SSC CGL Tier-II Quantitative Aptitude 2020 Mock 12

Q1. In an examination paper of five questions, 5 % of the candidates answered all of them and 5% answered none. Of the rest, 25% candidates answered only one question and 20% answered 4 questions. If 396 candidates answered either 2 questions or 3 questions, the number of candidates that appeared for the examination was -
(a) 1000
(b) 900
(c) 800
(d) 850

Q2. The population of a town is 3,11,250. The ratio between women and men is 43 : 40. If 24% men and 8% women are literate among them. The total number of literate person in the town is-
(a) 41800
(b) 48900
(c) 56800
(d) 99600

Q3. In a certain school, 20% of students are below 8 years of age. The number of students above 8 years of age is 2/3 of the number of students of 8 years of age which is 48. What is the total number of students in the school?
(a) 72
(b) 80
(c) 120
(d) 100

Q4. A person buys 5 tables and 9 chairs for Rs. 23,400. He sells the tables at 10% profit and chairs at 20% profit. If his total profit on selling all the tables and chairs is Rs. 3030. What is the cost price of 3 chairs?
(a) Rs. 2100
(b) Rs. 2300
(c) Rs. 2400
(d) Rs. 2460

Q5. The profit obtained when 135 chairs are sold is equal to the cost price of 60 chairs. What is the percentage profit obtained when 26 chairs are given free with the sale of 143 chairs?

(a) $11\frac{1}{9}\%$

(b) $22\frac{2}{9}\%$

(c) $33\frac{1}{9}\%$

(d) $22\frac{1}{9}\%$

Q6. Two articles are sold for Rs. 12, 113 each. On one, the seller gains $45\frac{5}{11}\%$ and on the other, he loses 17%. What is his overall gain or loss percent, correct to two decimal places?

(a) 5.69%

(b) 4.39%

(c) 4.19%

(d) 5.29%

Q7. Neeraj bought more apples than oranges. He sells apples at Rs. 23 a piece, and makes 15% profit. He sells oranges at Rs. 10 a piece and makes 25% profit. If he gets Rs. 673 after selling all the apples and oranges, then find his profit percentage?

(a) 14.25%

(b) 15.35%

(c) 16.75%

(d) 17.65%

Q8. The market price of an article is Rs. 6217 but due to festive offer a certain percent of discount is declared. Amit availed this opportunity and bought the article at reduced price. He then sold it at Rs. 6217 and thereby make a profit of $58\frac{1}{3}\%$. The percent of discount allowed was?

(a) $32\frac{14}{19}\%$

(b) $36\frac{16}{19}\%$

(c) $30\frac{12}{19}\%$

(d) $34\frac{18}{19}\%$

Q9. The market price of an article is Rs. 6400. If three successive discounts, each of K% on the marked price is equal to a single discount of Rs.2469.6. What will be the selling price if only two discounts of K% each were given on the marked price?

(a) Rs. 4134

(b) Rs. 4444

(c) Rs. 4624

(d) Rs. 4864

Q10. A shopkeeper marks up his goods 45% above the CP and gives 23% discount to the customer. At the time of buying he uses 1120 gm instead of 1kg and at the time of selling the goods he gives 880 gm weight instead of 1kg, Find his profit%?
(a) 38.1%
(b) 42.1%
(c) 43.1%
(d) 44.1%

Q11. If SP of a book is 13/2 times to the discount offered and discount % is equal to the profit %. It is given that discount is Rs. 374. Find the CP of Book?
(a) Rs. 2145
(b) Rs. 2335
(c) Rs. 2455
(d) Rs. 2625

Q12. Ajeet borrowed a sum of Rs. 5044 at 5% p.a. compound interest and paid back in 3 equal annual installments. What is the amount of each installment?
(a) 1954.2
(b) 1766.8
(c) 1638.4
(d) 1852.2

Q13. A certain sum of money becomes 2.56 times of itself in 2 years. Then find the rate of interest if compounded annually.
(a) 50%
(b) 60%
(c) 6%
(d) 36%

Q14. A person borrowed a sum at 12% per annum and return Rs 5400 after 1 year. Now the rate of interest becomes 10% per annum on rest of the amount. If the interest of the 2nd year is 4/5 of the 1st year. Find the amount borrowed?
(a) Rs. 135000
(b) Rs. 140000
(c) Rs. 125700
(d) Rs. 120000

Q15. A certain sum of money is invested in two parts at the rate of $14\frac{2}{7}$% per annum compounded annually for 5 years and 8 years respectively. If amount received on both investement is equal. If difference between their investment is Rs. 2873. Then find the total investment.
(a) Rs. 17942
(b) Rs. 20055
(c) Rs. 14535
(d) Rs. 15490

Q16. The difference between compound interest and simple interest on a sum for 2 years at 12% per annum, when the interest is compounded annually is Rs 72. If the interest were compounded half yearly the difference in two interests would be
(a) Rs. 140.2
(b) Rs. 86.2
(c) Rs. 78.3
(d) Rs. 112.5

Q17. The average of 57 number is 749. If each number is multiplied by 0.3 and added to 7.3, the average of the next set of number is
(a) 352.9
(b) 289.6
(c) 232
(d) 199

Q18. The average of square and cube of a non- zero number is 276 times the number. Find the number.
(a) 22
(b) 13
(c) 23
(d) 17

Q19. What is the average of first 13 multiples of 12 ?
(a) 137
(b) 84
(c) 183
(d) 97

Q20. If the average of $x^2 + \frac{1}{x^2}$ is M, then the average of $x + \frac{1}{x}$ is
(a) $\frac{\sqrt{2M+2}}{2}$
(b) M + 2
(c) $\frac{M+\sqrt{2}}{2}$
(d) $M^2 + 2$

Q21. The ratio of milk and water in a vessel is 14 : 13 . If 54 ltr of mixture is taken out and 82 ltr water is added then ratio of milk and water becomes 13 : 15. Then find the initial quantity of milk in the mixture ?
(a) 364 litre
(b) 392 litre
(c) 138 litre
(d) 540 litre

Q22. Two vessel contain water and spirit in the ratio 3 : 9 and 7 : 6, If both the vessels are mixed in the ratio 1 : 1. Find the ratio of water and spirit in the new mixture ?
(a) 41 : 63
(b) 51 : 64
(c) 37: 29
(d) 7 : 13

Q23. There are 2 types of coins 10p and 25p in a box. The total money in the box is Rs. 46 and the total number of coins is 250. Find the number of 10p coins.
(a) 140
(b) 110
(c) 100
(d) 108

Q24. The ratio of milk and water in a mixture is 4 : 5. How much part of the mixture should be replaced by water so that ratio of milk and water is 2 : 3 ?
(a) 2/45
(b) 3/46
(c) 1/45
(d) 4/45

Q25. No stag is allowed in a party. 2/3 of the males are interested in dancing. If overall 50% people are interested in dancing. Find the ratio of females interested in dancing to those females who are not.
(a) 3 : 2
(b) 1 : 4
(c) 1 : 2
(d) 1 : 3

Q26. A, B and C are three partners in a business. A receives 2/5th part of the total profit and remaining profit is distributed between B and C. If profit return will increase from 5% to 9%, then profit of A increase by Rs 420. Find the total investment of B & C?
(a) Rs. 32575
(b) Rs. 15750
(c) Rs. 29840
(d) Rs. 18480

Q27. P, Q R are partners in a company P's money is used for 6 months and claims 4/7 of the profit. Q's money is used for 5 months and claims 3/14 of the profit. R invested Rs. 2400 for 6 months. How much total money (in Rs) did P and Q invested?
(a) 9361
(b) 9280
(c) 7385
(d) 12400

Q28. A contractor hires 36 men for a work, they complete ¾th of the work in 15 days. After that work is stopped due to rain, 25% of the completed work is destroyed by rain and 6 men falls sick. Find the time in which remaining work will be completed. ?

(a) 9 days

(b) $12\frac{1}{2}$ days

(c) $8\frac{1}{3}$ days

(d) $10\frac{1}{2}$ days

Q29. A and B started working together but after some days, A left the work and the whole work will be completed in 24 days. Find after how many days A left the work if A and B complete the work in 32 and 48 days respectively.

(a) 8 days

(b) 16 days

(c) 18 days

(d) 12 days

Q30. A and B can build a wall in 12 hours and 18 hours respectively. But if they work together they put 180 less bricks per hour and build a wall in 9 hours. Find the number of bricks in the wall.

(a) 5820

(b) 6120

(c) 6480

(d) 7260
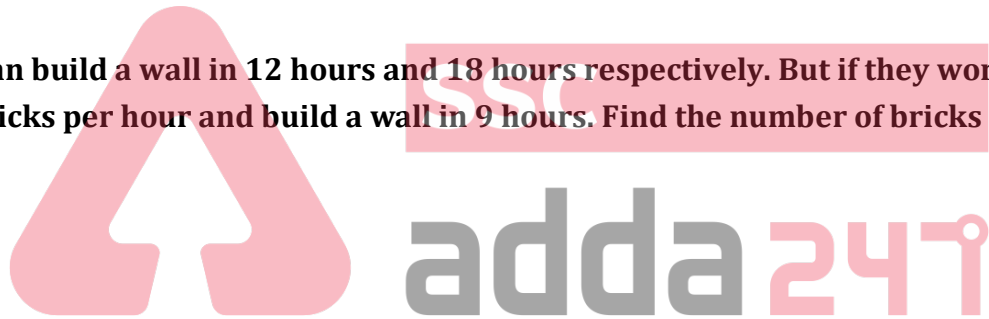
Q31. A man is 60% more efficient than a women. A child does $\frac{3}{5}$th of work in a day as a women. If company hires 126 people (man, women and children) in the ratio 9: 7: 5 and pays them in all Rs. 1344 at the end of the work. What must be the daily wage of a woman if the wages are proportional to work done?

(a) Rs. 10.5

(b) Rs. 8

(c) Rs. 10

(d) Rs. 9.5

Q32. 6 men or 14 women can paint a house in 25 days. The numbers of days required by 18 men and 28 women to paint such four houses at the same rate is: -

(a) 5

(b) 15

(c) 10

(d) 20

Q33. Two pipes A and B can fill a tank in 25 minutes and 30 minutes. Respectively, if initially only pipe B was kept open for the $\frac{3}{5}$th part of the total time and both pipes A and B were kept open for the rest time being, the tank would be filled. How many minutes should both pipe take to fill the tank?

(a) $19\frac{16}{35}$ mins.

(b) $22\frac{10}{39}$ mins.

(c) $31\frac{11}{35}$ mins.

(d) $20\frac{10}{37}$ mins.

Q34. A, B, C can fill a tank in 8, 10, 12 mins respectively. If B and C pipes work only for starting 2 mins, then in how much time the tank will be filled if all pipes are opened from starting?

(a) $3\frac{1}{2}$ min

(b) $4\frac{1}{7}$ min

(c) $5\frac{1}{5}$ min

(d) $5\frac{1}{7}$ min

Q35. A person while walking diametrically across a semi-circular playground takes 3 mins less than if he had kept walking round the circular path from A to B. If he walks 40 metres in 16 seconds. What is the radius of the playground?

(a) 382.75 m
(b) 393.75 m
(c) 397.25 m
(d) 391.65 m

Q36. A train moves at a constant speed of 160 km/hr. for 5 kilometer and 64 km/hr. for the next 8 kilometers. What is the average speed of the train ?

(a) 72 km/hr.
(b) 83.2 km/hr.
(c) 80 km/hr.
(d) 86.7 km/hr.

Q37. A man covered a distance of 420 km in 34 hours partly by train at 12 km/hr. and partly by bus at 15 km/hr. Find the distance covered by train.

(a) 360 km
(b) 450 km
(c) 180 km
(d) 240 km.
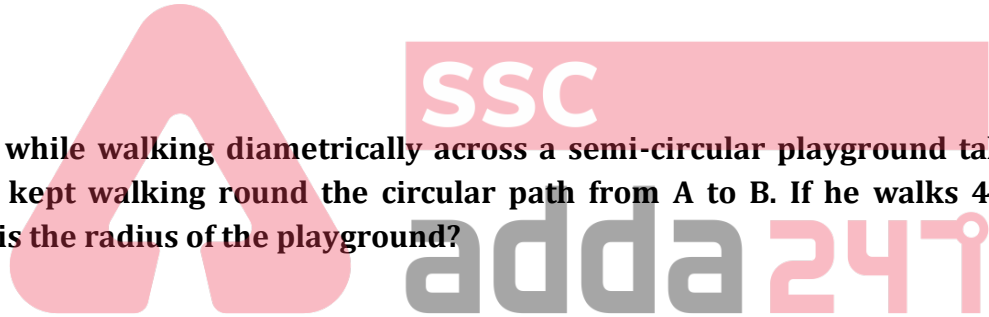
Q38. The ratio of speed of a motorboat to that of the current of water is 17 : 9. The boat goes along with the current in 4hr 32 min. It will come back in.
(a) 16hr 48 min
(b) 14hr 44 min
(c) 15hr 16min
(d) 12hr 48min

Q39. The speed of boat in still water is 6 km/hr more than the speed of current. If a boat takes total 8 hr to cover 44 km in downstream and 36 km in upstream. Then find the speed of boat in still water.
(a) 14 km/hr.
(b) 16 km/hr.
(c) 12 km/hr.
(d) 15 km/hr.

Q40. A train covers a certain distance with speed 45 km/hr. but it returns with some stoppages and average speed is 42 km/hr. Then find how long does it stop at each hour.
(a) 5min/hr
(b) 4 min/hr
(c) 2min/hr
(d) 15min/hr

Directions (41-45): The given pie chart shows the monthly expenditure on various items and monthly saving of a household. The same distribution is followed for all the months of the year.
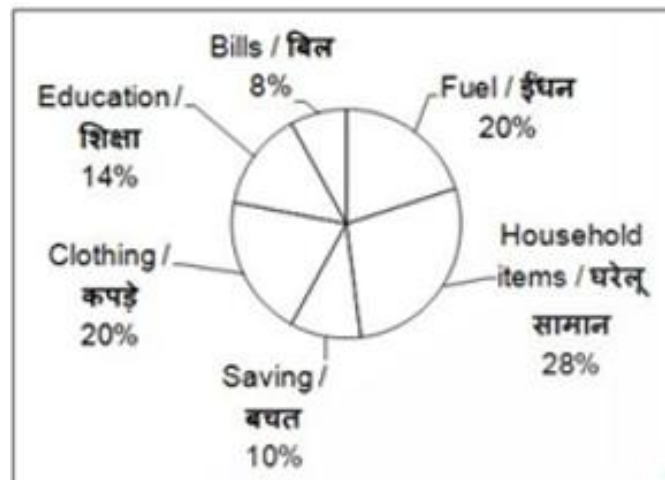
Q41. If monthly income is Rs 40000, then how much is spent (in Rs) on Household?
(a) 11200
(b) 14000
(c) 14500
(d) 16000

Q42. If monthly income is Rs 85000, then what is the difference (in Rs) between expenditure on Fuel and Education?

(a) 5100

(b) 3500

(c) 4200

(d) 5500

Q43. If Rs 2900 are saved per month, then what is the monthly salary (in Rs) of the household?

(a) 29000

(b) 23000

(c) 30000

(d) 28000

Q44. If the difference in monthly expenditure on Clothing and Bills is Rs 8400, then what is the annual income?

(a) 820000

(b) 670000

(c) 740000

(d) 840000

Q45.If the difference in monthly expenditure on clothing and education is Rs 24000, then what is the difference (in Rs) in yearly saving and yearly expenditure on Bills?

(a) 84000

(b) 89000

(c) 96000

(d) 98000

Directions (46-49): Refer to the following table. Read the table and answer the questions.
Food Grains Production in a Country is 1999
(in lakh tonne)

State	Rice	Wheat	Jowar	Pulses	Others
P	45	103	—	27	29
Q	48	86	73	19	15
R	59	32	67	14	31
S	41	37	59	21	15
T	37	22	41	13	11
U	68	15	12	—	18
V	57	8	7	12	10
W	38	28	31	22	45

Q46. Which state had the highest grain production?

(a) P

(b) Q

(c) R

(d) S

Q47. What was the proportion of rice production to wheat production in the country?

(a) 297 : 173

(b) 342 : 191

(c) 393 : 331

(d) 3 : 4

Q48. Jowar was the most important food grain in the state/states.

(a) Q, R, S

(b) Q

(c) R, S

(d) R, S, T

Q49. State P alone accounted for approximately what percentage of wheat production in the country?

(a) 73

(b) 50

(c) 41

(d) 30

Q50. Find $\frac{1}{1 \times 2 \times 3} + \frac{1}{2 \times 3 \times 4} + \frac{1}{3 \times 4 \times 5} + - - - -$ upto 50 terms

(a) $\frac{1921}{6122}$

(b) $\frac{1325}{5304}$

(c) $\frac{1465}{5302}$

(d) $\frac{1211}{5165}$

Q51. Find product of all factors of 36

(a) 17766219

(b) 10076426

(c) 11761283

(d) 10077696

Q52. Find the unit digit of the product

11 × 12 × 13 × 15 × ---- 29

(a) 1

(b) 7

(c) 0

(d) 9

Q53. The square root of which of the following is a rational number?
(a) 1079.28
(b) 2341.29
(c) 8162.81
(d) 1043.29

Q54. A teacher of school wants to create a formation of square from 408383 students. After arrangement, teacher found some students remained unused. Find the number of unused students
(a) 57
(b) 83
(c) 62
(d) 69

Q55. Find $\sqrt{21 - \sqrt{21 - \sqrt{21 - - - \infty}}}$

(a) $\frac{\sqrt{85}-1}{2}$

(b) $\frac{\sqrt{77}+3}{2}$

(c) $\frac{\sqrt{85}+1}{2}$

(d) $\frac{\sqrt{99}-3}{4}$

Q56. If $a = \frac{\sqrt{7}}{3}$ find $(\sqrt{1+a} + \sqrt{1-a})^2$

(a) $6(\sqrt{3} + 4)$
(b) $(4 + \sqrt{3})\,3$

(c) $\frac{3+2\sqrt{2}}{2}$

(d) $\frac{6+2\sqrt{2}}{3}$

Q57. What is the sum of digits of the least number which when divided by 15, 18, 25, 30 leaves the same remainder 7 in each case is also a multiple of 13.
(a) 12
(b) 14
(c) 16
(d) 18

Q58. Two number are in the ratio 5: 7. The product of LCM and HCM is 15435. Find the difference of the numbers
(a) 36
(b) 54
(c) 42
(d) 48

Q59. If $x^8 - 727x^4 + 1 = 0$, find $x + \frac{1}{x}$

(a) $\sqrt{29}$

(b) $\sqrt{27}$

(c) $\sqrt{23}$

(d) $\sqrt{21}$

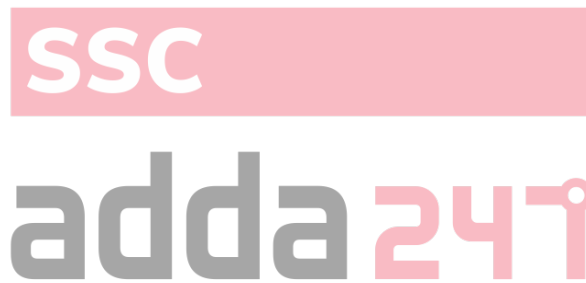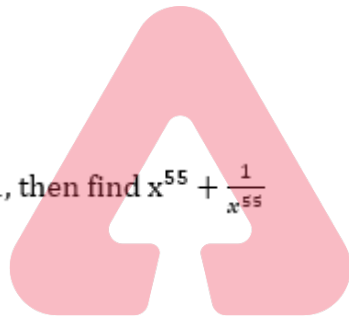**Q60.** If $a^2 + b^2 + c^2 + 14 = 2(3a - 2b + c)$, then $4a - 3b + 2c = ?$

(a) 8

(b) 12

(c) 16

(d) 20

Q61. If $a^2 + 2 = 2a$, find $a^5 - a^4 + a^3 + a^2 + 2$

(a) 0

(b) 1

(c) -1

(d) $\sqrt{3}$

Q62. If $x + \frac{1}{x} = 1$, then find $x^{55} + \frac{1}{x^{55}}$

(a) 1

(b) 0

(c) -1

(d) -2

Q63. If $ab + bc + ca = 17$, $a + b + c = 11$ and $abc = -4$, find $a^3 + b^3 + c^3$

(a) 782

(b) 758

(c) 762

(d) 781

Q64.
If $a^4 + a^2b^2 + b^4 = 1868$, $a^2 + b^2 + ab = 16.4$
Find $ab = ?$

(a) 2.8

(b) 2.4

(c) 2.2

(d) 2.6

Q65. If $a + \frac{1}{b} = 3$, $b + \frac{1}{c} = 2$, $c + \frac{1}{a} = \frac{7}{3}$, and a, b, c, are positive numbers, find $abc + \frac{1}{abc}$

(a) $6\frac{4}{9}$

(b) $6\frac{3}{7}$

(c) $6\frac{2}{3}$

(d) $6\frac{1}{3}$

Q66. In the following figure, find the area of square (approx.) given that the triangle is an equilateral triangle (Take $\sqrt{3}$ = 1.732)
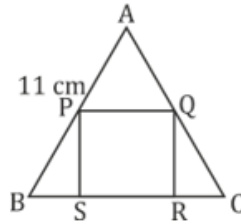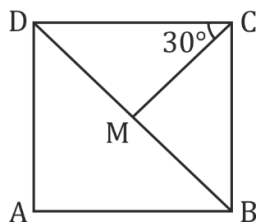

(a) 26.01 cm²
(b) 24.32 cm²
(c) 22.61 cm²
(d) 32.01 cm²

Q67. In an isosceles right angled triangle, whose perimeter is 4a cm, find the area of triangle?
(a) $6a^2 (4 - \sqrt{3})^2$
(b) $a^2 (\sqrt{2} - 1)^2$
(c) $3a^2 (3 + 2\sqrt{2})$
(d) $4a^2 (3 - 2\sqrt{2})$

Q68. In the given figure, ABCD is a square of side 10 cm. ⏥ DCM = 30°. What is the area (in cm²) of triangle CMB?

(a) $16\sqrt{2} (\sqrt{2} + 1)$
(b) $25\sqrt{3} (\sqrt{3} - 1)$
(c) $16\sqrt{3} (\sqrt{3} + 1)$
(d) $25\sqrt{3} (\sqrt{2} - 1)$

Q69. Two chords PQ and RS intersect at 90° if PS is 77 cm and RQ is 36 cm, find the area of circle?
(a) 1806.25π cm²
(b) 1703.50π cm²
(c) 1400 π cm²
(d) 1890.61π cm²

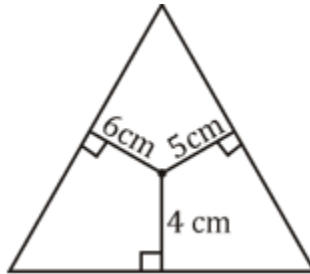**Q70.** PQ and PR are the two tangents to a circle whose radius is 12 cm. If QPR = 120°, find $\sqrt{PQ^2 + PR^2}$?
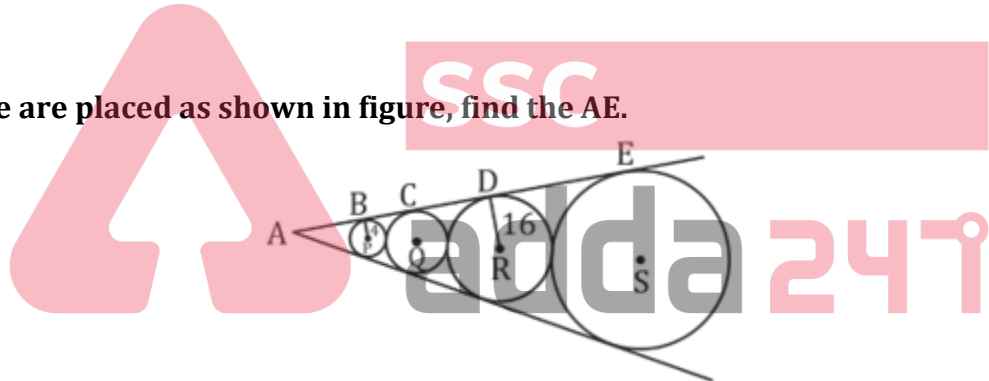
(a) $2\sqrt{5}$ cm²
(b) $6\sqrt{6}$ cm²
(c) $3\sqrt{5}$ cm²
(d) $4\sqrt{6}$ cm²

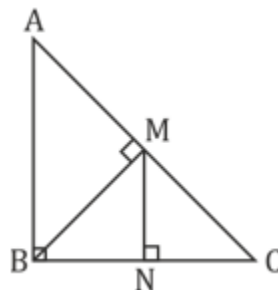**Q71.** In the given figure, find the side of equilateral triangle.

(a) $9\sqrt{3}$ cm
(b) $10\sqrt{3}$ cm
(c) $12\sqrt{3}$ cm
(d) $15\sqrt{3}$ cm

Q72. Four circle are placed as shown in figure, find the AE.

(a) $64\sqrt{3}$ cm
(b) $64\sqrt{2}$ cm
(c) $64\sqrt{5}$ cm
(d) $64\sqrt{7}$ cm

Q73. If AB = 12 cm and BC = 5 cm, find the length of MN?

(a) 300/169 cm
(b) 151/171 cm
(c) 76/99 cm
(d) 250/301 cm

Q74. A, B, C, D are points on the circumference of a circle of radius 5 cm, such that ABD is equilateral triangle and AC is a diameter of circle. Find the area of quadrilateral ABCD?
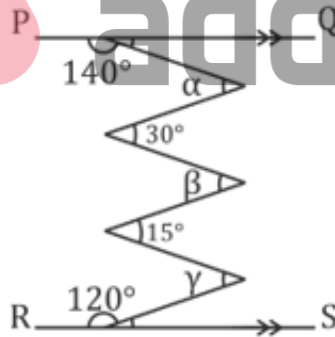(a) 15√3 cm²
(b) 36√2 cm²
(c) 9√2 cm²
(d) 25√3 cm²

Q75. In a circle with centre O, PQRO is a parallelogram where Q is a point on mirror arc PR. What is the reflex angle POR?
(a) 120
(b) 210
(c) 300
(d) 240

Q76. In a triangle ABC, ∠B = 30°, ∠C = 45°. If BC = 40 cm, find the length of AB?
(a) 40(√3 – 1) cm
(b) 40(√2 – 1) cm
(c) 20(√3 + 1) cm
(d) 20(√3 – 1) cm

Q77. In the given figure PQ || RS, find α + β + γ .

(a) 145°
(b) 135°
(c) 120°
(d) 125°

Q78. Find distance between circumcenter and incentre given circum-radius is 5 cm and inradius is 1.5 cm.
(a) 4.18 cm
(b) 2.41 cm
(c) 3.16 cm
(d) 9.28 cm

Q79. PQ is a straight line of 13 units length. If P has the co-ordinates (2, 5) and Q has the co-ordinates (x, - 7) , then the value of x is

(a) –7

(b) 3

(c) 13

(d) 7

Q80. If the co-ordinates of three vertices of a square are· (0, 0), (0, –4) and (4, 0), then the co-ordinates of its fourth vertex is

(a) (4, 4)

(b) (–4, 4)

(c) (4, –4)

(d) (–4, –4)

Q81. Find the length of the longest pole that can be placed in a room 32 m long, 16 m broad and 11 m high? (upto 2 decimal)

(a) 78.22 m

(b) 39.61 m

(c) 46.26 m

(d) 37.42 m

Q82. The ratio of the curved surface area and total surface area of right circular cylinder is 7: 11. If total surface area is 5038 cm^2 what is the volume (in cm^3) of the cylinder?

(a) $1603 \sqrt{\frac{3206}{11}}$ cm^3

(b) $1403 \sqrt{\frac{3208}{11}}$ cm^3

(c) $1633 \sqrt{\frac{1206}{11}}$ cm^3

(d) $1243 \sqrt{\frac{4206}{11}}$ cm^3

Q83. Find the radius of a hemisphere with maximum volume inside a cone of height 85 cm and diameter 264 cm.

(a) 82.46 cm

(b) 71.46 cm

(c) 69.31 cm

(d) 52.31 cm

Q84. The height of a cone is 42 cm. The cone is cut parallel to its base such that volume of cone and frustum so formed is in the ratio 8: 19. Find at which height from base cone is cut?
(a) 24 cm
(b) 28 cm
(c) 14 cm
(d) 16 cm

Q85. The radii of the two circular faces of the frustum of a cone is 6 cm and 8 cm. If the height of frustum is 63 cm, find the volume (in cm³)?
(a) 7698 cm³
(b) 8967 cm³
(c) 16798 cm³
(d) 9768 cm³

Q86. It takes 6 ltrs to paint a surface of a solid sphere if this solid sphere is sliced into 4 identical pieces, how many litres will be required to paint all the surfaces of these 4 pieces?
(a) 14 ltrs
(b) 8 ltrs
(c) 12 ltrs
(d) 16 ltrs

Q87. Find the TSA of pyramid whose base is hexagon with side $10\sqrt{3}$ cm and height 8 cm?
(a) $890\sqrt{3}$ cm²
(b) $960\sqrt{3}$ cm²
(c) $940\sqrt{3}$ cm
(d) $810\sqrt{3}$ cm²

Q88. Water is flowing at the rate of 1 km/hr through a circular pipe of 40 cm diameter into circular cistern of diameter 12 m and depth 5m. In how much time will the cistern be filled?
(a) 4.5 hrs.
(b) 3.2 hrs.
(c) 4 hrs.
(d) 3.5 hrs.

Q89. A cylinder of maximum volume is cut out of a solid wooden cube. How much % of solid is wasted in this process? (Approx.)
(a) 33.3%
(b) 29.3%
(c) 21.5%
(d) 22.6%

Q90. A cone of radius 48 cm and slant height 73 cm has a cube of maximum volume inside it. Find the side of cube? (take √2 = 1.4)
(a) 30.3 cm
(b) 49.6 cm
(c) 28.7 cm
(d) 32.2 cm

Q91. If $\cos\theta = \sqrt{\frac{1}{7}\sqrt{\frac{1}{7}\sqrt{\frac{1}{7}----\infty}}}$, find $\tan\theta + \sin\theta$

(a) $13\sqrt{7}$

(b) $16\sqrt{3}$

(c) $\frac{32\sqrt{3}}{7}$

(d) $\frac{33}{19\sqrt{7}}$

Q92. Find $\sin^2 1 + \sin^2 3 + \sin^2 5 + ---- \sin^2 89$
(a) 21
(b) 22
(c) 21 ½
(d) 22 ½

Q93. If $\csc\theta + \sin\theta = 4$, then find $\cot^2\theta - \cos^2\theta$
(a) 11
(b) 14
(c) 12
(d) 8

Q94. If $(2x)\cos\theta + (1-x^2)\sin\theta = 1 + x^2$, find $\tan\theta = ?$
(a) $\frac{1-x}{2-x^2}$
(b) $\frac{1-x^2}{1+x^2}$
(c) $\frac{2x}{1+x^2}$
(d) $\frac{1-x^2}{2x}$

Q95. Find $\left(\frac{\tan\theta+\sec\theta-1}{\tan\theta-\sec\theta+1}\right)\frac{1}{\sec\theta}$
(a) $\cos\theta$
(b) $1 + \sin\theta$
(c) $1 - \sin\theta$
(d) $\sec\theta$

Q96. If $\csc\theta = 6x$ and $\cot\theta = \frac{1}{6x}$, find $36x^2 + \frac{1}{36x^2}$

(a) 1

(b) 2

(c) $\sqrt{5}$

(d) $\sqrt{3}$

Q97. If a secθ – b tanθ = c, find a tanθ – bsecθ

(a) $\sqrt{c^2 - a^2 + b^2}$

(b) $\sqrt{c^2 + a^2 + b^2}$

(c) $\sqrt{c^2 + a^2 - b^2}$

(d) $\sqrt{c^2 - a^2 - b^2}$

Q98. Find $\sin^2 7\frac{1}{2} + \cos^2 82\frac{1}{2} + \sin^2 81\frac{1}{2} + \cos^2 8\frac{1}{2}$

(a) 2

(b) -1

(c) 1

(d) 0

Q99. Two points A and B are at a distance of 49m and 121m respectively from the base of a building and on a straight line. If the angle of elevation of the top of the building from A and B are complementary. Find the height of building?

(a) 77 m

(b) 88 m

(c) 99 m

(d) 110 m

Q100. A spherical balloon of radius 14 cm, subtends an angle of 60° at the eye of an observer on the ground, while the angle of elevation of its centre is 45° find the height of its centre.

(a) 12$\sqrt{5}$ cm

(b) 22$\sqrt{2}$ cm

(c) 26$\sqrt{3}$ cm

(d) 14$\sqrt{2}$ cm