means penetration value is_____
    a. 8 to 10 mm
    b. 8 to 10 cm
    c. 8 to 10m
    d. None of these

44. Penetration test on bitumen is used for determining its_____
    a. Ductility
    b. Viscosity
    c. Grade
    d. Temperature susceptibility

45. Which of the following represents hardest grade of bitumen?
    a. 30/40
    b. 60/70
    c. 80/100
    d. 100/120

46. The ductility value of bitumen for suitability in road construction should not be less than_____

    a. 50 cm
    b. 60 cm   .
    c. 40 cm
    d. 100 cm

47. In CBR test the value of CBR is calculated at _____ penetration values

    a. 2.0 and 5.0 mm
    b. 1.5 and 2.5 mm
    c. 2.5 and 7.0 mm
    d. 2.5 and 5.0 mm

48. The toughness of road aggregates is measured using _____ test

    a. Soundness test
    b. Abrasion Test
    c. Impact test
    d. Crushing test

49. The time interval between the end of a green indication for one phase and the beginning of green for the next phase is called as_____

    a. Green time
    b. Intergreen
    c. Offset
    d. all red

50. The difference between the starts of green time at the successive upstream and downstream signal is called as_____

    a. Green time
    b. Intergreen
    c. Offset
    d. all red

51. The distance between successive vehicles moving in the same line measured from the head at any instance is called as

    a. Space headway
    b. time headway
    c. headway
    d. headway stream way

52. As IRC what will be the size of the speed limit sign board for an expressway with posted limit of 120 km/h.

    a. 900 mm
    b. 1000 mm
    c. 1200 cm
    d. 1.2 m

53. A road sign indicating NO Parking is

    a. Warning sign
    b. Cautionary sign
    c. Mandatory sign
    d. Informatory sign

54. The desirable length of overtaking zone is_____

    a. 3 x OSD
    b. 5xOSD
    c. 2xISD
    d. 5Xisd

55. If the stopping distance is 90 m, then the minimum SSD for two lane, two way traffic is _____

    a. 90 m
    b. 180 m

c. 45 m

d. 90 km

56. Which of these materials do NOT exhibit isotropic behaviour?

  a. Concrete

  b. Steel

  c. Reinforced concrete

  d. Clay bricks

57. Which of the following is NOT true about Mohr's circle for representing stress state?

  a. Mohr's circle's centre has to be on the normal stress axis.

  b. Mohr's circle has to be symmetric about the shear stress axis.

  c. Mohr's circle has to be symmetric about the normal stress axis.

  d. Mohr's circle can be used to find out the maximum shear stress value.

58. What is the approximate value of Poisson's ratio of structural steel in plastic range?

  a. 0.5

  b. 0.3

  c. 0.7

  d. 0.1

59. What is the static indeterminacy of this plane frame structure if axial deformations are NOT ignored?

Hing
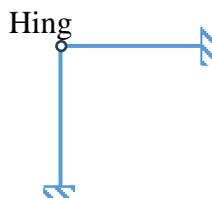
  a. 0

  b. 1

  c. 2

  d. 3

60. What is the kinematic indeterminacy, i.e., degrees of freedom, of this plane frame structure if axial deformations ARE ignored?

Hing
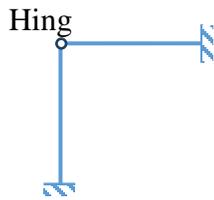
a. 0
b. 1
c. 2
d. 3

61. What is the value of bending moment at the support and at the mid span in the following cantilever beam?
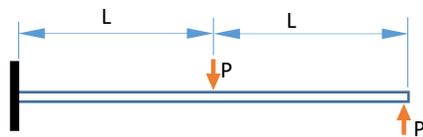
a. P.L and P.L, respectively
b. 2P.L and P.L, respectively
c. P.L and 0, respectively
d. P.L and -P.L, respectively
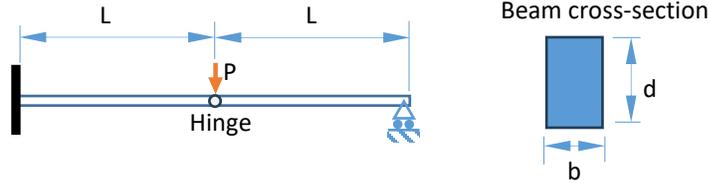
62. What is the maximum flexural stress in this beam?
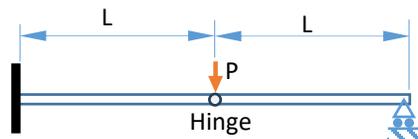
Beam cross-section
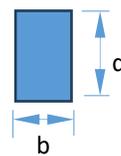
a. $PL/(bd^3)$
b. $3\,PL/(bd)$
c. $12\,PL/(bd^3)$
d. $6\,PL/(bd^2)$

63. What is the stiffness of this beam?

Beam cross-section

a. P/bd
b. 1.5 P/(bd)
c. 2 P/bd
d. 3 P/bd

64. How much force (P)is required in this beam to create a unit displacement at the free end? P is acting at 30° from horizontal. Ignore axial and shear deformations. The member has an elastic modulus of E.


Beam cross-section
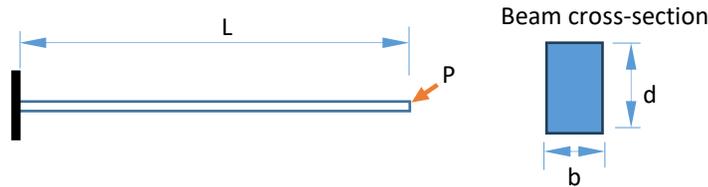
a. $Ebd^3/(12L^3)$
b. $Ebd^2/(12L^2)$
c. $Ebd^4/(12L^4)$
d. $Ebd^3/(6L^3)$

65. What is the difference between rotations at points A and B in the following beam subjected to an external moment 'M' at midspan? 'EI' is the flexural rigidity of the beam.
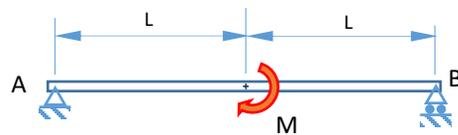
a. 0
b. ML/EI
c. 2ML/EI
d. 3 ML/EI

66. What is the ratio between the flexural rigidities of the Section 2 and Section 1 shown below? Section 1 is made of wood and section 2 is made of wood nailed to two plates of steel as shown. Elastic modulus of wood is 50 GPA and that of steel is 200 GPa.
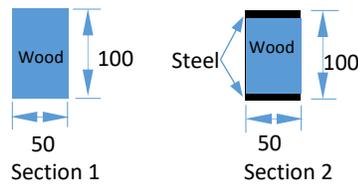
- All dimensions are in mm.
- Each steel plate is 10 mm thick.

a. 1.0
b. 1.490
c. 2.464
d. 8.342

67. Two prismatic beams having the same flexural rigidity of $1000 \ kN - m^2$ are shown in the following figures. Relation between deflection of first beam (δ_1) and deflection of second beam (δ_2) at mid span is:
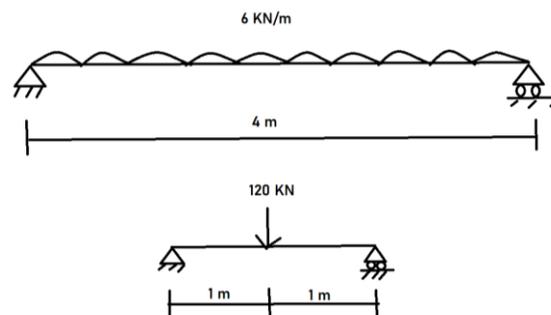
a. $\delta_1 = \delta_2$
b. $\delta_1 < \delta_2$
c. $\delta_1 > \delta_2$
d. Cannot be detemined from the information provided

68. Calculate the maximum force demand per unit length in the following weld group when subjected to a moment demand of 1 kN-m as shown.
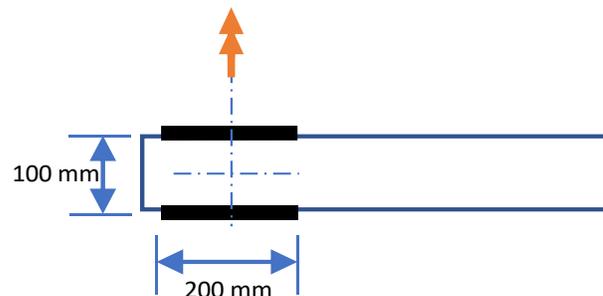
a. 150 N/mm

b. 47.9 N/mm

c. 75 N/mm

d. 95.8 N/mm

69. The lateral torsional buckling need not be considered when _____.
    a. the beam is subjected to non-uniform moment
    b. the beam is restrained against warping torsion
    c. the beam is bending about the major axis
    d. the beam is made of a tubular section

70. What is the elastic buckling strength of a column? The column (i) has length L. (ii) is pin connected at both ends. (ii) is restrained against lateral movement in minor axis at mid height. (iii) has moments of inertia I_{minor} and I_{major} about the minor and major axis, respectively.

    a. Greater of $4\,\pi^2 EI_{minor}/L^2$ and $\pi^2 EI_{major}/L^2$
    b. Greater of $\pi^2 EI_{minor}/L^2$ and $4\pi^2 EI_{major}/L^2$
    c. Smaller of $4\,\pi^2 EI_{minor}/L^2$ and $\pi^2 EI_{major}/L^2$
    d. Smaller of $\pi^2 EI_{minor}/L^2$ and $4\pi^2 EI_{major}/L^2$

71. Characteristic load is that value of load which has a --------- percentage probability of not being exceeded during the lifetime of the structure.
    a. 90%
    b. 10%
    c. 5%
    d. 95%

72. Partial safety factor for steel and concrete in the limit state design method
    a. 1.15, 1.2
    b. 1.25, 2.5
    c. 1.15, 1.5
    d. 1.2, 1.5

73. Providing reinforcement at-------------- location improves the flexural capacity of the RC beam
    a. bottom face of the beam
    b. location where tensile stresses develop
    c. top face of the beam
    d. location where compressive stresses develop

74. Design philosophy adopted by Indian code (IS 456:2000) for the design of reinforced concrete structures
   a. ultimate load method
    b. limit state method
    c. working stress method

d. Reliability-based approach

75. What is Characteristic strength?
        a. mean strength+1.65*standard deviation
        b. mean strength+1.6*standard deviation
        c. mean strength-1.6*standard deviation
        d. mean strength-1.65*standard deviation

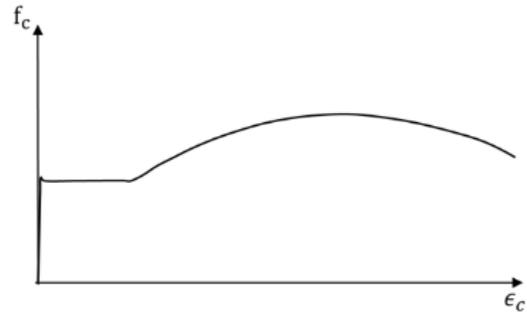76. Choose the normal distribution curve from the figure below that indicates better concrete quality control.
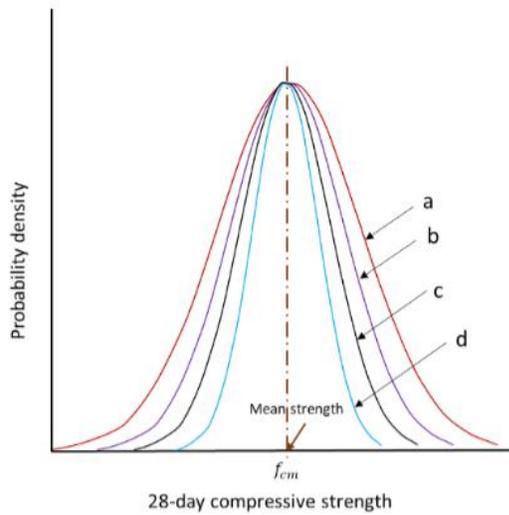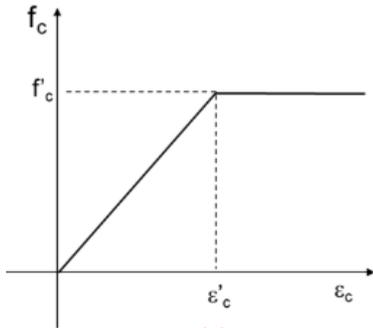

        a. b
        b. d
        c. a
        d. c

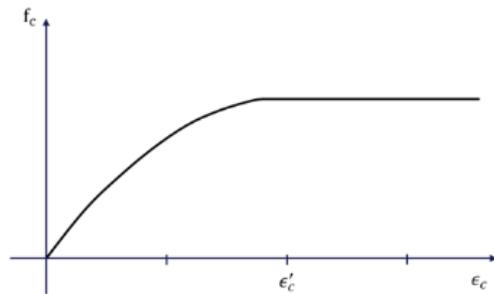77. What is the shape of the design stress-strain curve for concrete under compression?
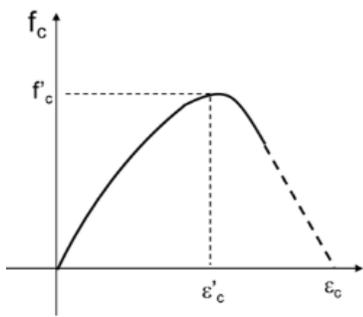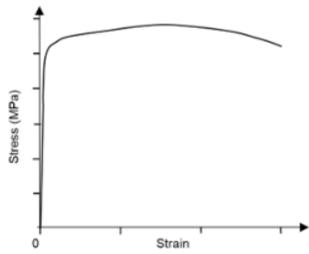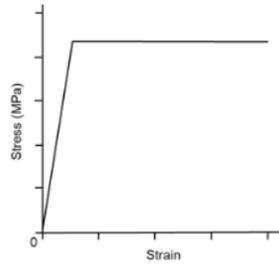

(a)

(b)

(c)

(d)

a. c
b. a
c. d
d. b

78. The compressive strength of concrete cube is approximately -------- times that of cylinder?

a. 0.8
b. 1.5
c. 1.25
d. 1

79. Design stress-strain curve for HYSD bars as per IS 456:2000?

(a)

(b)
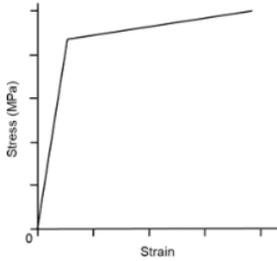
(c)
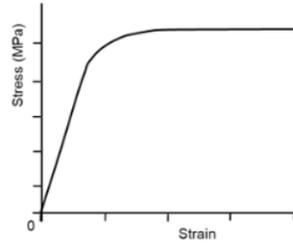
(d)

    a. c
    b. a
    c. d
    d. b

80. Arrange grades of steel based on their ductility in ascending order?

    i) Fe 250

    ii) Fe 500

    iii) Fe 415

        a. i, iii, ii
        b. i, ii, iii
        c. iii, ii, i
        d. ii, iii, i

81. The elastic deflection curve of the beam is represented by

    a. Linear first-order differential equation
    b. Linear second-order differential equation
    c. Non-linear first-order differential equation
    d. Non-linear second-order differential equation

82. The assumption in elastic-beam theory "Plane section normal to the axis of beam remain plane after bending" is meant for,

    a. Stress is uniform throughout the depth of the beam
    b. Strain is uniform throughout the depth of the beam
    c. Stress is proportional to the distance from the neutral axis
    d. Strain is proportional to the distance from the neutral axis

83. Which of the following statements are true concerning the balanced failure mode of the section under flexure?

    a. Both concrete and steel reach the yield strain
    b. Both concrete and steel reach the ultimate strain values
    c. The concrete reaches the strain corresponding to the peak compressive stress and the steel reaches the yield strain
    d. Concrete reaches the ultimate strain and steel reaches the yield strain simultaneously

84. What is the flexural tensile strength of the concrete having cylinder compressive strength

50 MPa (As per IS 456:2000)?

    a. 9.375 MPa
    b. 4 MPa
    c. 5.53 MPa
    d. 3.95 MPa

85. What is the modulus of elasticity of M40 grade concrete as per IS 456:2000?

    a. 31622 MPa
    b. 27386 MPa
    c. 31622 MPa
    d. 35355 MPa

86. A water distribution pipeline has a diameter of 85 cm and carries water at a pressure of 2,500 kPa. If the thickness of the pipe wall is 12 mm, the allowable stress that the pipe can withstand is:

    a. 60 MPa
    b. 80 MPa
    c. 90 MPa
    d. 120 MPa

87. Power required to pump water at a rate of 130 L/s over 120 m pipeline having a hydraulic gradient of 0.03 is given by:

    a. 1.25 kW
    b. 2.3 kW
    c. 4.6 kW
    d. 5.00 kW

88. The dimensions of Manning's roughness coefficient (n) are:

    a. Dimension less
    b. L^3T^{-1}
    c. $L^{-1}T^3$
    d. $L^{-1/3}T$

89. The alternate depths in a 4.0 m wide rectangular channel are 3.86 m, and 1.0 m. The discharge in the channel in m^3/s is

    a. 31 m^3/s
    b. 15 m^3/s
    c. 18 m^3/s
    d. Insufficient data

90. Which of the gradually varied flow (GVF) profiles do not exist?

    a. C-2, A-1, H-1
    b. C-1, A-2, H-2
    c. C-1, A-1, H-2
    d. C-2, A-2, H-2

91. Identify the relation that holds for a linear reservoir:

    a. Volume varies linearly with elevation
    b. Storage varies linearly with outflow rate
    c. Storage varies linearly with inflow rate
    d. Storage remains same for all inflow / outflow rates

92. The area bounded between isohyets of 12 cm and 14 cm is 35 km^2 and adjacent isohyets of 14 cm and 16 cm is 28 km^2. The mean precipitation for the entire area is:

    a. 13.5 cm
    b. 14 cm
    c. 13.88 cm
    d. 14.16 cm

93. Water year in India starts from the first day of

    a. January
    b. April
    c. June
    d. September

94. Direct runoff is composed of

    a. Overland flow + Channel precipitation
    b. Overland flow + Infiltration + Evaporation
    c. Overland flow + Channel precipitation + Prompt interflow
    d. Overland flow + Channel precipitation + Prompt interflow + Delayed interflow

95. Flow duration curve is the graphical representation of:

    a. Percentage of time (X) vs discharge (Y)
    b. Accumulated time (X) vs discharge (Y)
    c. Time (X) vs Percentage of discharge (Y)
    d. Time (X) vs Accumulated discharge (Y)

96. A unit hydrograph has:

    a. one unit of base time
    b. one unit of peak discharge
    c. one unit of catchment area
    d. one unit of direct runoff

97. The transmissivity of a confined aquifer having a hydraulic conductivity of 0.05 cm/s and thickness of 20 m is:

    a. $0.01 \, m^2/s$
    b. $0.001 \, m^2/s$
    c. $0.1 \, m^2/s$
    d. $1.0 \, m^2/s$

98. Rice crop requires about 10 cm depth of water at an average interval of about 10 days, and crop period for rice is 120 days. Delta for rice crop is:

    a. 1.0 m
    b. 1.2 m
    c. 10 m
    d. 12 m

99. A fully modular canal outlet has

    a. Sensitivity =1, Flexibility =1
    b. Sensitivity =1, Flexibility =0
    c. Sensitivity =0, Flexibility =1
    d. Sensitivity =0, Flexibility =0

100. The canal that frequently encounter with cross-drainage works is:

    a. Watershed canal
    b. Contour canal
    c. Side slope canal
    d. Ridge canal

Answer key to NF15_JE Civil exam

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