

# **ENGINEERING ACADEMY DEHRADUN**

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**MOB: 08449597123, 09411340612**

**PREP BY: SUNNY SINGH**

**THDCIL  
JUNIOR ENGINEER(CIVIL)  
SAMPLE PAPER-II**

1. Pick up the correct statement from the following
  - a) The metamorphic rocks generally possess foliated structure.
  - b) The sedimentary rocks are distinctly stratified
  - c) Both (a) and (b) are correct
  - d) Neither (a) nor (b) correct.
2. The smith's test of stones is performed to find out
  - a) The presence of soluble matter
  - b) The tensile strength
  - c) The presence of lime
  - d) None of there
3. Which one of the following sequence of steps is correct for preparing the clay for making bricks?
  - a) Weathering – Blending – Tempering
  - b) Blending– Tempering– Weathering
  - c) Tempering –Weathering– Blending
  - d) None of these is correct
4. Construction bricks are classified into
  - a) Four categories
  - b) Five categories
  - c) Three categories
  - d) Two categories
5. Fat lime slakes vigorously and its volume increases about
  - a)  $1^{1/2}$  times the volume of quick lime
  - b) 2 times the volume of quick lime
  - c) 3 times the volume of quick lime
  - d) None of these
6. The water cement ratio for the cement sand mortar (1:3) is kept
  - a) 0.25
  - b) 0.30
  - c) 0.35
  - d) 0.40
7. The distance between the two readings of the Lechattier apparatus should not exceed
  - a) 4 mm
  - b) 5 mm
  - c) 7.5 mm
  - d) 10 mm
8. Quick setting cement is usefully used to lay concrete under
  - a) static water
  - b) running water
  - c) both (a) and (b)
  - d) neither (a) nor (b)
9. Which one of the following terms is generally referred to in mortars
  - a) Mobility
  - b) Placeability
  - c) Both (a) and (b)
  - d) Neither (a) nor (b)
10. Cambium layer of tree trunk
  - a) Is a thin layer of sap between sap wood and inner bark
  - b) Contains pure sap
  - c) Gets exposed by removing the tree bark
  - d) All of these
11. An anti- corrosive paint
  - a) Essentially consist of oil and strong drier
  - b) Contains a pigment chromium oxide mixed with very fine sand
  - c) Lasts for a long duration
  - d) Is black in appearance
  - e) All of these are correct
12. The typical composition of 1 liter of plastic emulsion paint contains
  - a) 0.20 kg binders
  - b) 0.5 kg pigments
  - c) 0.10 kg other solids
  - d) 0.6 kg water
  - e) All of these
13. Pick up the correct statement from the following
  - a) The distempers are available in powder form or paste form
  - b) The distempers are mixed with hot water before use
  - c) The oil bound distempers are a variety of an oil paint in which drying oil is treated to mix water.
  - d) The emulsifying agent used in distempers is glue
  - e) All of these
14. The steel(or very low carbon steel) contains between 0.25 to 0.65 percent is classified as
  - a) Low carbon steel
  - b) Medium carbon steel
  - c) High carbon steel

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- d) None of these
15. High strength cement is specially required for the following job:
- Pre-stresses concrete
  - Pre cast concrete
  - Air field runways
  - All of these
16. The quantity of water required for gauging cement for testing cement soundness is taken
- 0.55 P
  - 0.65 P
  - 0.73 P
  - 0.78 P
17. The impact value of aggregate used for concrete not to exceed 30 percent in the following structures:
- Runways
  - Roads
  - Pavements
  - All of the these
18. Pick up the correct statement from the following:
- While hydrating the concrete a great heat of hydration is liberated
  - The heat of hydration gets removed by a through water curing
  - Both a) and b)
  - Neither a) nor b)
19. The hardest rock is
- marble
  - diamond
  - talc
  - quartz
20. A bull nose brick is not used for
- rounding off sharp corners
  - pillars
  - decoration purpose
  - arches
21. Minimum required water cement ratio for a workable concrete, is
- 0.30
  - 0.40
  - 0.50
  - 0.60
  - 1.0
22. The limiting length of an offset does not depends upon
- accuracy of the work
  - method of setting out perpendiculars
  - scale of plotting
  - indefinite features to be surveyed
23. The angle between two plane mirrors of optical square, is
- 20°
  - 30°
  - 45°
  - 60°
  - 90°
24. The constant vertical distance between two adjacent contours, is called
- horizontal interval
  - horizontal equivalent
  - vertical equivalent
  - contour interval
  - contour gradient
25. An imaginary line lying throughout on the surface of the earth and preserving a constant inclination to the horizontal, is called
- contour line
  - contour gradient
  - level line
  - lien of gentle slope
26. Locating the position of a plane table station with reference to three known points, is known as
- intersection method
  - radiation method
  - resection method
  - three point problem
27. The reduce bearing of a line is N 87° W. Its whole circle bearing is
- 87°
  - 273°
  - 93°
  - 3°
28. During secular variation of magnetic meridian at different places
- range of oscillations is constant
  - period of oscillation is constant
  - range and period of oscillation both vary
  - period of oscillation only varies
29. If  $i$  is the stadia distance,  $f$  is the focal length and  $d$  is the distance between the objective and vertical axis of the techeometer, the multiplying constant, is
- $\frac{f}{i}$
  - $\frac{i}{f}$
  - $(f + d)$
  - $\frac{f}{d}$
30. Shift of a curve, is
- $\frac{L^2}{6R}$
  - $\frac{L}{24R}$
  - $\frac{L^2}{24R}$
  - $\frac{L^2}{16R}$
31. ABCD is a rectangular plot of land. If the bearing of the side AB is 75°, the bearing of DC is

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- a) 75°                      b) 255°  
c) 105°                     d) 285°
32. Metric chains are generally available in  
a) 10 m and 20 m length  
b) 15 m and 20 m length  
c) 20 m and 30 m length  
d) 25 m and 100 m length
33. The correct sequence of setting up a plane table at a working station is:  
a) Levelling → Centering → Orienting  
b) Centering → Orienting → Levelling  
c) Orienting → Levelling → Centering  
d) Levelling → Orienting → Centering
34. In all the dimensions of a bar are increased in the proportion  $n : 1$ , the proportion with which the maximum stress produced in the prismatic bar by its own weight, will increase in the ratio  
a)  $1 : n$                   b)  $n : 1$                   c)  $1 : \frac{1}{n}$   
d)  $\frac{1}{n} : 1$                  e)  $1 : \sqrt{n}$
35. A simply supported beam of span  $L$  carries a uniformly distributed load  $W$ . The maximum bending moment  $M$  is  
a)  $\frac{WL}{2}$                       b)  $\frac{WL}{4}$                       c)  $\frac{WL}{8}$   
d)  $\frac{WL}{12}$                      e)  $\frac{WL}{16}$
36. A cantilever carrying a uniformly distributed load  $W$  over its full length is propped at its free end such that it is at the level of the fixed end. The bending moment will be zero at its free end also at  
a) Midpoint of the cantilever  
b) Fixed point of the cantilever  
c)  $1/4^{\text{th}}$  length from free end  
d)  $3/4^{\text{th}}$  length from free end
37. The equivalent length of a column fixed at the other end is  
a) 0.5  $l$                   b) 0.7  $l$                   c)  $l$   
d) 2  $l$                       e) 1.5  $l$
38.  $n$  and  $j$  are numbers of members and joints in a frame. It contains redundant members if  
a)  $n = 2j - 3$             b)  $n = 3j - 2$   
c)  $n < 2j - 3$             d)  $n < j - 2$   
e)  $n > 2j - 3$
39. Pick up the correct statement from the following  
a) The rate of change of bending moment is equal to rate of shear force  
b) The rate of change of shear force is equal to rate of loading  
c) Neither (a) nor (b)  
d) Both (a) and (b)
40. As compared to uniaxial tension or compression the strain energy stored in bending is only  
a)  $\frac{1}{8}$                                   b)  $\frac{1}{4}$   
c)  $\frac{1}{3}$                                   d)  $\frac{1}{2}$
41. Euler's equation for the motion of liquids, is given by  
a)  $\frac{d\rho}{\rho} - gdz + vdv = 0$   
b)  $\frac{d\rho}{\rho} + dgz - vdv = 0$   
c)  $\frac{d\rho}{\rho} + gdz + vdv = 0$   
d)  $\rho dp - gdz + vdv = 0$
42. Flow in pipes is laminar if Reynold number is  
a) Less than 2000                  b) More than 3000  
c) Between 2100 and 3000        d) None of these
43. For an irrotational flow the equation  $\frac{\delta^2 \phi}{\delta x^2} + \frac{\delta^2 \phi}{\delta y^2} = 0$  is given by  
a) Cauchy - Riemann            b) Reynold  
c) Laplace                              d) Bernoulli
44. If the total head of the nozzle of a pipe is 37.5 m and discharge is 1 cumec, the power generated is  
a) 400 H.P                              b) 450 H.P  
c) 500 H.P                              d) 550 H.P
45. If  $C_v$ ,  $C_c$ ,  $C_d$  and  $C_r$  are the hydraulic coefficients of an orifice, then  
a)  $C_d = C_c \cdot C_v$                   b)  $C_r = 1 + C_v^2 / C_d$   
c)  $C_v = C_c + C_d$                   d)  $C_c = C_v / C_d$
46. To replace a pipe of diameter  $D$  by  $n$  parallel pipes of diameter  $d$ , the formula is

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- a)  $d = \frac{D}{n}$       b)  $d = \frac{D}{n^{1/2}}$
- c)  $d = \frac{D}{n^{3/2}}$       d)  $d = \frac{D}{n^{3/5}}$
- e)  $d = \frac{D}{n^{2/3}}$
47. In order to avoid capillary correction the minimum diameter of a manometer used for measuring pressure, should be  
a) 2 mm    b) 4 mm    c) 6 mm  
d) 8 mm    e) 10 mm
48. Shear stress is directly proportional to  
a) the velocity    b) the shear strain  
c) the viscosity    d) the velocity
49. the day is called a rainy day if the rain fall on the day exceeds  
a) 1 mm      b) 1.5 mm  
c) 2 mm      d) 2.5 mm
50. Knowledge of hydrology is necessary for civil engineers for  
a) Designing and construction of irrigation structures  
b) Designing and construction of bridges and culverts  
c) Flood control works  
d) All the above
51. For high flood estimates the average value of the constant C in Dicken's formula  $Q = CA^{3/4}$  is  
a) 6.5      b) 8.5      c) 9.5  
d) 10.5      e) 11.5
52. 45 liters water per person per day, is provided in  
a) office buildings    b) hotels  
c) hostels              d) nurse' homes
53. P.V.C pipes can withstand pressure head of water upto  
a) 25 mm      b) 50 mm      c) 75 mm  
d) 100 mm      e) 125 mm
54. B.O.D of treated water should be  
a) 10 ppm    b) 25 ppm    c) 20 ppm  
d) 30 ppm    e) Nil
55. Filtration of water is done to remove  
a) colour    b) odour    c) turbidity  
d) pathogenic bacteria    e) all the above
56. the sewerage system originates from  
a) house sewer    b) out -fall sewer  
c) branch sewer    d) lateral  
e) main sewer
57. The porosity of sediments in sewer pipes is usually taken as  
a) 0.010    b) 0.011    c) 0.012  
d) 0.013    e) 0.020
58. A manhole is classified as shallow if its depth is between  
a) 0.4 to 0.5 m    b) 0.5 to 0.7 m  
c) 0.7 to 0.9 m    d) 0.9 to 1.20 m  
e) 1.2 to 1.50 m
59. Sewer manholes are generally provided at  
a) The change of gradient  
b) The change of direction  
c) The junction of sewers  
d) All of these
60. If the specific gravity and voids in soil sample are G and e respectively the hydraulic gradient i, is  
a)  $\frac{G-1}{1+e}$       b)  $\frac{G+1}{1-e}$   
c)  $\frac{1-G}{1+e}$       d)  $\frac{1+G}{1+e}$
61. A's salary is 35% of that of B's salary. B's salary is 40% of that of C's salary. If their total salary is Rs. 19,250, the difference between A's and B's salaries is  
(a) Rs. 3,250      (b) Rs. 3,500  
(c) Rs. 325      (d) Rs. 7,500
62. Kundan purchased 16 kg. wheat at Rs. 9.40/kg. and 25 kg. wheat at Rs. 8.50/kg. He sold the mixture of both varieties at Rs. 8.95/kg. What is the gain or loss?  
(a) profit of Rs. 4.05    (b) No profit no loss  
(c) Profit of Rs. 5.00    (d) Loss of Rs. 7.50
63. What is the greatest number that will exactly divide 48, 168, 324 and 1400?  
a) 14    b) 4    c) 16    d) 8
64. Sonu spent 15% of his income on clothes, 30% on food, and 10% on transport. If he has left with Rs. 900 what is his income?  
(a) Rs. 1,500    (b) Rs. 2,000  
(c) Rs. 1,635    (d) Rs. 1,000
65. Population of a village decreases annually by 20%. If its population 2 years ago was 10,000, what will be its present population?  
(a) 6,000      (b) 1000/144  
(c) 6,400      (d) 7,600

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66. A man spends 15% of his income in board and lodging, 10% of the remainder in other personal necessities and 5% of the rest in charity. If his income is Rs. 20000, find the amount left by him at the end.  
(a) Rs.14535  
(b) Rs.14353  
(c) Rs.14533  
(d) Rs. 15435
67. 15 men work 8 hours daily to complete a work in 21 days. In how many days will 14 men complete the work by working 6 hours daily?  
(a) 21 (b) 27 (c) 28 (d) 30
68. A large blood vessel that carries blood away from the heart is called  
(a) a vein (b) an artery  
(c) a capillary (d) nerve
69. Which of the following is an air-borne disease?  
(a) Measles (b) Pink eye  
(c) Typhoid (d) Tuberculosis
70. Har gobind Khoran's work relates to  
(a) synthesis of simple DNA  
(b) understanding the genetic code  
(c) reduction of mutation  
(d) synthesis of RNA from bacterial cell
71. SEBI is a  
(a) statutory body  
(b) advisory body  
(c) constitutional body  
(d) non-statutory body
72. Which of the following is not part of World Bank Group?  
(a) IBRD (b) IFC  
(c) IDA (d) ACB
73. Mohiniattam is folk dance of  
(a) Tamil Naidu (b) Andhra Pradesh  
(c) Kerala (d) Karnataka
74. Spherical shape of rain droplet is due to  
(a) cohesion (b) surface tension  
(c) adhesion (d) capillary action
75. What is the greatest number that will divide 29, 60 and 103 and will leave as remainders 5, 12 and 7 respectively?  
a) 24 b) 16 c) 12 d) 14
76. A certain distance is covered by a vehicle at a certain speed. If half of this distance is covered by another vehicle in double the time, the ratio of the speeds of the two vehicles is  
(a) 1 : 4 (b) 1 : 2  
(c) 2 : 1 (d) 4 : 1
77. The average age of students in section A of 50 students is 14 years and the average age of students in section B of 30 students is 6 years. Find the average age of students in both sections taken together.  
(a) 11 (b) 13  
(c) 12 (d) 14
78. The ratio of lengths of two trains is 5 : 3 and the ratio of their speeds is 6 : 5. The ratio of times taken by them to cross a pole is  
(a) 5 : 6 (b) 11 : 8  
(c) 25 : 18 (d) 27 : 16
79. The price of sugar is increased by 20%. As a result, a family has decreased its consumption by 20%. The expenditure of the family on sugar is decreased by  
(a) 0 % (b) 2.5%  
(c) 4% (d) 5%
80. The ratio of the present ages of Rahul and Rashmi is 2 : 1. The ratio of their ages after 30 years will be 7 : 6. What is the present age of Rahul?  
(a) 6 years (b) 10 years  
(c) 12 years (d) 20 years
81. The price of sugar is increased by 20%. If the expenditure on sugar has to be kept the same as earlier, the ratio between the reduction in consumption and the original consumption is  
(a) 1 : 3 (b) 1 : 4  
(c) 1 : 6 (d) 1 : 5
82. A, B and C can complete a work in 10, 12 and 15 days respectively. They started the work together. But A left the work before 5 days of its completion. B also left the work 2 days after A left. In how many days was the work completed?  
(a) 4  
(b) 5  
(c) 7  
(d) 8
83. A fan is listed at Rs. 1,400 and the discount offered is 10%. What additional discount must be given to bring the net selling price to Rs. 1,200?

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- (a)  $16\frac{2}{3}\%$   
(b) 5%  
(c)  $4\frac{16}{21}\%$   
(d) 6%
84. The contents of two vessels containing water and milk are in the ratio 3 : 4 and 5 : 4 are mixed in the ratio 1 : 4. The resulting mixture will have water and milk in the ratio\_\_\_\_\_.
- (a) 184 : 176  
(b) 167 : 184  
(c) 167 : 148  
(d) 148. 167
85. A man goes from A to B at a uniform speed of 12 kmph and returns with a uniform speed of 4 kmph His average speed (in kmph) for the whole journey is
- (a) 8  
(b) 7.5  
(c) 6  
(d) 4.5
86. What number should be subtracted from both term of the ratio 15 : 19 in order to make it 3 : 4?
- (a) 9  
(b) 6  
(c) 5  
(d) 3
87. A reduction of 20% in the price of oranges enables a man to buy 5 oranges more for Rs. 10/-. The price of an orange before reduction was:
- (a) 20 paise  
(b) 40 paise  
(c) 50 paise  
(d) 60 paise
88. In an examination, a student who gets 20% of the maximum marks fails by 5 marks. Another student who scores 30% of the maximum marks gets 20 marks more than the pass marks. The necessary percentage required for passing is :
- (a) 32%  
(b) 23%  
(c) 22%  
(d) 20%
89. A bag contains rupee, 50-paise and 25-paise coins in the ratio 3 : 4 : 5. If the total amount in the bag is Rs. 625, find the no. of coins of 25-paise.
- (a) 125  
(b) 1250  
(c) 500  
(d) 1000
90. If 3 men or 6 women can do a piece of work in 16 days. in how many days can 12 men and 8 women do the same piece of work?
- (a) 4 days  
(b) 5 days  
(c) 3 days  
(d) 2 days
91. Which of the following is busiest airport of India?
- (a) Delhi (b) Mumbai  
(c) Bengaluru (d) Chennai
92. The name 'Xerox', was basically the name of
- (a) person (b) company  
(c) city (d) none of these
- 93 The largest number of Buddhists is found in
- (a) Bihar (b) Karnataka  
(c) Maharashtra (d) UP
94. Ghatotkach was the son of
- (a) Duryodhana (b) Arjuna  
(c) Yudhishthira (d) Bhima
95. Which of the following is not a member of SAARC?
- (a) Bhutan (b) Bangladesh  
(c) Burma (d) Maldives
96. India's first indigenously built sub-marine is
- (a) INS Shahkul (b) INS Savitri  
(c) INS Vibhuti (d) INS Shalki
97. The first recipient of the Dada Saheb Phalke Award was
- (a) B. N. Sarkar  
(b) Prithvi Raj Kapoor  
(c) Devika Rani  
(d) Kanan Devi
98. On what sum does the difference between the compound in interest and the simple interest for 3 years at 10% is Rs. 31 ?
- (a) Rs. 1500  
(b) Rs. 1200  
(c) Rs. 1100  
(d) Rs. 1000
99. At what percent per annum will Rs. 3000/- amount to Rs. 3993 in 3 years if the interest is compounded annually?

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(a) 9%                      (b) 10%

(c) 11%                     (d) 13%

100. The population of a town is 8000. If the males increase by 6% and the females by 10%, the population will be 8600. Find the number of females in the town.

(a) 5000                    (b) 2000

(c) 3000                    (d) 1500

41. c	91. a
42. a	92. b
43. c	93. c
44. c	94. d
45. a	95. c
46. d	96. d
47. c	97. c
48. b	98. d
49. d	99. b
50. d	100. c

<b>CIVIL THDC SAMPLE PAPER -II</b>	
<b>ANSWER KEY</b>	
1. c	51. e
2. a	52. a
3. a	53. d
4. a	54. e
5. b	55. c
6. d	56. a
7. d	57. d
8. c	58. c
9. c	59. d
10. d	60. a
11. e	61. a
12. e	62. a
13. e	63. b
14. b	64. b
15. d	65. c
16. d	66. a
17. d	67. d
18. c	68. b
19. b	69. a
20. d	70. b
21. b	71. a
22. d	72. d
23. c	73. c
24. d	74. b
25. c	75. a
26. c	76. d
27. b	77. a
28. b	78. c
29. a	79. c
30. c	80. c
31. a	81. c
32. c	82. c
33. b	83. c
34. b	84. c
35. c	85. c
36. d	86. d
37. a	87. c
38. e	88. c
39. c	89. c
40. c	90. c

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