CAT 2023 Question Paper (Memory-Based) Slot 1- QA

Question 1. Geeta sells A → 20% (Profit) and B → 10% (Loss) at the same sp. If she increases SP such that A and B still sold at an equal price and profit of 10 % made on B, then profit made on A will be?

A. 45%
B. 47%
C. 42 %
D. 49%

Answer. 47%

Question 2. Brishti went on a 8-hour trip in a car, before the trip the car had traveled a total of x kms till then, where x is a whole number and is palindromic, At the end of his trip the car had had traveled a total of 26862 km. If Bristi never drove at more than 110 km/h, then the greatest possible average speed at which see dove is?

- 90
- 80
C. 110
D. 100

Answer. 100

Question 3. If x and y are real numbers such that $x^2 + (x-2y-1)^2 = 4y(x+y)$, here the value x-2y is?

- 1
- 2

- **0**

D

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1

Answer. 1

Question 4. Let Alpha and Beta be the two distinct roots of $2x^2-6x+k=0$, such that (Alpha+beta) and alpha * beta are the distinct roots of the equation $x^2+px+p=0$, then, the value of 8(k-p)?

Answer. 6

Question 5. Find the number of natural numbers less than (or up to) 1000 having different digits.

Answer. 738

Question 6. $(1134)^n$ is divisible by 168. $(168)^m$ is divisible by $(1134)^n$. Find the minimum value of n + m

Answer. 15

Question 7. Salaries of A B C are in ratio 5:6:7 .Their salaries are increased in 1st year by 20% 25% and 20%. In 2nd year, Then the salaries of A and C are again increased by 40% and 25%.The new salary of B is equal to the mean of salaries of A and C.
What is the approximate percentage increase in the salary

of B. Answer. 26%

Question 8. How many number of integral solutions of the equation $2|x|(x^2+1) = 5x^2$?

Answer. 3

Question 9. Arvind went from point A to B and Surubhi from B to A. They met somewhere between continuing their journey. Arvind took 6 hours and Surubhi took 24 hours to reach the respective destinations after meeting. If Aravind traveled 54 Kmph, what is the distance AB.

Answer. 972 Kms

Question 10. The minor angle between hours hand and minutes hand of a clock was observed at 8:48 am. The minimum deviation (in min) after 8:48 am on when angle increased by 50% is?

A. 24/4
B. 4
C. 36/11
D. 2

Question 11. In an Exam average marks of 4 girls and 6 boys is 24, the marks scored by every girl is same and every boy is same and the marks scored by any girl is almost double the marks scored by any boy and the mark scored by girl is not less than any boy, then the number of possible different integer values of the total marks of 2 girls and 6 boys is?

A. 19
D. 20
B. 21
C. 22

Question 12. The equation $x^3+(2r+1)x^2+(4r-1)x-2=0$ has 2 as one of the roots. If the other two roots are real then the minimum non-negative integer value of "r" is?

Question 13. A mixture P is formed by removing a certain amount of coffee from a coffee jar and replacing the same amount with cocoa powder and the same amount is again removed from P and replaced with the same amount of cocoa powder to form a mixture Q. If the ratio of coffee and cocoa in Q=16:9. Then the ratio of coca in with P:Q is?

A. 1:3
B. 4:9
C. 1:2
D. 5:9

Question 14. P travels from A to B, Q travels from B to A after Meeting, P reaches B in 6 hours and Q reaches A in 24 hours. If speed of P is 54 kmph, find distance between AB

Question 15. A container containing some amount of powder is replaced with cocoa powder. This process is again repeated and the ratio of power and cocoa powder after the process is 16:9. What was the initial ratio? Right angle triangle ABC ab altitude = 5 cm, base 12 two-point p and q on base such that area abc is 1.5 times apb find pa?

Question 16. 8 questions from algebra- logarithm, progression, modulus, surds

Question 17. Total 9 Arithmetic questions

Question 18. Geometry- 3 questions- 1 each from triangles, quadrilaterals, circles

Question 19. Harmonic mean combined with the time and distance- One Question