CAREER POWER™
AN IIT/IIM ALUMNI COMPANY

MEMORY BASED SSC CGL Tier-II 2018

QUANT MOCK

1. A certain amount is divided into 3 people. X gets 2/7 of what Y gets and Y gets 4/9 of what Z gets.. then by how much amount more Z gets than X
2. What is the rate of interest if the Simple interest is 8000 and the compound interest is 8164.. for two years.
3. What is the number of months which amounts to Rs___ compounded semi annually at the rate of 20%
4. If the ratio of curved surface area and total surface area of a cylinder is 2:1.. then find out the volume of the cylinder
5. Find the number divisible by 253 between 1000 and 9999.
6. Two trains having speed _ km/h and _ km/h.If second train reaches destination late by 8 minutes than first one. Due to some technical failure on first train it now reaches destination late by 12 minutes. find out the distance between the two station?
7. What is the unit digit of the sum of first 111 whole numbers?
8. If a cuboid having sides 30×50×40 is divided into 8 equal parts by cutting 3 times. then find out the total surface area of all the parts
9. A sphere is put inside a hollow cone having base radius r. Then find out the ratio between the radius of sphere and the hollow cone
10. If (a+b)/c=7/9 and (b+c)/a=11/5. then find the value of c?
11. A man invested a sum of money at compound interest. It amounted to Rs. _____ in 2 years and Rs. _____ in 3 years. Find the
12. The compound interest on Rs. _____ at _____ % per annum for x years is Rs. _____ . The value of n is
13. The compound interest on Rs. _____ at _____ % per annum for 1 ½ years, interest being compounded semi-annually is
14. Find the rate percent per annum is Rs. _____ amounts to Rs. _____ in 3 years with interest being compounded annually.
15. If $x + y + z = 0$ $\frac{3y^2+x^2+z^2}{2y^2-xz} = ?$
16. If $x_1x_2x_3 = 4(4 + x_1 + x_2 + x_4)$ Find , $\left(\frac{1}{2+x_1} + \frac{1}{2+x_2} + \frac{1}{x+x_{30}} = ?\right)$
17. If $x^3 + y^3 + z^3 = 3\ (1 + xyz)$ P = y + z – x Q = z + x – y R = x + y – z Find $P^3 + Q^3 + R^3 - 3PQR$

18. If $a^3 + 3a^2 + 9a = 1$ Find $a^3 + \frac{3}{a} = ?$

19. If $3x + 5y + 7z = 49$ $9x + 8y + 212 = 126$ Find $y = ?$

20. If x, y, z are real no. if $x^3 + y^3 + z^3 = 13$, $x + y + z = 1$, $xyz = 1$ Find $xy + yz + zx = ?$

21. If $P = 7 + 4\sqrt{3}$ $PQ = 1$, Find $\frac{1}{P^2} + \frac{1}{Q^2} = ?$

22. A and B are positive numbers. If $A + B + AB = 65$. Find the difference between A and B. (A, B ≤ 15)

23. If $\frac{a+b}{c} = \frac{6}{5}, \frac{b+c}{a} = \frac{9}{2}$. Find $\frac{a+c}{b} = ?$

24. If α and β are the roots of equation $x^2 - x + 1$, then find the equation having roots $\alpha^3 + \beta^3$

25. $\frac{(\sin x+\sin y)(\sin x-\sin y)}{(\cos x+\cos y)(\cos y-\cos x)} = ?$

26. $\tan^2 (90 - \theta) - \sin^2 (90 - \theta)] \operatorname{cosec}^2 (90 - \theta). \cot^2 (90 - \theta)$

27. $\sin (B - C). \cos (A - D) + \sin (A - B). \cos (C - D) + \sin (C - A). \cos (B - D)$

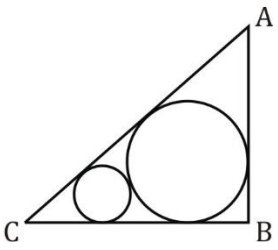
28. $\frac{\tan 5\theta - \tan 3\theta}{4 \cos 4\theta (\tan 5\theta - \tan 3\theta)}$

29. $\cos\left(\frac{180 - \theta}{2}\right). \cos\left(\frac{180 - 9\theta}{2}\right) + \sin\left(\frac{180 - 3\theta}{2}\right). \sin\left(\frac{180 - 13\theta}{2}\right)$

30. ABCD is a square whose side is 4 cm. P is a point on the side AD. Minimum value of BP + CD

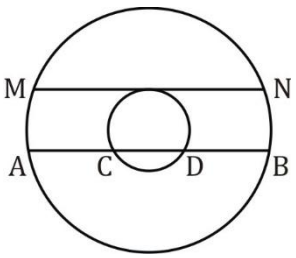
31. The radius of two circles is 3 cm and 4 cm. The distance between the centre of the circle is 10 cm. What is the ratio of the length of direct common tangent to transverse common tangent ?

32. ABC is a right angle triangle ∠ABC = 80°, ∠ACB = 60°. If the radius of smaller circle is 2. Find the radius of bigger circle.

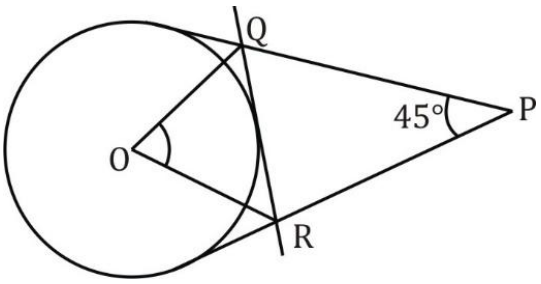


33. AB and AC are two tangents of a circle whose radius is 6 cm. If ∠BAC = 60°. Find $\sqrt{AB^2 + AC^2} = ?$

34. AB = 30, CD= 24 , MN = ?,



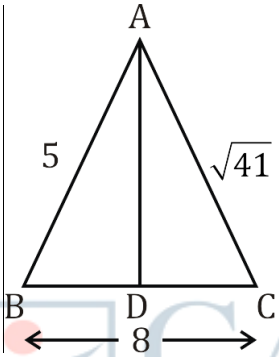
35. Find ∠QOR = 67.5°



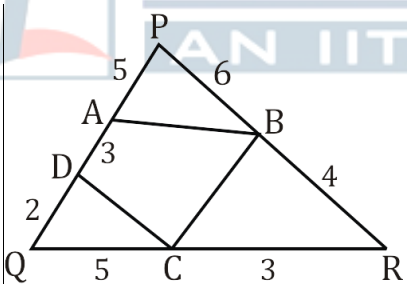
36. ABC is a right angled Δ. ∠BAC = 90°, ∠ACB = 60°. Find the circum-radius to AB.

37. ΔABC ~ ΔPQR. AB : PQ = 7 : 3. AD →median on BC. PS→ median on QR. Find $\left(\frac{BD}{QS}\right)^2$

38. ABC is a triangle AB = 5 , AC = $\sqrt{41}$, AD⊥BC. Area of ΔABD

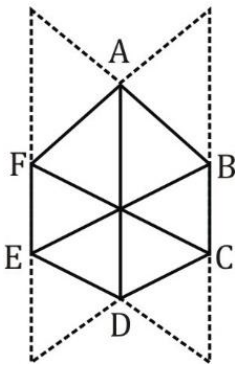


39. Find area of ABCD = ?

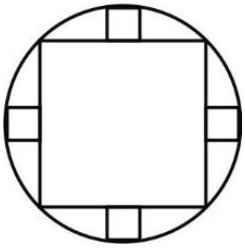


40. L = 8 cm, b = 6 cm rectangle is cut on its four vertices. Such that tense is regular octagon. Find its side.

41. ABCDEF is a regular hexagon of side 6 cm. APF, QAB, DCR, DES all are equilateral Δ



42. Radius of circle $14\sqrt{2}$ PQRS is a square. EFGH, ABCD, WXYZ, LMNO are four square. Find area of smaller square.



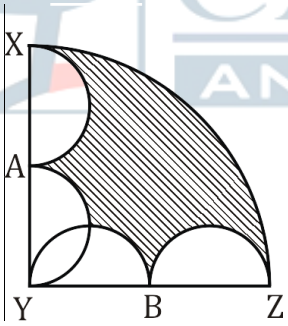
43. A chord is drawn to Two concentric circles. Length of chords are 4 and 16. What's is the difference of the square of radii of both circles.

44. A mixture contains acid and water in the ratio 11:2. If 35 liter of water is added quantity of acid becomes twice of water. What's the initial quantity of acid.

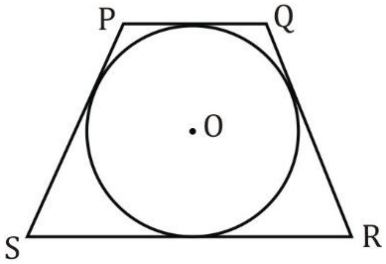
45. Average of the number from 100 to 400 which are divisble by 13.

46. A man buys 5 sarees of avg cost 2250. If he had bought 3 more sarees the avg cost would have been 2750. What's the avg cost of all sarees together.

47. 4 Equal semicircle are drawn in a quarter as shown in fig. If YB = 7 cm. find the area of shaded region.



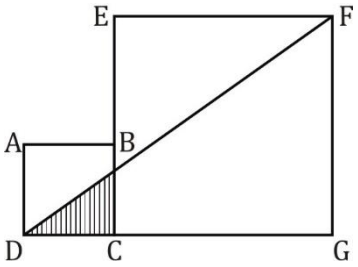
48. A circle of radius 9 cm is inscribed in a quadrilateral PQRS. If ∠PSR = ∠QRS = 60° and ∠SPQ = ∠PQR = 120°. Find the perimeter of PQRS.



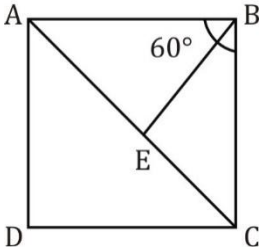
49. A shopkeeper marked up his good by 125% and allowed a discount of 25%. If the selling price of good is rs64p, find the cost price of the good.

50. A point made an angle of elevation to the top of a tower with tangent of 3/4. If point shifts 300 meters towards tower then the tangent becomes 4/3. What is the height of the tower?

51. ABCD & EFGC are square with side 8 cm and 20 cm. Find Ar(ΔBCD)



52. ABCD is a square of side 8 cm and ∠ABE = 60°. Find the area of ΔABE.



53. Two man starts walking towards each other with speed of 21 km/hr and 24 km/hr. If they meet after 1 hr 12 mins, What's the distance between them initially.

54. If a cube is cut in 27 equal cubes. What's the percentage change in the total surface area.

55. A cylinder of height 8 cm and radius 3.5 cm is perfectly put inside of another cylinder with their axis perpendicular to each other. What's the radius of another cylinder.

56. If a no is increased by 20 it becomes 116% of itself. Find the number?

57. A B C can do a work in 7.5 days. C is thrice as good as A. B working alone can do the same work in 15 days. In how many days A and C together can complete the same work.

58. Speed of a boat going downstream is 30 km/hr while 18 km/hr going upstream. Find the average speed of the boat.

59. If the Speed of a bus without stoppage is 60 km/hr and 45 km/hr with stoppages. For how many minutes the bus stops per hour.

60. Area of a hexagon is equal to the area of a square. Find the ratio of their perimeters.

61. Base radius of a cylinder, hemisphere and cone is same and they all have equal height of $2\sqrt{3}$. Then find the ratio of their total surface areas.

62. The lowest common multiple of 1728 and K is 5184. Then find the number of possible value of K.

63. If one of the quadratic equation of $ax^2 + bx + c = 0$ is $5 + \sqrt{3}$. Find $(a^2 + b^2 + c^2)/ (a + b + c)$.

64. Two equal spheres are put in a cube of side $12 + 4\sqrt{3}$. Find the maximum possible volume of each sphere.

65. A sum is compounded annually. After two years amount is Rs 9600 and after 3rd year it amounts Rs 10270. Find a sum of Rs 15000 will amount to at same rate for 3 years.

66. If $x^2 - 4x + 1 = 0$, find $x^9 + x^7 - 196x^5 - 196x^3$

67. A, B and C invested in a business in the ratio of 4:5:7. C is a sleeping partner, so his share of profits will be half of what it would have been if he were a working partner. If they make a profit of Rs 36000 of which 25% is reinvested in the business. How much does B gets?

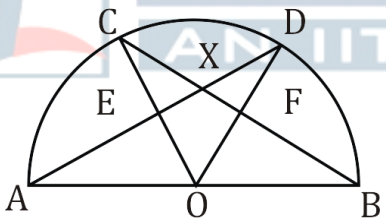
68. Find the number of possible 3 digits odd numbers with all odd digits in it.

69. The difference between compound interest if a sum is invested yearly and quarterly at a rate of 15% is Rs 4.728. find the sum.

70. If $P = 7 + 4\sqrt{3}$ and PQ = 1, then find $\frac{1}{p^2} + \frac{1}{Q^2}$.

71. $\frac{1}{1\times2} + \frac{1}{1\times4} + \frac{1}{2\times3} + \frac{1}{2\times7} + \cdots$ up to 20 terms. Find the sum of the series.

72. If angle COD = 64°, then find angle CEA.



73. Total supply of milk (20,00,000 liters) in 6 different cites A, B, C, D, E and F by two distributors P and Q.

Cities	Percentage Distribution	% supply by P
A	16	60
B	22	80
C	17	40
D	9	30
E	11	65
F	23	55

1. Values are not exact as come in exam.