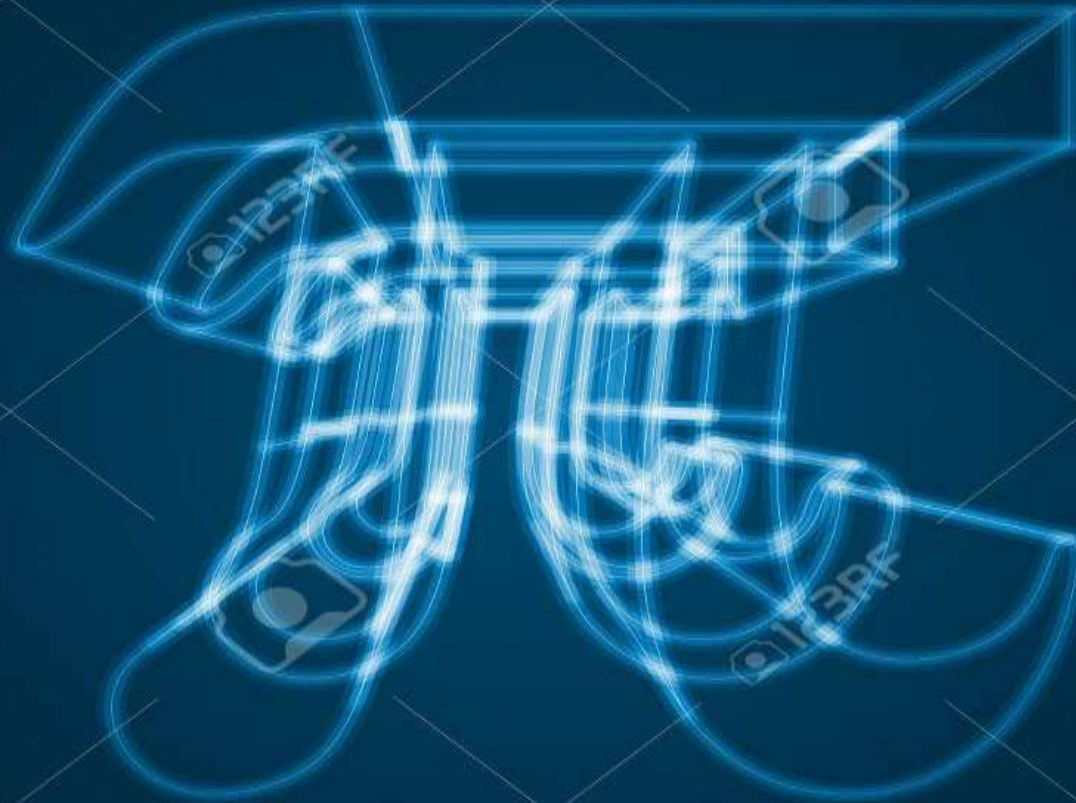


# Aptitude Revision Class



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# ACCENTURE

**A certain number of men take 45 days to complete work. If there are 10 men less then they will take 60 days to complete the work. Find the original number of men.**

- A. 50**
- B. 60**
- C. 30**
- D. 40**

# EXPLANATION

**Answer – D. 40**

**Explanation:**

**Let us assume initially there are X men. Then**

$$x*45 = (x-10)*60. \text{ So we get } x = 40$$

# **TCS NINJA-2018**

**In how many ways can we give change for Rs 100 using 1 rupee and 2 rupee coins? For example for 5 Rs we can give three ways (1,1,1,1,1), (1,1,1,2) (1,2,2)**

# EXPLANATION

**Ans :- 51**

**(1,1,1,1,1,1,1,1,1,1,1,.....100)=1**

**(1,1,1,1,1,1,.....98 time, 2) = 1**

**(1,1,1,1,1,1.....96 times, 2,2) = 1**

**(2,2,2,2,2,2,2,2,2,2,2,2,2,2,.....50 times) = 1**

# TCS NINJA-2018

**a,b,c are positive numbers such that  $a+b+ab=8$ ,  
 $b+c+bc=15$  and  $c+a+ca=35$  What is the value of  
 $a+b+c+abc$ ?**

# EXPLANATION

**Ans :- 36**

$$a+b+ab=8, a+b+ab+1=8+1=9, (a+1)(1+b)=9 \text{ ----[i]}$$

$$b+c+bc=15, b+c+bc+1=15+1=16, (1+b)(1+c)=16 \text{ ---[ii]}$$

$$c+a+ca=35, c+a+ca+1=35+1=36, (1+c)(1+a)=36 \text{ --[iii]}$$

**From equation 1,2 and 3**

$$(1+b)=9/(1+a), (1+c)=36/(1+a) \text{ this value put in 2 eqn}$$

$$9/(1+a) \times 36/(1+a) = 16, (1+a)^2 = 81/4, a = 3.5, b=1, c=7$$

$$a+b+c+abc=?,$$

$$3.5+1+7+(3.5 \times 1 \times 7) = 36$$

# TCS NINJA-2018

**Rs. 3000 is distributed among A, B and C such that A gets  $\frac{2}{3}$ rd of what B and C together get and C gets  $\frac{1}{2}$  of what A and B together get. Find C's share.**

- a. 1500**
- b. 1000**
- c. 1200**
- d. 1800**



# EXPLANATION

**Answer:- 1000**

$$A+B+C = 3000$$

$$A = \frac{2}{3} (B+C), A/(B+C) = \frac{2}{3}$$

$$C = \frac{1}{2} (A+B), C/(A+B) = \frac{1}{2}$$

$$C_s = \frac{1}{3} \times 3000 = 1000 \text{ Rs.}$$

$$A_s = \frac{2}{5} \times 3000 = 1200 \text{ Rs.}$$

$$B_s = 3000 - (1000 + 1200) = 800 \text{ Rs.}$$

# EXPLANATION

**Answer:- 1000**

$$A+B+C = 3000$$

$$A = \frac{2}{3} (B+C), A/(B+C) = \frac{2}{3}$$

$$C = \frac{1}{2} (A+B), C/(A+B) = \frac{1}{2}$$

$$C_s = \frac{1}{3} \times 3000 = 1000 \text{ Rs.}$$

$$A_s = \frac{2}{5} \times 3000 = 1200 \text{ Rs.}$$

$$B_s = 3000 - (1000 + 1200) = 800 \text{ Rs.}$$

# ***MIXTURE***

REPLACEMENT	MILK	WATER
MILK: WATER=100:0	100	0
FIRST REPLACEMENT	- 10	+10
MILK : WATER= 9:1	90	10
SECOND REPLACEMENT	-9	-1+10
MILK:WATER= 81:19	81	19
THIRD REPLACEMENT	-8.1	-1.9+10
MILK:WATER= 729:271	72.9	27.1

# ***VOLUME IS REMAIN CONSTANT***

**QUANTITY OF MILK LEFT AFTER  $n^{\text{th}}$  operation:-**

$$\left[\frac{a - b}{a}\right]^n \times \text{initial quantity}$$

**a = Initial quantity**

**b = Quantity taken out every time and replace  
by water.**

**n = Number of operation**

# ***GATE-2011***

**Q:- A container originally contains 10 liters of pure spirit. From container 1 liter of spirit is replaced with 1 liter of water. Subsequently, 1 liter of the mixture is again replaced with 1 liter of water and this process is repeated one more time. How much spirit is now in the container?**

**(a) 7.58 liters**

**(b) 7.84 liters**

**(c) 7 liters**

**(d) 7.29 liters**

# EXPLANATION

QUANTITY OF SPIRIT LEFT AFTER  $n^{\text{th}}$  operation:-

$$[(a - b)/a]^n \times \text{initial quantity}$$

$$a = 10$$

$$b = 1$$

$$n = 3$$

$$= [(10 - 1)/10]^3 \times 10 = 7.29 \text{ L (Ans.)}$$

# QUESTION

**Q:- A petrol tank at filling station has a capacity of 400 liters. The attendant sells 40 liters of petrol from tank to one customer and then adulterates it with 40 liters of kerosene. This process was repeated with three customers. Then the quantity (in liters) of pure petrol received by fourth customer, if he purchases 40 liters of adulterated petrol, is**

**(a) 29.16**

**(b) 30**

**(c) 10.16**

**(d) 19.16**

# EXPLANATION

**Petrol left out after  $n^{\text{th}}$  operation :-  $[(a-b)/a]^n \times a$**

**Petrol left out after 3<sup>rd</sup> operation :-  $[(400-40)/400]^3 \times 400 = 291.6 \text{ L}$**

**The quantity (in liters) of pure petrol received by fourth customer :-**

**$P : K = 291.6 : 108.4$**

**$291.6/400 \times 40 = 29.16 \text{ L}$**



# QUESTION

**Q:- A beaker full with pure cola, Mohit withdraws 25% of cola and replaces it with water. He again withdraws 25% of mixture of cola and again replace it with water and the process was repeated two more times till he find 567 ml of pure cola left in mixture. Then the actual initial quantity (in ml) of cola was**

**(a) 1792**

**(b) 1000**

**(c) 1296**

**(d) None of these**

# EXPLANATION

Cola left out after  $n^{\text{th}}$  operation :-  $[(a-b)/a]^n \times a$

Cola left out after  $4^{\text{th}}$  operation :-  $[(a-0.25a)/a]^4$   
 $\times a = 567 \text{ L}$

$0.75^4 \times a = 567$

$a = 1792 \text{ L}$

# QUESTION

**Q:-  $(17)^{23} + (19)^{23}$  is not divisible by**

**(a) 36**

**(b) 16**

**(c) 9**

**(d) 18**

# EXPLANATION

$$(17)^{23} + (19)^{23}$$

$$(17 + 19) K = 36 K$$

# QUESTION

**Q:- The cost of a diamond is directly proportional to square of its weight. The value of % loss, if diamond breaks in two pieces having weights in ratio 6 : 4, is**

**(a) 24**

**(b) 48**

**(c) 37.5**

**(d) 50**

# EXPLANATION

$D_c \propto W^2$  ( let initial weight 10 )

$$D_c = K (10)^2 = 100 K$$

$$D = 10$$

First part after break =  $K 6^2 = 36 K$

Second part after break =  $K 4^2 = 16 K$

Total after break =  $52K$

$$\text{Loss} = [(100 - 52)/100] \times 100 = 48\%$$

# QUESTION

**Q:- The number of all four digit numbers which are divisible by 4, that can be formed from 1, 2, 3, 4 and 5.**

**(a) 125**

**(b) 90**

**(c) 120**

**(d) 100**

# EXPLANATION

The last 2 digits must be divisible by 4.

When the last digit is 2, the digit in tens place can be 1, 3, 5. Since there is no restriction on the repetition of digits, the number of ways in the hundredth place and thousandth place can be 5 ways each.

So the number of 4 digit numbers ending with 2 is  $1 * 3 * 5 * 5 = 75$ .

When the last digit is 4, the digit in the tens place can be 2, 4 ; the number of ways in the hundredth place and thousandth place can be 5 ways each.

So the number of 4 digit numbers ending with 4 is  $1 * 2 * 5 * 5 = 50$ .

Therefore the total number of 4 digit numbers that can be formed that is divisible by 4 is 125.



# QUESTION

**Q:- The units digit of  $2! + 4! + 6! + 8! + \dots + 98!$  will be?**

**(a) 2**

**(b) 0**

**(c) 3**

**(d) 6**

# EXPLANATION

$$= 2! + 4! + 6! + 8! \dots + 98!$$

$$= 2 + 24 + 120 + 40320 + \dots + \dots 0 = 6 \text{ (Ans.)}$$

# QUESTION

**Q:- Number of zeros at the end of  $2 \times 4 \times 6 \times 8$   
.....  $\times 100$  will be**

**(a) 10**

**(b) 24**

**(c) 12**

**(d) 20**

# EXPLANATION

**$2 \times 4 \times 6 \times 8 \dots\dots\dots \times 100$**

**For one zero at end we need product of  $(5 \times 2)$**

**In this case :- all terms are even that means 2 available every place.**

**We count 5 :- 10,20,30,40,**50**,60,70,80,90,**100****

**Total =  $10 + 2$  (In 50 and 100, 2 times 5 appeared)**

**Answer = **12****

# QUESTION

**Q:- If  $N = 1! + 3! + 5! + 7! + \dots + 99!$  Then remainder when  $N$  is divided by 24.**

**(a) 7**

**(b) 6**

**(c) 3**

**(d) 5**

# EXPLANATION

$N = 1! + 3! + 5! + 7! + \dots + 99!$  Then remainder when  $N$  is divided by 24.

$$24 = 2^3 \times 3$$

$$N = 1 + 6 + 120 + 5040 + \dots$$

$$N = 1 + 6 = 7 \text{ (Ans.)}$$