# CMAT 2018 Slot 2 Question Paper - January 20 Afternoon Session

## Quantitative Techniques and Data Interpretation

**1. What is the probability of getting a 'nine' or 'ten' on a single throw of two dice?**

(1) $\dfrac{2}{9}$

(2) $\dfrac{7}{36}$

(3) $\dfrac{1}{5}$

(4) $\dfrac{2}{7}$

**2. The length of a room exceeds its breadth by 2 meters. If the length be increased by 4 meters and the breadth decreased by 2 meters, the area remains the same. Find the surface area of its walls if the height is 3 meters.**

(1) $248m^2$

(2) $424m^2$

(3) $112m^2$

(4) $84m^2$

**3. A bus covers a distance of first 50 km in 40 minutes, next 50 km at a speed of 2 km per minute and the next 30 km at a speed of 1.0 km per minute. What is its average speed during the entire journey?**

(1) 61.5 kmph

(2) 55.06 kmph

(3) 82.1 kmph

(4) 80 kmph

**4. Three wheels making 60, 36 and 24 revolutions in a minute start with a certain point in their circumference onwards. Find when they will again come together in the same position.**

(1) 4 seconds

(2) 5 seconds

(3) 10 seconds

(4) Never

**5. A certain amount of money invested at 10% per annum compound interest for two years became Rs. 2000. What is the initial investment?**

(1) Rs. 856

(2) Rs. 1,625

(3) Rs. 1,653

(4) Rs. 1,275

**6. If the height of a right circular cone is increased by 200% and the radius of the base is reduced by 50%, then the volume of the cone**

(1) Remains unaltered

(2) Decreases by 25%

(3) Increases by 25%

(4) Increases by 50%

**7. An electric appliance is priced at Rs. 600 initially. Because of market recession, price was successively reduced three times, each time by 10% of the price after the earlier reduction. What is the current price?**

(1) Rs. 420

(2) Rs. 437.40

(3) Rs. 444.30

(4) Rs. 478

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**8. Below given is the Table showing Age-wise Ownership of mobiles:**

| Brand | Up to 1 year old | 1-2 years old | 2-3 years old | More than 3 years old |
|---|---|---|---|---|
| LG | 15% | 45% | 40% | |
| SAMSUNG | 5% | 15% | 25% | 55% |
| NOKIA | 10% | 10% | 10% | 70% |
| SONY | 25% | 55% | 20% | |
| MICROMAX | 15% | 50% | 20% | 15% |

**If 1 crore mobiles were sold last year, how many LG sets were sold?**

(1) 10,000

(2) 12,500

(3) 15,000

(4) Cannot be determined

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**9.** $\sqrt{188 + \sqrt{51} + \sqrt{169}}$

(1) 16.4

(2) 14.4

(3) 16

(4) 14

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**10. In what time will Rs. 6,250 amount to Rs. 6,632.55 at 4% compound interest payable half-yearly?**

(1) 1 year

(2) $\frac{3}{2}$ years

(3) 3 years

(4) $\frac{5}{2}$ years

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**11. Expenditures of a Company (in Lakh Rupees) Per Annum Over the given Years was as under. What is the average salary expenditure (in Lakh Rupees) per annum during this period?**

| year | Salary | Fuel and Transport | Bonus | Interests on loans | Taxes |
|------|--------|--------------------|-------|--------------------|-------|
| 2008 | 576 | 196 | 6 | 25.4 | 85 |
| 2009 | 682 | 224 | 5 | 32 | 112 |
| 2011 | 648 | 202 | 7.5 | 44.6 | 78 |
| 2012 | 672 | 266 | 7.3 | 40.4 | 98 |
| 2013 | 740 | 282 | 8 | 52.4 | 105 |

(1) 663.6

(2) 666.3

(3) 636.6

(4) 663.3

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**12. Number of different categories of goods sold in the city over the years (in thousands) is as given under. In which of the following years was the number of refrigerators sold approximately 25% of the number of cell phones sold?**

| Year | TV | Refrigerator | Microwave | Laptops | cell phones |
|------|-----|--------------|-----------|---------|-------------|
| 2010 | 26 | 64 | 232 | 153 | 340 |
| 2011 | 45 | 60 | 242 | 172 | 336 |
| 2012 | 72 | 79 | 248 | 210 | 404 |
| 2013 | 81 | 93 | 280 | 241 | 411 |
| 2014 | 107 | 112 | 266 | 235 | 442 |

(1) 2011

(2) 2012

(3) 2013

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**13. In the figure, PQ is a diameter of the circle. Angle PQS = $35°$. Find angle QRS.**
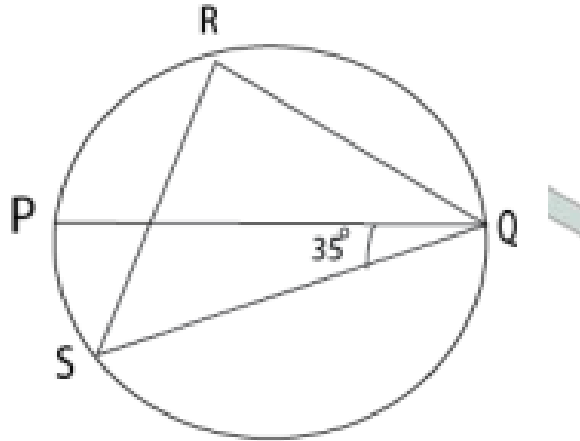


(1) $55°$

(2) $45°$

(3) $35°$

(4) $60°$

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**14. If $x = \sqrt[5]{5}$ and $y = \sqrt[4]{4}$, which of the following is true?**

(1) $x > y$

(2) $y > x$

(3) $x = y$

(4) None

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**15. If $a$ and $b$ are positive real numbers and $a * b$ denotes $\sqrt{a \times b}$, what is the value of $8 * (4 * 16)$?**

(1) $4^{1/3}$

(2) 16

(3) 8

(4) $4\sqrt{2}$

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**16. The average age of three men is 50 years and their ages are in the proportion 3:5:7. The age of the youngest man is:**

(1) 40 years

(2) 30 years

(3) 35 years

(4) 50 years

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**17. By selling mangoes at the rate of 64 for Rs. 2000, the vendor loses 40%. How many should he sell for Rs. 1000 so as to gain 20%?**

(1) 12

(2) 16

(3) 15

(4) 20

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**18. The area of a triangle metal plate with base 88 cm and altitude 64 cm is to be reduced to one-fourth of its original area by making a hole of circular shape at the center. The radius of this hole will be:**

(1) 24.8 cm

(2) 28 cm

(3) 56 cm

(4) $4\sqrt{42}$ cm

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**19. Find the value of $\sqrt{\dfrac{2+\sqrt{3}}{2-\sqrt{3}}}$ correct to three places of decimal.**

(1) 3.141

(2) 2.732

(3) 3.124

(4) 3.732

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**20. A mixture of petrol and kerosene weighing 5 kg contains 5% kerosene. How much more kerosene (approx.) must be added into it to make it 10%?**

(1) 250 gm

(2) 275 gm

(3) 300 gm

(4) 425 gm

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**21. A student who gets 20% marks fails by 20 marks, but another student who gets 36% marks gets 44 marks more than minimum passing marks. Find the maximum number of marks and percentage necessary for passing.**

(1) 300, 20%

(2) 600, 20%

(3) 400, 25%

(4) 400, 20%

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**22. If 26 horses or 20 bullocks eat up the fodder in store in 170 days, in what time will 10 horses and 8 bullocks finish the same quantity of fodder?**

(1) 212.67 days

(2) 162.33 days

(3) 212 days

(4) 216.67 days

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**23. A boat covers 24 km upstream and 72 km downstream in 8 hours, while it covers 48 km upstream and 108 km downstream in 14 hours. Find the speed of the boat in still water and the speed of the stream respectively.**

(1) 12 km/h, 6 km/h

(2) 10 km/h, 5 km/h

(3) 10 km/h, 6 km/h

(4) 12 km/h, 5 km/h

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**24. A shopkeeper sells rice at the cost price, but uses false weight. He gains 20% in this process. What weight does he use for one kilogram?**

(1) $733\frac{1}{3}$ g

(2) 750 g

(3) $833\frac{1}{3}$ g

(4) 850 g

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**25. Working together, Rakesh, Prakash and Ashok can finish the same job in an hour. Also, if Prakash works for an hour, and then Ashok works for four hours, the job will be completed. If Rakesh can do the job an hour quicker than Prakash, how many hours would Ashok take to complete the job alone?**

(1) 3

(2) 4

(3) 2.5

(4) 6