ANSWERS FOR UNDER GRADUATE PROGRAMME IN DESIGN PAPER-I
GENERAL ABILITY TEST
SAMPLE PAPER-I

1. [b] Let B = x, then C = 2x & A = 2/3 x. Therefore A: B: C = (2/3) x: x: 2x = (2/3): 1: 2 = 2: 3: 6
2. [b] Required number = 1 X 2 X 3 X 4 = 24
3. [d] Alcohol content = (20/100) X 20 = 4 liters and therefore water is 16 liters. In the new mixture, alcohol content=4 liters and water is16+5=21liters.Hence percentage of alcohol in new mix=(4/25)X100= 16%.
4. [d] (5a+3b)/ (5a-3b)=[(5a/b) +3]/ [(5a/b) -3]=[5 X (2/5) +3]/ [5 X (2/5) -3]=5/ (-1)= -5
5. [c] Money collected = 5929. Therefore, The number of members = $\sqrt{5929}$ = 77
6. [d] Ram + Lakhan + Pavan = 67 X 3 = 201, Ram + Lakhan = 62 X 2 = 124,
Lakhan + Pavan = 68 X 2 = 136, Hence, Lakhan = 124 + 136 – 201 = 260 – 201 = 59 kg.
7. [c] The sum of remaining two = (8 X 18 – 6 X 15) = 54. The average of these two numbers = 54 / 2 = 27
8. [a] For 'x' length of fabric, (30 / 100) x = 126. Or x = (126 X 100) / 30 = 420
9. [b] Let, son's age = x, then Mr. Chopra's age= 4x. 5 years ago, 9 (x-5) = 4x-5 or x = 8.
Therefore, Mr. Chopra's present age = 4x = 32
10. [a] Required % = [{33 / (100 + 33)} X 100] = 24.8%
11. [b] New price = 110% of 80% of 9600 = (110 X 80 X 9600) / (100 X 100) = 8448.
12. [b] Reduction in consumption = [{20 / (100 + 20)} X 100]% = 16.67%
13. [b] 40% of x = 178 + 22 (since he failed by 22 marks to get 40%) or (40/100) x = 200 or x = 500.
14. [c] For a distance of x, difference in timings = 20 min = 1/3 hour.
Hence, x/3 – x/4 = 1/3 or 4x – 3x = 4 or x = 4 km
15. [b] For original price of 100, new price = 80. So, increase on 80 is 20.
Hence, increase on 100 should be = (20 / 80) X 100 = 25%

16. [d]	**17. [b]**	**18. [a]**	**19. [a]**	**20. [b]**	**21. [d]**
22. [c]	**23. [d]**	**24. [b]**	**25. [d]**	**26. [d]**	**27. [a]**
28. [a]	**29. [a]**	**30. [b]**	**31. [d]**	**32. [c]**	**33. [b]**
34. [d]	**35. [c]**	**36. [a]**	**37. [a]**	**38. [b]**	**39. [c]**
40. [b]	**41. [b]**	**42. [d]**	**43. [d]**	**44. [c]**	**45. [a]**
46. [c]	**47. [d]**	**48. [c]**	**49. [a]**	**50. [c]**	**51. [a]**
52. [c]	**53. [c]**	**54. [b]**	**55. [d]**	**56. [a]**	**57. [c]**
58. [b]	**59. [c]**	**60. [d]**			

61. [d] 21 % of the families use Cinthol $\Rightarrow$ 1500 x (21 / 100) = 315 families use Cinthol.
62. [d] By decreasing Lux by 5 % use we get 27 % $\Rightarrow$ 1500 x (27 / 100) = 405 families use Lux.
After increasing Santoor by 5 % use get 19 % $\Rightarrow$ 1500 x (19 / 100) = 285 families use Santoor.
Difference is 405 – 285 = 120.
63. [b] Total percentage of families using Pears is 17. $\therefore$ 1500 x $\underline{17/100}$ = 255
64. [d] 10 % of people use Rexona $\Rightarrow$ 1500 x $\underline{10/100}$ = 150. 14 % of people use Santoor
$\Rightarrow$ 1500 x $\underline{14/100}$ = 210 $\therefore$ Number of families use Rexona and Santoor is 150 + 210 = 360
65. [c] Dove is used by 5 % of people, $\therefore$It is the soap used by minimum number of families
66. [b] In reverse order, ZYX …NM _ K
67. [d] Here, mouth is the nose & one smells through nose.
68. [b] Since J is the grandson of K, K is grandson or grandmother of J and not father.
69. [c] Area = a*(3/2) *a = (3/2) a^2
70. [d] 7 X 7 = 49, 6 X 6 X 6 = 216, 5 X 5 X 5 X 5 = 625, 4 X 4 X 4 X 4 X 4 = 1024, 3 X 3 X 3 X 3 X 3 = 729
71. [b] The plural of cloth is clothes the plural of lady is not women but ladies.
72. [b] 2 pens + 1 pencil = 15 ..... (from B). Multiplying the above equation by 4 we get,
8 pens + 4 pencils = 60. This is the required answer. $\therefore$ Only statement B is sufficient.
73. [d] In statement B it is given that Ramesh's sister is 10 years old but how many years is Ramesh elder to his sister is not given. $\therefore$ Both the statements are not sufficient.
74. [c] In statement A, it is given that y is grandfather of x. It means x is either grandson or granddaughter to y. In statement B it is given that z is the wife of x that means x is male. $\therefore$From both the statements A and B we can say that x is grandson to Y.
75. [d] The alphabets in the given word are replaced by the alphabets that come before them in the series. Ex. A is replaced by Z, B by A and so on.
76. [b] 26.1.91 = Monday, 365 = 52 Weeks + 1. It is 1st day after 52 weeks. Hence it will be Monday only.
77. [a] 2 + 1^2 = 3, 3 + 2^2 = 7, 7 + 3^2 = 16, 16 + 4^2 = 32, 32 + 5^2 = 57
78. [b] The numbers are multiplied by 3 to get the next number, i.e., 54 X 3 = 162

79. [c] The first letter forms the series N, O, P, Q, and R. The middle letters are vowels and the third series is multiple of 4. i.e., DEFGH & similarly, PQRST.
80. [b] The series is abba/abba/abba/
81. [a] In the remaining cases, there is a decrease in number of candidates in a particular year.
82. [c] The number of candidates in all two other years remained same but the total number of candidates selected was high hence reducing the percentage of commerce students.
83. [b] Except cauliflower all the other three are roots.
84. [c] 81 is 9^2 but 8 is 2^3, 64 is 4^3, 343 is 7^3.
85. [d] Except 27, all the other three numbers are prime numbers.

86. [b]	**87. [d]**	**88. [c]**	**89. [c]**	**90. [b]**	**91. [a]**	
92. [c]	**93. [b]**	**94. [b]**	**95. [a]**	**96. [d]**	**97. [a]**	**98. [c]**

99. [a] The product of individual digits at the bottom two portion of the circle is placed at the top i.e., 3 X 2 X 4 X = 24 and 4 X 3 X 5 = 60. Therefore, 2 X 8 X 6 = 96
100. [b] The shape in the center of the first two gets enlarged in the second set.

ANSWERS FOR UNDER GRADUATE PROGRAMME IN DESIGN PAPER-I
GENERAL ABILITY TEST
SAMPLE PAPER-II

1. [c] Let, A's age = x, then B's age = x + 16. 6 years ago, 3 (x-6) = x + 16 – 6 or x = 14
2. [a] Alcohol content in 5 liters = (30/100) X 5 = 1.5 liters = alcohol in 6 liters. Hence percentage of alcohol in new mix = (1.5 / 6) X 100 = 25%.
3. [d] Let the marked price be Rs. 100, then, Net selling price = 95% of 90% of 80% of 100 = 68.4. Total discount = 100-68.4 = 31.6%
4. [b] A: B = 4: 7 and B: C = 9: 5 = 9 X (7/9): 5 X (7/9) = 7: 35/9 => A: B: C = 4: 7: (35/9) = 36: 63: 35.
5. [b] Total distance covered = 400 + 1000 = 1400 m in time = 72 seconds. Hence, speed = 1400 / 72 m/s or (1400 X 60 X 60) / 1000 X 84 = 60 km/hr
6. [c] For a principal of x = SI for 7 years. Rate per annum = 100 x / 7x = 14.28%.
7. [b] C. P. of 90 articles = 90 x 8 = Rs. 720. S. P. of 80% of 90 articles = 72 x 9. 50 = Rs. 684 and S. P. of remaining articles = 18 x 7.25 = Rs. 130.50 Therefore, total S. P. = 684 + 130.50 = Rs. 814.50
Hence, profit per article= (814.50 – 720) / 90 = Rs. 1.05
8. [a] Here, Kedar = 2 (Ghosh) => Patnaik + Kedar = 2 (Ghosh) + Patnaik
=> But, Ghosh + Patnaik = 84320 and Kedar + Patnaik = 95480
=> 95480 = Ghosh + 84320 => Ghosh = 11160 => Total sum = 95480 + 11160 = 106640
9. [b] We have, $[a^3 + b^3] / [a^2 – ab + b^2] = ab$, where, a = 0.05 and b = 0.02.
Hence, ab = 0.001
10. [d] For a distance d, (d/3) – (d/4) = (2+2)/60 => d/12 = 4/60 or d = 0.8 km
11. [b] Sum of the edges of the cube = 12a, for an edge a. Volume of the cube is a^3
=> 12a = a^3 or a^2 = 12, which is the surface area of the cube.
12. [c] If n is the number, then, [n / (8/17)] - [n X (8/17)]= 225,
⇨ (17n/8) – (8n/17) = 225 => 289n – 64n = 225 X 136 => n = (225 X 136) / 225 = 136
13. [d] Volume of cylinder = π X 5 X 5 X 12 = 300 π cc
Volume of each bullet = (4/3) π X 1.5 X 1.5 X 1.5 = (9/16) π cc
No. of bullets = Volume of cylinder / Volume of each bullet = 533
14. [c] $\left(\frac{5}{8}+\frac{y-x}{y+x}\right)=\left(\frac{5}{8}+\frac{1-x/y}{1+x/y}\right)=\left(\frac{5}{8}+\frac{1/5}{9/5}\right)=\frac{5}{8}+\frac{1}{5}\times\frac{5}{9}=\frac{5}{8}+\frac{1}{9}=\frac{53}{72}$
15. [d] If the distance is 'x' km then, $\frac{x}{80}-\frac{x}{100}=\frac{5+10}{60}\Rightarrow\frac{x}{400}=\frac{1}{4}$ Or x = 100 km

16. [c]	**17. [d]**	**18. [b]**	**19. [d]**	**20. [a]**	**21. [b]**
22. [c]	**23. [c]**	**24. [a]**	**25. [b]**	**26. [b]**	**27. [b]**
28. [a]	**29. [d]**	**30. [d]**	**31. [d]**	**32. [b]**	**33. [c]**
34. [d]	**35. [a]**	**36. [b]**	**37. [c]**	**38. [b]**	**39. [c]**
40. [b]	**41. [b]**	**42. [d]**	**43. [a]**	**44. [c]**	**45. [c]**
46. [c]	**47. [d]**	**48. [b]**	**49. [d]**	**50. [a]**	**51. [a]**
52. [b]	**53. [c]**	**54. [c]**	**55. [b]**	**56. [c]**	**57. [d]**
58. [a]	**59. [c]**	**60. [b]**			

61. [c] From (A), the speed of the train given in 36 km/ hr to change it to m/ sec we have to multiply by 5/18. Hence, speed = 36 x (5/18) = 10 m/ sec. From (B), time = 30 sec. We know that, length = speed x time = 10 x 30 = 300 m. ∴ both the statements are sufficient.

62. [a] Given that x and y are equal (from A). ∴ x - y = 0. ∴ Statement A alone is sufficient.

63. [a] Given from (A), radius = 10 cm and height = 4 cm. We know that volume of the cylinder = $\pi r^2 h$, where, 'r' is the radius and 'h' is the height. ∴ Volume = π x $(10)^2$ x 4 = 22/7 x 100 x 4 = 1256.

64. [d] Here neither the number of boys is given nor the number of girls is given. So we cannot find out the no. of children in the family. ∴ Both the statements are not sufficient.

65. [b] In statement B it is given that the cost price is more than the selling price. So we can say that he sold the house for a loss. ∴ Statement B alone is sufficient.

66. [a] The sequence B + 2, D + 4, H + 2, J + 4, N + 2, P + 4. The Answer is T = P + 4.

67. [b] The first letter series follows a sequence + 2. The second letter follows a sequence+4. The third letter follows a sequence - 3.

68. [b] The missing number is $\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100}$ = 10.

69. [d] The sequence is abc : (a + b + c) / 2. The missing number is = (3 + 6 + 9) / 2 = 9

70. [d] Total number of students from 246. ∴ Number of girls = 25% of 248 = (25/100) x 248 = 62

71. [d] No. of boys playing in chess and hockey is 42 + 34 = 76.
In all the combinations given, we cannot get 19 students.

72. [a] Number of boys = 248. 25% of 248 = 62 = no. of girls. ∴ No. of students = 248 + 62 = 310

73. [c] P is mother of Q, Q is Father of R, R is daughter of S. S is wife of Q.

74. [b] K is daughter of L - means 'K + L'.

75. [b] My father's father is my grand father. My grand father's only daughter will be my paternal aunt. So, the man is woman's nephew.

76. [d] Remaining 3 are hill station and cool places. Jaipur is a hot place.

77. [c] Except 11 others are composite numbers.

78. [a] We eat food. FOOD, is coded as WATCH.

79. [a] 24 ÷ 8 x 6 + 3 - 3 x 6 is after interchanging the sign = 3 x 9 – 18 = 27 – 18 = 9

80. [c] 8 + 112 ÷ 36 - 24 x 10 = 120 ÷ 12 x 10 = 120/ 120 = 1

81. [b] (5 – 2.5) / 2.5 x 100 = (2.5 / 2.5) x 100 = 100

82. [d] This can be calculated for each country as [(3 – 1) /1] x 100 = 200 % for Nepal, which is the highest.

83. [c] 4 – 1.5 = $ 2.5. => 2.5 x 42 = Rs.105 [$1 = Rs.42]

84. [d] Data is not sufficient for this problem.

85. [b] [(4 – 3.5) /3.5] x 100 = 14.28 %

86. [d] **87. [d]** **88. [a]** **89. [d]** **90. [a]** **91. [a]**

92. [c] **93. [a]** **94. [c]** **95. [c]** **96. [b]** **97. [d]** **98. [a]**

99. [a] The cube of the difference between the two numbers in the outer circle is the answer in the inner circle pertaining to that particular quadrant.

100. [b] It is the only figure with six sides, rest being five sided figures.