# Arithmetic Questions for IIFT PDF

**Instructions**
For the following questions answer them individually

**Question 1**

**The smallest integer n for which $4^n > 17^{19}$ holds, is closest to**

**A** 37

**B** 35

**C** 33

**D** 39

**Answer:** D

**Explanation:**
$4^n > 17^{19}$

$\Rightarrow 16^{n/2} > 17^{19}$

Therefore, we can say that n/2 > 19

n > 38

Hence, option D is the correct answer.

**Question 2**

**The remainder, when $(15^{23} + 23^{23})$ is divided by 19, is**

**A** 4

**B** 15

**C** 0

**D** 18

**Answer:** C

**Explanation:**
The remainder when $15^{23}$ is divided by 19 equals $(-4)^{23}$
The remainder when $23^{23}$ is divided by 19 equals $4^{23}$
So, the sum of the two equals$(-4)^{23} + (4)^{23} = 0$

**Question 3**

**If a/b = 1/3, b/c = 2, c/d = 1/2 , d/e = 3 and e/f = 1/4, then what is the value of abc/def ?**

**A** 3/8

**B** 27/8

**C** 3/4

**D** 27/4

**E** 1/4

**Answer:** A

**Explanation:**
a/d = a/b * b/c * c/d = 1/3 * 2 * 1/2 = 1/3

Similarly, b/e and c/f are 3 and 3/8 respectively.

b/e = b/c*c/d*d/e = 3

c/f = c/d*d/e*e/f = 3/8

=> Value of abc/def = 1/3 * 3 * 3/8 = 3/8



**Question 4**

**Find the value of the expression:** $10 + 10^3 + 10^6 + 10^9$

**A** 1010101010

**B** 1001000010

**C** 1001000110

**D** 1001001010

**E** 100010001010

**Answer:** D

**Explanation:**

$10 + 10^3 + 10^6 + 10^9 = 10 + 1000 + 1000000 + 1000000000$

$=1001001010$

Therefore, option D is the right answer.

**Question 5**

$2 - \frac{\sqrt{6407522209}}{\sqrt{3600840049}} =$

**A** 0.666039

**B** 0.666029

**C** 0.666009

**D** None of the above

**Answer:** A

**Explanation:**

$2 - \frac{\sqrt{6407522209}}{\sqrt{3600840049}} = 2 - \frac{80047}{60007}$

$=2 - 1.3339610$

$= 0.666039$

Therefore, option A is the right answer.

**Question 6**

**The sum of** $1 - \frac{1}{6} + \left(\frac{1}{6} \times \frac{1}{4}\right) - \left(\frac{1}{6} \times \frac{1}{4} \times \frac{5}{18}\right) +$ **.... is**

**A** $\frac{2}{3}$

**B** $\frac{2}{\sqrt{3}}$

**C** $\sqrt{\frac{2}{3}}$

**D** $\frac{\sqrt{3}}{2}$

**Answer:** D

**Explanation:**
We can see that the magnitude in each succeeding term is less than that of preceding term.

Hence, we can say that for S = $1 - \frac{1}{6} + \left(\frac{1}{6} \times \frac{1}{4}\right) - \left(\frac{1}{6} \times \frac{1}{4} \times \frac{5}{18}\right) + \ldots$

The value will lie between (5/6, 1). We can check with option choices.

Option A: $\frac{2}{3} < \frac{5}{6}$. Hence, this can't be the answer.

Option B: $\frac{2}{\sqrt{3}} = 1.155 > 1$. Hence, this can't be the answer.

Option C: $\sqrt{\frac{2}{3}} = 0.8164 < \frac{5}{6}$. Hence, this can't be the answer.

Option D: $\frac{\sqrt{3}}{2} = 0.866$. This lies between (5/6, 1).Hence, this is the correct answer.



**Question 7**

**2 years ago, one-fifth of Amita's age was equal to one-fourth of the age of Sumita, and the average of their age was 27 years. If the age of Paramita is also considered, the average age of three of them declines to 24. What will be the average age of Sumita and Paramita 3 years from now?**

**A** 25 years

**B** 26 years

**C** 27 years

**D** cannot be determined

**Answer:** B

**Explanation:**
Let 'A', 'S' and 'P' be Amita's, Sumita's and Paramita's present age.

It is given that 2 years ago, one-fifth of Amita's age was equal to one-fourth of the age of Sumita, and the average of their age was 27 years.

$\frac{(A-2)+(S-2)}{2} = 27$

$A + S = 58$ ... (1)

$\frac{A-2}{5} = \frac{S-2}{4}$

$4A - 8 = 5S - 10$

$5S - 4A = 2$ ... (2)

From equation (1) and (2) we can say that S = 26, A = 32.

Average age of Amita, Sumita and Paramita before 2 years = 24.

$\frac{(A-2)+(S-2)+(P-2)}{3} = 24$

$A + S + P = 78$. Hence, P = 20.

Therefore, the average age of Sumita and Paramita 3 years from now? = $\frac{(S+3)+(P+3)}{2} = \frac{(26+3)+(20+3)}{2} =$

26 years.

Hence, option B is the correct answer.

**Question 8**

**Two liquids A and B are in the ratio 5 : 1 in container 1 and 1 : 3 in container 2. In what ratio should the contents of the two containers be mixed so as to obtain a mixture of A and B in the ratio 1 : 1?**

**A** 2 : 3

**B** 4 : 3

**C** 3 : 2

**D** 3 : 4

**Answer:** D

**Explanation:**

Fraction of A in contained 1 = $\frac{5}{6}$

Fraction of A in contained 2 = $\frac{1}{4}$

Let the ratio of liquid required from containers 1 and 2 be x:1-x

x($\frac{5}{6}$) + (1-x)($\frac{1}{4}$) = $\frac{1}{2}$

$\frac{7x}{12} = \frac{1}{4}$

=> x = $\frac{3}{7}$

=> Ratio = 3:4

**Question 9**

**A student took five papers in an examination, where the full marks were the same for each paper. His marks in these papers were in the proportion of 6 : 7 : 8 : 9 : 10. In all papers together, the candidate obtained 60% of the total marks. Then the number of papers in which he got more than 50% marks is**

**A** 2

**B** 3

**C** 4

**D** 5

**Answer:** C

**Explanation:**

Let the marks in the five papers be 6k, 7k, 8k, 9k and 10k respectively.
So, the total marks in all the 5 papers put together is 40k. This is equal to 60% of the total maximum marks. So, the total maximum marks is 5/3 * 40k
So, the maximum marks in each paper is 5/3 * 40k / 5 = 40k/3 = 13.33k
50% of the maximum marks is 6.67k
So, the number of papers in which the student scored more than 50% is 4

**Question 10**

**Tina, Mina, Gina, Lina and Bina are 5 sisters, aged in that order, with Tina being the eldest. Each of them had to carry a bucket of water from a well to their house. Their buckets' capacities were proportional to their ages. While returning, equal amount of water got splashed out of their buckets. Who lost maximum amount of water as a percentage of the bucket capacity?**

**A** Tina

**B** Mina

**C** Gina

**D** Lina

**E** Bina

**Answer:** E

**Explanation:**

Let the capacities of bucket of water carried by Tina, Mina, Gina, Lina and Bina respectively be $W_T, W_M, W_G, W_L, W_B$

It is given that : $W_T > W_M > W_G > W_L > W_B$

Let they spill $x$ litres of water from the bucket.

Thus, %age of water spilled by them respectively be

$= \frac{x}{W_T} \times 100, \frac{x}{W_M} \times 100, \frac{x}{W_G} \times 100, \frac{x}{W_L} \times 100, \frac{x}{W_B} \times 100$

$\because W_T > W_M > W_G > W_L > W_B$

$\therefore \frac{x}{W_T} \times 100 < \frac{x}{W_M} \times 100 < \frac{x}{W_G} \times 100 < \frac{x}{W_L} \times 100 < \frac{x}{W_B} \times 100$

Thus, Bina lost maximum amount of water as a percentage of the bucket capacity.