CAT 2016 QA Slot 2 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. The average price of 10 books is Rs. 12 while the average price of 8 of these books is Rs. 11.75. Of the remaining two books, if the price of one book is 60% more than the price of the other, what is the price of each of these two books?

(a) Rs. 5, Rs. 7.5

(b) Rs. 13, Rs. 20.8

(c) Rs. 16, Rs. 10

(d) Rs. 12, Rs. 14

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2. A cube of side 4 cm is painted on all its faces. If it is sliced into 1 cm cubes, how many 1 cm cubes will have exactly one face painted?

(a) 8

(b) 16

(c) 24

(d) 32

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3. In a triangle ABC, the lengths of the sides AB and AC are 17.5 cm and 9 cm respectively. Let D be a point on AB such that AD = 7 cm. What is the length of CD?

(a) 5 cm

(b) 6 cm

(c) 7 cm

(d) 8 cm

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4. A shopkeeper sells a product at a 20

(a) Rs. 50

(b) Rs. 100

(c) Rs. 120

(d) Rs. 150

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5. The sum of the ages of a father and his son is 45 years. Five years ago, the product of their ages was 124. What are their current ages?

(a) 36, 9

(b) 34, 11

(c) 32, 13

(d) 30, 15

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6. A person buys 12 articles for Rs. 12 and sells them at Rs. 12 for 10 articles. What is the profit percentage?

(a) 20%

(b) 25%

(c) 44%

(d) 50%

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7. If $\log_3 2, \log_3(2^x - 5), \log_3(2^x - 7/2)$ are in arithmetic progression, then what is the value of x?

(a) 2

(b) 3

(c) 4

(d) 5

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8. The cost of a pair of shoes varies directly as the square of its size. If a pair of size 5 costs Rs. 500, what is the cost of a pair of size 7?

(a) Rs. 960

(b) Rs. 980

(c) Rs. 1000

(d) Rs. 1020

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9. In a class of 50 students, 23 speak English, 15 speak Hindi, and 18 speak Tamil. 8 speak both English and Hindi, 11 speak both Hindi and Tamil, 6 speak both English and Tamil, and 5 speak all three languages. How many students speak exactly two languages?

(a) 10

(b) 12

(c) 14

(d) 16

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10. A and B run a 1 km race. If A gives B a start of 50 m and still beats him by 15 seconds, and if A gives B a start of 70 m and beats him by 10 seconds, find the time taken by A to run 1 km.

(a) 100 seconds

(b) 120 seconds

(c) 150 seconds

(d) 180 seconds

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11. The sum of the first n terms of an arithmetic progression is $3n^2 + 5n$. What is the first term of the series?

(a) 2

(b) 5

(c) 8

(d) 11

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12. A man can row at 5 km/h in still water. If the river flows at 1 km/h and it takes him 1 hour to row to a place and return, what is the distance he rows to the place?

(a) 1 km

(b) 2 km

(c) 2.4 km

(d) 3 km

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13. If a, b, c are in geometric progression, and $a, b, 2c$ are in arithmetic progression, then what is the common ratio of the geometric progression?

(a) 1

(b) 2

(c) 3

(d) 4

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14. A and B together can complete a work in 12 days, B and C together in 15 days, and C and A together in 20 days. In how many days can A alone complete the work?

(a) 20

(b) 30

(c) 60

(d) 80

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15. A car travels from A to B at 60 km/h and returns at 40 km/h. What is the average speed for the entire journey?

(a) 48 km/h

(b) 50 km/h

(c) 52 km/h

(d) 54 km/h

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16. In how many ways can 5 different books be arranged on a shelf if two particular books must be together?

(a) 24

(b) 48

(c) 120

(d) 240

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17. The area of a rectangle is 63 cm², and its perimeter is 32 cm. What is the length of the rectangle?

(a) 7 cm

(b) 9 cm

(c) 11 cm

(d) 13 cm

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18. If the roots of the equation $x^2 - 2px + p^2 - 1 = 0$ are real and distinct, what is the range of p?

(a) $p > 1$

(b) $p < -1$

(c) $p > 1$ or $p < -1$

(d) $-1 < p < 1$

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19. A bag contains 3 red, 4 white, and 5 blue balls. Two balls are drawn at random. What is the probability that both are of the same color?

(a) $\frac{19}{66}$

(b) $\frac{17}{66}$

(c) $\frac{15}{66}$

(d) $\frac{13}{66}$

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20. A man invests Rs. 10,000 at 5

(a) Rs. 11,576.25

(b) Rs. 11,500

(c) Rs. 12,000

(d) Rs. 12,100

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21. If $\sin\theta + \cos\theta = \sqrt{2}$, then what is the value of θ (in degrees)?

(a) 30

(b) 45

(c) 60

(d) 90

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22. A shopkeeper allows a discount of 10

(a) Rs. 150

(b) Rs. 160

(c) Rs. 170

(d) Rs. 180
