megaleap
Comprehensive MCA Entrance Coaching

SANMACS INDIA

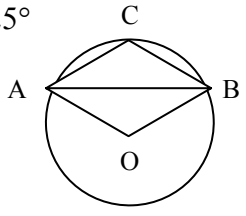
➤ 309 & 313 PRATAP CHAMBERS, GURUDWARA ROAD, KAROL BAGH, DELHI - 110005 PH.: 28757911, 28757630, 32917966

➤ SAI SANMACS PLAZA, PLOT NO. - 6A, COMMUNITY CENTER, DDA, SECTOR - 8, ROHINI, DELHI - 110085 PH.: 32458354, 32522575

e-mail : info@sanmacs.com website: www.sanmacs.com

Rewarding Career **Test Code: MTNCL – III** **Questions: 25** **Max. Time: 1 Hr.**

1. Three teachers brought 62, 132 and 137 books and divided them equally to all the students, How many students are there in school if number of books left with all the taechers after distribution is the same?
   (a) 40 (b) 42
   (c) 35 (d) data not sufficient
2. Which of the following is false if $ab < 0$
   (a) $|a| < |b|$ iff $a^2 < b^2$ (b) $|a+b| < |a| + |b|$
   (c) $|a-b|^2 = (a-b)^2$ (d) $|a-b| < |a| - |b|$
3. A balll is dropped from a height of 20m. If the height of fall is twice the height of bounce. What is the total distance traveled by the ball before it comes to rest?
   (a) 80 m (b) 120 m (c) 100 m (d) 60 m
4. State the false statement
   (a) Area of all the four triangles formed by joining the mid points of sides of an equilateral triangle are equal
   (b) If P(-1, -3), Q($0, 2$), R(x, 1) are the vertices of a rectangle PQRS, then value of x must be 5.
   (c) Given $a \neq b$, then no values of a and b satisfies $a^2 + b^2 = 0$.
   (d) If x and y are positive integers, the set of equations, $y \geq 2$ and $|x-4| + |y-2| \leq 2$ has 5 solutions.
5. Find the reflex angle AOB in degrees if $\angle CAB = \angle CBA = 25°$
   (a) 260
   (b) 100
   (c) 270
   (d) 90

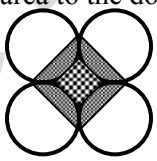


6. Riju had a children's party at home. She bought 2 apples for each child invited. One-fourth of the total kids invited didn't come. 15 boys came, and the surplus provided just one extra apple for each girl. How many apples did Riju buy?
   (a) 100 (b) 120 (c) 32 (d) 128
7. What is the angle between two hands of a watch if 20 min earlier, the angle was 20 degree
   (a) 10 (b) 20 (c) 30 (d) none
8. On a circular cycle track, two cyclist are going at constant speeds. When they go in opposite directions, they meet every 10 sec, when they go in same directions they meet every 170 seconds. What is the speed of the faster cyclist if the circular track is 170 m long.
   (a) 8 m/s (b) 7 m/s (c) 9 m/s (d) 10 m/s
9. Five years ago the average age of a family of six members was 20 years. A baby is born and now the average age is 22 years. How old is the baby?
   (a) 2 (b) 3 (c) 4 (d) None
10. The minute hand of the clock overtakes the hour hand at interval of 63 minutes of correct time. How much does the clock lose or gain in a day.
    (a) 55 min (b) 55 7/11 min
    (c) 56 8/77 min (d) none
11. Find the result of the following addition

    T E S S
    S E E
    - - - -

    S, E and T are different integers. SE is the square of E and STET is also a perfect square.
    (a) TESS (b) TTTT
    (c) SSSS (d) EETT
12. How much does a watch gain or loose per day, if its hands coincide every 66 minutes.
    (a) lose 11 min 54 6/121 sec
    (b) gain 11 min 54 6/121 sec
    (c) neither gain nor lose
    (d) loses 11 minutes
13. The value of $\sin(\pi/14)\sin(3\pi/14)\sin(5\pi/14)$ is
    (a) 1/16 (b) 1/8 (c) 1/2 (d) None

14. On glancing through the morning paper it was noticed that 4 pages were missing. One of the missing page was 21. The back page of the paper was 28 what are the other 3 missing.
    (a) 7, 8, 22 (b) 7, 8, 20
    (c) 8, 9, 20 (d) 8, 9, 22
15. The area of a regular polygon of n-sides is
    (a) $\sin(2\pi/n)nR^2/2$ (b) $\tan(\pi/n)nr^2$
    (c) $\sin(2\pi/n)nr^2/2$ (d) $\tan(\pi/n)nR^2$
16. The top of the 24-m-high flagstaff makes 30 degree angle of elevation with the top of a tree and that of 60 degree with the bottom of the tree. Find the height of the tree (in m).
    (a) 15 (b) 16 (c) 8 (d) 12
17. If n is a prime number greater than 7, then $n^6 - 1$ is divisible by
    (a) 8 only (b) 7 only
    (c) both 7 and 8 (d) none of these
18. If we have $f[g(x)] = g[f(x)]$ then which of the following is true.
    (a) $f[g[f[g[f[g(x)]]]]] = f[g[g[f[f[g[g(x)]]]]]]$
    (b) $g[f[f[f[g[g[g(x)]]]]]] = f[f[f[g[g[g(x)]]]]]$
    (c) $f[g[f[g[f[g[f[g(x)]]]]]]] = f[f[g[g[g[f[f(x)]]]]]]$
    (d) None
19. Which of the following is false
    (a) $\log\left(x + \sqrt{1+x^2}\right)$ is an odd function
    (a) If $a_{n+1} =^6 a_n + 5,\ a_1 = 2$ then
    $a_{200} = 3^{199} - 5$
    (b) Last two digits of a 51-digit number 123456789101112131415..... are 30.
    (c) none of these
20. In the figure four circles are placed such that each touches the other two.
    Find the ratio of the shaded area to the dotted area
    (a) 5:2
    (b) 1:1
    (c) 4:3
    (d) none of these



21. A robot moves on a graph sheet with X and Y axes. The robot is moving by feeding it with a sequenc of instructions. The different instructions that can be used in moving it, and their meanings are**:**
    GOTO(X, Y) **:** moves to the point with coordinate (X, Y) irrespective of its position.
    WALKX(p) **:** moves parallel to X axis through a distance p in the positive direction if p is positive, and negative direction if p is negative.
    WALKY(p) **:** moves parallel to Y axis through a distance p in the positive direction if p is positive, and negative direction if p is negative.
    The robot reaches point (6, 6) when a sequence of three instructions is executed, the first of which is GOTO(X, Y), the second WALKX(2) and third WALK(4). What is the value of X and Y?
    (a) 2, 4 (b) 0, 0 (c) 4, 2 (d) 2, 2
22. A person deposits Rs. x at compound interest of 20% per annum for 2 years. Another person deposits Rs. 2x at compound interest of 10% per annum for 2 years. What is the difference in the interests got by them.
    (a) 2% of x (b) x^2 (c) 100% of 2x (d) none
23. The circle is inscribed in a regular octagon. The same circle circumscribes a regular hexagon. Find the ratio of area circle, hexagon and octagon.
    (a) $2\pi : 3\sqrt{3} : 16\left(\sqrt{2}-1\right)$ (b) $\pi : 3\sqrt{3} : 4\left(\sqrt{2}-1\right)$
    (c) $2\pi/3 : 2\sqrt{3} : 4\left(\sqrt{2}-1\right)$ (d) none of these

Directions (Q. 24 – Q. 25): Consist of a phrase followed by 4 alternatives. Choose the alternative that expresses the meaning of the phrase in the word.

24. Great change of form or character.
    (a) Catastrophe (b) Atrophy
    (c) Metamorphosis (d) Ephemeral
25. Government by the rich
    (a) Aristocracy (b) Autocracy
    (c) Anarchy (d) Bureaucracy