PREVIOUS YEAR PAPER

SSC CGL 2017 Tier II — Quantitative Abilities — 20 February 2018

SSC CGL · 20 February 2018

41 of the paper's 96 questions · marks per question not printed on the response sheet · 120 minutes

Left out of the original paper: 55 (any question that needs a figure or formatting we cannot show, has no answer in the response sheet, or could not be checked against a second copy of the paper).

Questions from the Staff Selection Commission's paper of 20 February 2018. Each question is followed by its answer, and the answer key is repeated on the last page.

Take it as a timed practice test: exambharo.com/ssc-cgl/previous-year-papers/ssc-cgl-2017-tier-2-quant-20-feb/

Quantitative Abilities

1. Which of the following statement(s) is/are TRUE? 3
I. 33 > 3
33 3 3
II. 333 > (3)

(a) Only I I
(b) Only II II
(c) Both I and II I II
(d) Neither I nor II

Answer: (d)

2. If P = 2 + 6 + 10 + 14 + ... 94 and Q = 1 + 5 + 9 + 81 , then what is the value of P – Q?

(a) 24645
(b) 26075
(c) 29317
(d) 31515

Answer: (b)

3. If A = (1/0.4) + (1/0.04) + (1/0.004) + ... upto 8 terms, then what is the value of A?

(a) 27272727.5
(b) 25252525.5
(c) 27777777.5
(d) 25555555.5

Answer: (c)

4. If M = 0.1 + (0.1) + (0.01) and N = 0.3 + (0.03) + (0.003) , then what is the value of M + N?

(a) 0.411009
(b) 0.413131
(c) 0.313131
(d) 0.131313

Answer: (a)

8. Which of the following statement(s) is/are TRUE? I. The total number of positive factors of 72 is 12. II. The sum of first 20 odd numbers is 400. III. Largest two digit prime number is 97.

(a) Only I and II
I II

(b) Only II and III

(c) Only I and III
I III

(d) All are true.

Answer: (d)

11. Which of the following statement(s) is/are TRUE? I. $\sqrt{11} + \sqrt{7} < \sqrt{10} + \sqrt{8}$. II. $\sqrt{17} + \sqrt{11} > \sqrt{15} + \sqrt{13}$

(a) Only I

(b) Only II

(c) Both I and II
I II

(d) Neither I nor II

Answer: (a)

13. If x + y + z = 22 and xy + yz + zx = 35, then what is the value of (x – y) + (y – z) + (z – x) ? 2

(a) 793

(b) 681

(c) 758

(d) 715

Answer: (c)

16. If one root of the equation Ax +Bx + C = 0 and a half times the others, then which of the following is TRUE?

(a) 7B = 3 CA 2

(b) 7B = 4 CA 2

(c) 7B = 36 CA 2

(d) 10B = 49 CA
2

Answer: (d)

21. If 3x + 4y – 2z + 9 = 17, 7x + 2y + 11z + 8 = 23 and 5x + 9y + 6z – 4 = 18, then what is the value of x + y + z – 34?

(a) – 28

(b) – 14

(c) – 31

(d) – 45

Answer: (c)

36. ABCDEF is a regular hexagon of side 12 cm. What is the area (in cm) of the triangle ECD?
ABCDEF 12 . .

(a) 18√3

(b) 24√3

(c) 36√3

(d) 42√3

Answer: (c)

41. The radius of base of solid cone is 9 cm and its height is 21 cm. It cut into 3 parts by two cuts, which are parallel to its base. The cuts are at height of 7 cm and 14 cm from the base respectively. What is the ratio of curved surface areas of top, middle and bottom parts respectively?

(a) 1 : 4 : 8

(b) 1 : 3 : 5

(c) 1 : 3 : 9

(d) 1 : 6 : 12

Answer: (b)

43. The ratio of curved surface area and volume of a cylinder is 1 : 7. The ratio of total surface area and volume is 187 : 770. What is the respective ratio of its base radius and height?

(a) 5 : 8

(b) 4 : 9

(c) 3 : 7

(d) 7 : 10

Answer: (d)

44. The ratio of total surface area and volume [illegible] sphere is 1 : 7. This sphere is melted to form small spheres of equal size. The radius of each small sphere is 1/6
th
2
the radius of the large sphere. What is the sum (in cm) of curved surface areas of all small spheres?

(a) 31276

(b) 36194

(c) 25182

(d) 33264

Answer: (d)

46. A solid cube has side 8 cm. It is cut along diagonals of top face to get 4 equal parts. What is the total surface area (in cm) of each part?

(a) 96 + 64√2

(b) 80 + 64√2

(c) 96 + 48√2

(d) 80 + 48√2

Answer: (a)

48. What is the value of [sin (y – z) + sin (y + z) + 2 sin y]/[sin (x – z) + sin (x + z) + 2 sin x]? [sin (y – z) + sin (y + z) + 2 sin y]/[sin (x – z) + sin (x + z) + 2 sin x]

(a) cos sin

(b) (sin)/(sin)

(c) sin

(d) sin tan

Answer: (b)

49. What is the value of {[sin (x + y) – 2 sin x + sin (x – y)]/[cos (x – y) + cos (x + y) – 2 cos x]} × [(sin 10x – sin 8x)/(cos 10x + cos 8x)]?
{[sin (x + y) – 2 sin x + sin (x – y)]/[cos (x – y) + cos (x + y) – 2 cos x]} × [(sin 10x – sin 8x)/(cos 10x + cos 8x)]

(a) 0 2

(b) tan x

(c) 1

(d) 2 tan
2

Answer: (b)

51. If sec θ (cos θ + sin θ) = √2, then what is the value of (2 sin θ)/(cos θ – sin θ)?

(a) 3√2

(b) 3/√2

(c) 1/√2

(d) √2

Answer: (d)

54. What is the value of {sin (90 – x) cos [π – (x – y)]} + {cos (90 – x) sin [π – (y – x)]}? {sin (90 – x) cos [π – (x – y)]} + {cos (90 – x) sin [π – (y – x)]}

(a) -cos

(b) -sin

(c) cos x

(d) tan

Answer: (a)

55. The angle of elevation of an aeroplane from a point on the ground is 60 . After flying for 30 seconds, the angle of elevation o
changes to 30 . If the aeroplane is flying at a height of 4500 m, then what is the speed (in m/s) of aeroplane?

(a) 50√3

(b) 100√3

(c) 200√3

(d) 300√3

Answer: (b)

56. A kite is flying in the sky. The length of string between a point on the ground and kite is 420 m. The angle of elevation of string with o the ground is 30 . Assuming that there is no slack in the string, then what is the height (in metres) of the kite?

(a) 210

(b) 140√3

(c) 210√3

(d) 150

Answer: (a)

60. An alloy is made by mixing metal A costing Rs 2000/kg and metal B costing Rs 400/kg in the ratio A:B = 3:1. What is the cost (in Rs) of 8 kilograms of this alloy?

(a) 1600

(b) 9800

(c) 6400

(d) 12800

Answer: (d)

61. A, B and C invest to start a restaurant. The total investment was Rs 3 lakhs. B invested Rs 50,000 more than A and C invested Rs 25,000 less than B. If the profit at the end of the year was Rs 14,400 then what is C's share of the profit (in Rs)?
A, B

(a) 3600

(b) 4800

(c) 6000

(d) 7200

Answer: (b)

62. Two businessmen A and B invest in a business in the ratio 5 : 8. They decided to reinvest 30% of the profit they earned back into the business. The remaining profit they distributed amongst themselves. If A's share of the profit was Rs 87,500 then how much profit (in Rs) did the business make?

(a) 227000

(b) 250000

(c) 375000

(d) 325000

Answer: (d)

63. Working alone A can do the task in 27 hours and B can do it in 54 hours. Find C's share (in Rs) if A, B and C get paid Rs 4,320 for completing a task in 12 hours on which they worked together.

(a) 1440

(b) 960

(c) 1920

(d) 1280

Answer: (a)

64. If A had worked alone he would have taken 63 hours to do the task. What is B's share, if A and B work together on a task finishing it in 36 hours and they get paid Rs 5,950 for it?

(a) 3400

(b) 3600

(c) 2550

(d) 2750

Answer: (c)

68. A retailer marks up his goods by 150% and offers 40% discount. What will be the selling price (in Rs) if the cost price is Rs 800?

(a) 1200

(b) 1500

(c) 1000

(d) 2000

Answer: (a)

69. On a television of brand A the discount is 25% and on television of brand B the discount is 40%. The price of B after discount Rs 2,250 greater than the price of A after discount. What is the marked price of A (in Rs) if marked price of B is Rs 35,000?

(a) 18750

(b) 21000

(c) 25000

(d) 17850

Answer: (c)

70. If 60% discount is offered on the marked price and selling price becomes equal to cost price then what was the % mark up?

(a) 100

(b) 250

(c) 150

(d) 40

Answer: (c)

72. How many job applicants had applied if the ratio of selected to unselected was 19:17. If 1,200 less had applied and 800 less selected, then the ratio of selected to unselected would have been 1:1.

(a) 6000

(b) 7200

(c) 8400

(d) 4800

Answer: (b)

74. The ratio of the sum of the salaries of A and B to the difference of their salaries is 11:1 and the ratio of the sum of the salaries of B and C to the difference of their salaries is also 11:1. If A's salary is the highest and C's is the lowest then what is B's salary (in Rs) given the total of all their salaries is Rs 1,82,000? A

(a) 72000

(b) 60000

(c) 50000

(d) 86400

Answer: (b)

75. If by increasing the price of a ticket in the ratio 8:11 the number of tickets sold fall in the ratio 23:21 then what is the increase

(a) 21250

(b) 9400

(c) 7850

(d) 12850

Answer: (b)

76. The ratio of ages of the father and mother was 11:10 when their son was born. The ratio of ages of the father and mother will be 19:18 when the son will be twice his present age. What is the ratio of present ages of father and mother?

(a) 15 : 14

(b) 14 : 13

(c) 16 : 15

(d) 17 : 16

Answer: (a)

80. What is the average of all numbers between 100 and 200 which are divisible by 13? 100

(a) 147.5

(b) 145.5

(c) 143.5

(d) 149.5

Answer: (d)

81. A vendor buys bananas at 9 for Rs 8 and sells at 8 for Rs 9. What will be the profit or loss (in %)?

(a) 13.28% profit

(b) 26.56% loss

(c) 26.56% profit 26.56%

(d) 13.28% loss

Answer: (c)

82. If a stall sells a pizza at Rs 200 he makes 20% loss if he wants to make 10% profit then at what price (in Rs) should he sell?

(a) 250

(b) 300

(c) 275

(d) 325

Answer: (c)

86. Two numbers are 90% and 75% lesser than a third number. By what % should the first number be increased so that it becomes equal to the second number?

(a) 250

(b) 200

(c) 150

(d) 100

Answer: (c)

87. When a number is increased by 216, it becomes 140% of itself. What is the number?

(a) 540

(b) 756

(c) 450

(d) 675

Answer: (a)

88. A man donates 30% of his wealth to charity. 30 [illegible] and 25% of the remaining wealth to his wife and son respectively. The rest he divides e[illegible]lly b[illegible]ween his three daughters. One of his daughter gets Rs 42 lakh as her share. What was the m[illegible]ealth (in Rs lakhs)?

(a) 280

(b) 400

(c) 500

(d) 350

Answer: (b)

92. Flight A usually takes 1 hour more than Flight B to travel a distance of 7200 km. Due to engine trouble speed of flight B falls by a th factor of 1/6 , so it takes 36 minutes more than Flight A to complete the same journey? What is the speed of Flight A (in km/hr)?

(a) 800

(b) 900

(c) 750

(d) 720

Answer: (a)

94. What is the compound interest earned on Rs 80,000 at 40% per annum in 1 year compounded quarterly?

(a) 28317

(b) 37128

(c) 18732

(d) 21387

Answer: (b)

95. An investor invested his saving in the stock market. The value of his investments increased by 12% and 9% in the first year and the second year respectively. If the value of his investments after two years became Rs 97,664 then how much had he invested (in Rs)?

(a) 81000

(b) 75000

(c) 80000

(d) 72000

Answer: (c)

Answer key

Answer key as marked in the Staff Selection Commission's response sheet. "—" means the sheet did not show it clearly.

Quantitative Abilities

1	**(d)**	2	**(b)**	3	**(c)**	4	**(a)**	8	**(d)**	11	**(a)**	13	**(c)**	16	**(d)**
21	**(c)**	36	**(c)**	41	**(b)**	43	**(d)**	44	**(d)**	46	**(a)**	48	**(b)**	49	**(b)**
51	**(d)**	54	**(a)**	55	**(b)**	56	**(a)**	60	**(d)**	61	**(b)**	62	**(d)**	63	**(a)**
64	**(c)**	68	**(a)**	69	**(c)**	70	**(c)**	72	**(b)**	74	**(b)**	75	**(b)**	76	**(a)**
80	**(d)**	81	**(c)**	82	**(c)**	86	**(c)**	87	**(a)**	88	**(b)**	92	**(a)**	94	**(b)**
95	**(c)**														