

CAT 2015 QA Slot 1 Question Paper

Time Allowed :3 Hours

Maximum Marks :300

Total questions :100

General Instructions

Read the following instructions very carefully and strictly follow them:

1. **Duration of Section:** 40 Minutes
2. **Total Number of Questions:** 22 Questions (as per latest pattern, may vary slightly)
3. **Section Covered:** Quantitative Aptitude (QA)
4. **Type of Questions:**
 - Multiple Choice Questions (MCQs)
 - Type In The Answer (TITA) Questions – No options given, answer to be typed in
5. **Marking Scheme:**
 - +3 marks for each correct answer
 - -1 mark for each incorrect MCQ
 - No negative marking for TITA questions
6. **Syllabus Coverage:** Arithmetic, Algebra, Geometry, Number System, Modern Math, and Mensuration
7. **Skills Tested:** Numerical ability, analytical thinking, and problem-solving

1. If the sum of two numbers is 15 and their product is 56, what is the sum of their reciprocals?

- (a) $\frac{15}{56}$
 - (b) $\frac{56}{15}$
 - (c) $\frac{1}{15}$
 - (d) $\frac{1}{56}$
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2. A shopkeeper sells an item at a 20% discount on the marked price and still makes a 25% profit on the cost price. If the cost price is Rs. 400, what is the marked price?

- (a) Rs. 500
 - (b) Rs. 600
 - (c) Rs. 625
 - (d) Rs. 700
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3. The ratio of the speeds of two trains is 3:4. If the second train covers 400 km in 5 hours, what is the speed of the first train?

- (a) 60 km/h
 - (b) 80 km/h
 - (c) 90 km/h
 - (d) 120 km/h
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4. If $a + b + c = 12$ and $a^2 + b^2 + c^2 = 50$, what is the value of $ab + bc + ca$?

- (a) 47
 - (b) 48
 - (c) 49
 - (d) 50
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5. A man travels 300 km, partly at 60 km/h and partly at 80 km/h. If the total time taken is 4.5 hours, how many kilometers did he travel at 60 km/h?

- (a) 120 km
 - (b) 150 km
 - (c) 180 km
 - (d) 200 km
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6. The HCF of two numbers is 12, and their LCM is 144. If one number is 36, what is the other number?

- (a) 48
 - (b) 60
 - (c) 72
 - (d) 96
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7. A pipe can fill a tank in 6 hours, and another pipe can empty it in 8 hours. If both pipes are opened together, how long will it take to fill the tank?

- (a) 24 hours
 - (b) 36 hours
 - (c) 48 hours
 - (d) Never fills
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8. If $x^2 - 5x + 6 = 0$, what is the value of $x^3 - 3x^2 + 2x$?

- (a) 6
 - (b) 12
 - (c) 18
 - (d) 24
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9. A boat travels 36 km downstream in 3 hours and 24 km upstream in 3 hours. What is the speed of the boat in still water?

- (a) 10 km/h
- (b) 11 km/h
- (c) 12 km/h
- (d) 13 km/h

10. If $\log_2 x + \log_4 x = 5$, what is the value of x ?

- (a) 4
 - (b) 8
 - (c) 16
 - (d) 32
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11. A sum of money doubles in 4 years at a certain rate of compound interest. In how many years will it become 8 times?

- (a) 8 years
 - (b) 10 years
 - (c) 12 years
 - (d) 16 years
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12. The area of a circle is 154 cm^2 . What is the circumference of the circle?

- (a) 22 cm
 - (b) 44 cm
 - (c) 66 cm
 - (d) 88 cm
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13. If $3x + 4y = 12$ and $x - y = 1$, what is the value of $x + y$?

- (a) $\frac{25}{7}$
 - (b) $\frac{16}{7}$
 - (c) $\frac{9}{7}$
 - (d) $\frac{7}{2}$
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14. A man invests Rs. 5000 at 5% simple interest per annum. How much interest will he earn after 3 years?

- (a) Rs. 750
- (b) Rs. 800
- (c) Rs. 850
- (d) Rs. 900

15. The sum of the first n terms of an arithmetic progression is $S_n = 3n^2 + 2n$. What is the 5th term?

- (a) 15
 - (b) 29
 - (c) 19
 - (d) 21
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16. If $2^x = 3^y = 6^z$, what is the value of xy in terms of z ?

- (a) z^2
 - (b) $2z$
 - (c) $3z$
 - (d) $6z$
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17. A rectangular garden has a perimeter of 100 meters and an area of 600 m². What is the length of the garden?

- (a) 20 m
 - (b) 30 m
 - (c) 40 m
 - (d) 50 m
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18. What is the remainder when 3^{100} is divided by 7?

- (a) 1
 - (b) 2
 - (c) 3
 - (d) 4
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19. A and B can complete a work in 12 days, B and C in 15 days, and A and C in 20 days. How long will A alone take to complete the work?

- (a) 20 days
- (b) 24 days
- (c) 30 days
- (d) 36 days

20. The sum of the squares of three consecutive integers is 110. What is the smallest integer?

- (a) 5
 - (b) 6
 - (c) 7
 - (d) 8
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21. A car travels from A to B at 60 km/h and returns at 40 km/h. If the total time taken is 5 hours, what is the distance between A and B?

- (a) 100 km
 - (b) 120 km
 - (c) 150 km
 - (d) 180 km
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22. If the roots of the equation $x^2 - kx + 16 = 0$ are integers, what is the sum of the roots?

- (a) 4
 - (b) 6
 - (c) 8
 - (d) 10
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23. A shop sells two types of pens at Rs. 10 and Rs. 15 each. If 50 pens are sold for Rs. 650, how many pens of Rs. 10 were sold?

- (a) 20
 - (b) 25
 - (c) 30
 - (d) 35
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24. What is the probability of getting a sum of 7 when two dice are rolled?

- (a) $\frac{1}{6}$
 - (b) $\frac{1}{12}$
 - (c) $\frac{1}{9}$
 - (d) $\frac{1}{36}$
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25. The cost price of an article is Rs. 200. It is sold at a 10% discount on the marked price, yielding a 25% profit. What is the marked price?

- (a) Rs. 250
 - (b) Rs. 275
 - (c) Rs. 300
 - (d) Rs. 350
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26. If a, b, c are in geometric progression and $a + b + c = 21$, $abc = 216$, what is the value of b ?

- (a) 6
 - (b) 7
 - (c) 8
 - (d) 9
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27. A train travels 360 km at a uniform speed. If the speed had been 5 km/h more, it would have taken 1 hour less. What is the speed of the train?

- (a) 40 km/h
 - (b) 45 km/h
 - (c) 50 km/h
 - (d) 55 km/h
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28. If the area of a square is 64 cm^2 , what is the length of its diagonal?

- (a) 8 cm
 - (b) $8\sqrt{2}$ cm
 - (c) 16 cm
 - (d) $16\sqrt{2}$ cm
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29. A sum of Rs. 1000 is divided among A, B, and C in the ratio 2:3:5. How much does C get?

- (a) Rs. 400
 - (b) Rs. 450
 - (c) Rs. 500
 - (d) Rs. 550
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30. If $x^2 + y^2 = 25$ and $xy = 12$, what is the value of $x + y$?

- (a) 5
 - (b) 7
 - (c) 9
 - (d) 11
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31. A shopkeeper marks up an article by 25% and then offers a 20% discount. What is the net profit percentage?

- (a) 0%
 - (b) 5%
 - (c) 10%
 - (d) 15%
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32. The number of ways to arrange 5 distinct books on a shelf is:

- (a) 60
 - (b) 120
 - (c) 240
 - (d) 720
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