Mock Test 2

Quantitative Aptitude Set-2

Question 1/22:

Find the value of x, if $\log_4 32 + \log_4 128 = \log_2 16 + \log_2 \sqrt{x}$

Type in your answer in the input box provided below the question

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Question 2/22:

If a is a non-zero real number and b is a positive real number and $2ba^4 + ba^3 + a^2 + ba + 2b = ka^2$, then the least possible value of k is

Select the correct alternative from the given choices

Options:

(a) 2b+1

(b) 4b+1

(c) 8b+1

(d) b+1

Question 3/22:

Along the periphery of a circular park of radius 80 m, are located four Gulmohar trees at points P, Q, R, S. Supandi, a regular visitor to the park, notices that the line joining points P and R perpendicularly intersects the line joining point Q and S at point O. Find $PS^2 + QR^2$.

Select the correct alternative from the given choices

Options:

(a) 6400

(b) 25600

(c) 12800

(d) 28800

Question 4/22:

A man cheats while buying as well as while selling. While buying he takes 10% more than what he pays for and while selling he gives 20% less than what he claims to. Find his profit percent, if he sells at 9.09% below the cost price of the claimed weight.

Options:

(a) 19.81%

(b) 20%

(c) 37.5%

(d) 25%

Question 5/22:

A, B and C participated in a race in which A gave B a head start of 200 seconds and C gave A a head start of 300 seconds. A overtook B at a distance of 300 meters from the start of the race and C overtook A at a distance of 400 meters from the start of the race. If the speeds of A and C are in the ratio 1 : 4, what is the ratio of the speeds of A, B and C?

Options:
(a) 2 : 1 : 8
(b) 5 : 3 : 20
(c) 6 : 5 : 24
(d) 7 : 4 : 28

Question 6/22:
PQRS is a trapezium, with the lengths of the parallel sides PQ and RS being 9 cm and 27 cm respectively. If the measures of the angles ∠PSR and ∠QRS are 60° and 45° respectively, what is the area (in sq.cm.) of the trapezium PQRS?
Options:
(a) 162(3 - √3)
(b) 272(4 - √3)
(c) 81(3 - √3)
(d) 27(3 - √3)

Question 7/22:
A microbiologist studied two types of bacteria – Type I and Type II – and observed that the number of Type I bacteria doubled every four minutes, whereas the number of Type II bacteria tripled every five minutes. If at the end of 20 minutes there were a total of 2000 bacteria, then what was the difference between the number of bacteria of the two types initially?
Options:
(a) 4
(b) 6
(c) 8
(d) 9

Question 8/22:
If there are five more men in a workforce, they will take 16 days less to complete a job. Instead, if there are 12 more men in it, they will take 30 days less to complete it. Find the ratio of the number of men and the time taken (in days) to complete the given work.
Options:
(a) 1 : 6
(b) 1 : 5
(c) 1 : 4
(d) 3 : 10

Question 9/22:
If the sum of a three-digit number and the number obtained by reversing the order of the digits is 1232, then find the tens digit of the number.
Options:
(a) 9
(b) 2
(c) 3
(d) 1

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Question 10/22:

At a particular instant, the angle of elevation of a bird, as observed from a point P, 200 m above a lake, is found to be 30°. At the same instant, the angle of depression of the bird's reflection in the lake, as observed from the same point P, is found to be 60°. Find the height (in metres) at which the bird is flying above the lake at the given instant. Note: Assume that the bird and its reflection are equidistant from the surface of the lake.

Type in your answer in the input box provided below the question

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Question 11/22:

A carton manufacturing company produces two kinds of cartons – standard and deluxe. The profit margin on a standard carton is ₹60, and that on a deluxe carton is ₹90. Every carton must be processed on machine A and on machine B. The processing times (in hours per carton) on the two machines are as follows:If the total time available on machine A is 4200 hours and on machine B is 7200 hours, the production plan which maximizes the total profit is:

Type of carton	Time required (hours/carton)	
	Machine A	Machine B
Standard	12	18
Deluxe	15	30

Options:

(a) 120 standard cartons, 180 deluxe cartons.

(b) 100 standard cartons, 200 deluxe cartons.

(c) 200 standard cartons, 120 deluxe cartons.

(d) 150 standard cartons, 120 deluxe cartons.

Question 12/22:

A fruit shop sells apples in boxes of different sizes. The selling price of each apple is ₹5 per fruit. The minimum number of apples in a box is 100 and for every additional 25 apples added to the box, the price of the entire box goes down by 25 paise per apple. What should be the number of apples in the box that would maximize the selling price of the box?

Type in your answer in the input box provided below the question.

Question 13/22:

Find the units digits of the LCM of $7^{3001} - 1$ and $7^{3001} + 1$.

Options:

(a) 8

(b) 6

(c) 9

(d) 4

Question 14/22:
P and Q are two points in a plane, separated by a distance of 10 cm. How many lines in the plane are at a distance of 7 cm from P and 3 cm from Q?
Options:
(a) 2
(b) 4
(c) 1
(d) 3

Question 15/22:
If the external angles in degrees, of a convex n-sided polygon, are all integers, which are in arithmetic progression, how many values are possible for n?
Options:
(a) 16
(b) 14
(c) 10
(d) 8

Question 16/22:
Find the total number of ways in which one can wear three distinct rings on the five fingers of one's right hand, given that one is allowed to wear more than one ring on a finger.
Type in your answer in the input box provided below the question

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Question 17/22:
If a, b and c are positive integers such that ,what is the minimum possible value of a + b + c?

$$a^{bc} = 256$$

Type in your answer in the input box provided below the question

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Question 18/22:
There are 88 students in a class. Each student likes at least one of the three games Cricket, Football and Volleyball, while 4 students like all the three games. The number of students who like only Volleyball is twice the number of students who like only Cricket. The number of students who like only Cricket and Volleyball, the number of students who like only Football and Volleyball and the number of students who like only Cricket and Football are in the ratio 1 : 2 : The number of students who like only Football and Volleyball and those who like only Football are in the ratio 2 : 3. Find the maximum possible number of students who like only Cricket and Football.
Type in your answer in the input box provided below the question

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Question 19/22:
If $f(x) + f(y) = f(x + y)$, where $f(t) > 0$ for any $t > 0$, find the value of $f(1) + f(3) + f(5) + f(7) + \ldots + f(19)$, given $f(10) =. \frac{1}{8}$

Options:
(a) 3/4
(b) 4/5
(c) 5/4
(d) 7/5

Question 20/22:
N is the least natural number which, when divided by k, k + 1, k + 2 successively, where k is a natural number, leaves a remainder of (k – 1), k, (k + 1) respectively. Which of the following is not a possible value of N?
Options:
(a) 59
(b) 119
(c) 11
(d) 23

Question 21/22:
If X = {0, 1, 2, 5, 6, 8, 9}, how many six-digit numbers divisible by 3 can be formed using the elements of X, without repetition?
Type in your answer in the input box provided below the question

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Question 22/22:
How many integral values of x satisfy the equation x = |2x – |120 – 3x||?
Options:
(a) 3
(b) 1
(c) 2
(d) More than 3

Mock Test 2

Answer Key:

1. ***16***
2. **(a) 2b+1**
3. **(b) 25600**
4. **(d) 25%**
5. **(b) 5 : 3 : 20**
6. **(a) 162(3 - √3)**
7. **(b) 6**
8. **(c) 1 : 4**
9. **(d) 1**
10. **400 meters**
11. **(c) 200 standard cartons, 120 deluxe cartons.**
12. **324 apples**
13. **(d) 4**
14. **(d) 3**
15. **(c) 10**
16. **21**
17. **7**
18. **18**
19. **(c) 5/4**
20. **(c) 11**
21. **600**
22. **(a) 3**