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(Open Subject IV)

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Department of MCA - I Sem - II

Subject : OS - III - Quantitative Technique. [Date - 12 Apr 2020]

Assignment

1) What is the average of first five multiples of 12?

$$\rightarrow (12 + 24 + 36 + 48 + 60) / 5 = 180 / 5 = 36$$

A) 36

2) What is the difference in the place value of 5 in the numeral 754853?

\rightarrow The digit 5 has two place values in the numeral.

$$5 \times 10^5 = 50,000$$

$$5 \times 10^1 = 50$$

$$\therefore \text{Required difference} = 50000 - 50 = 49950$$

B) 49950

3) 40% of 280 = ?

$$\rightarrow 40 / 100 \times 280 = 112$$

A) 112

4) $45 \times x = 35\%$ of 900

$$\rightarrow 45x = 35 / 100 \times 900$$

$$45x = 35 \times 9$$

$$x = 315 / 45$$

$$x = 7$$

B) 7

5) HCF of 105 and 1195

$$\rightarrow (\text{by Euclid's division lemma}) 1168 = 1095 \times 1 + 73 \mid 1095 = 73 \times 15 + 0$$

So here, remainder is 0 therefore H.C.F is 73.

for first case H.C.F of 1168:

for Second case H.C.F of 1095:

$$(\text{by Euclid's division lemma}) 1095 = 1022 \times 1 + 73 \mid 1022 = 73 \times 14 + 0$$

So here, remainder is 0 therefore H.C.F is 73.

B) 73

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6) What will be the HCF of 608, 544; 638, 783; and 425, 476. Respectively?

→ Factor of 608 = 32×19

Factor of 544 = 32×17

So, H.C.F. = 32;

Factor of 638 = 29×22

Factor of 783 = 29×27

So, H.C.F. = 29;

Hence, H.C.F. are respectively 32, 29, 17.

So, H.C.F. 29;

Factor of 425 = 17×25

Factor of 476 = 17×28

A) 32, 29, 17.

7) In the given expression $(1.05)^{2 \times x} = 44.1$, find the value of x .

→ $(1.05)^{2 \times x} = 44.1$

$2.1 \times x = 44.1$

$x = 44.1 / 2.1$

$x = 21$ Note: Option is not available.

8) A shopkeeper sold an article for Rs. 2500. If the Cost price of the article is 2000, find the profit percent.

→ SP = 2500 CP = 2000 Profit = 500

profit % = $500 \times 100 / 2000 = 25\%$.

B) 25

9) How many times the hands of a clock coincide in a day?

→ The hands of the clock makes 0 degrees with each other 11 times in 12 hours. Therefore, in 24 hours it would coincide 22 times.

B) 22

10) 10 typists can type 600 pages in 8 hours. Find the average number of pages typed by each typist in an hour.

→ 10 typists type 600 pages in 8 hours, then 1 typist will type 60 pages ($600/10$) in 8 hours, In one hour a typist will type $60/8 = 7.5$ pages
So the answer is 7.5 pages.

B) 7.5 pages.

11) Average age of a group of 30 boys is 16 years. A boy of age 19 leaves the group and a new boy joins the group. If the new average age of the group is 15.8 years, find the age of the new boy.

→ Let the age of the new boy = x years
total age of 30 boys = $30 \times 16 = 480$ years.

As per que, if we Minus age of boy who leaves the group and then add the age of the boy who joins the group the new average becomes = 15.8 years.

$$\frac{30 \times 16 - 19 + x}{30} \therefore 15.8$$

$$480 - 19 - x = 474$$

$$x = 474 - 480 + 19$$

$$x = -6 + 19$$

$$= 13 \text{ years.}$$

B) 13 years.

12) If the average of 20 numbers is zero, how many no. may be greater than zero?

→ 4 years ago the sum of the ages of A & B was $2 \times 20 = 40$ years. At present the sum of their ages = $40 + 2 \times 4 = 40 + 8 = 48$ years.

Today the average age of A, B & C = 25 years or the total age of A, B & C, now is 75 years, so the present age of C = $75 - 48 = 27$ years. Thus 7 years from now, C will be $27 + 7 = 34$ yrs.

B) 34 years.

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13) If the average of 20 numbers is zero, how many numbers may be greater than zero?

→ Average of 20 numbers = 0.

Therefore Sum of 20 numbers = $(0 \times 20) = 0$

It is quite possible that 19 of these numbers may be positive and if their sum is a , then 20th number is $(-a)$

A) 19

14) A 60 liter Mixture of Milk and water Contains 10% water. How Much water must be added to Make water 20% in the Mixture?

→ Let x L be water to be Mixed.

Then, Milk = 54L and water = $(6 + x)$ L

Total Mixture = $(60 + x)$ L which Contains 20% water

So, $(6 + x) \times 100 / (60 + x)$

$$\therefore 600 + 100x = 20(60 + x)$$

$$600 + x = 1200 + 20x$$

$$80x = 1200 - 600$$

$$80x = 600$$

$$x = 7.5 \text{ L}$$

15. $A:B = 1:2$; $B:C = 3:2$; $C:D = 1:3$ then.

B) 7.5 L

15) $A:B$ is $1:2$; $B:C$ is $3:2$ and $C:D$ is $1:3$, find $A:B:C:D$.

→ $A:B = 1:2$; $B:C = 3:2$; $C:D = 1:3$ then.

$$A:B:C:D = ABC:BBC:BCC:BCD$$

$$= 3 \times 1 \times 1 : 2 \times 3 \times 1 : 2 \times 2 \times 1 : 2 \times 2 \times 3$$

$$= 3:6:4:12$$

A) 3:6:4:12

16) Vikas and Mohan working together can Complete a work in 6 days. If Vikas alone Completes the Same work in 10 days. in how many days Mohan alone Can Complete the Same Work?

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 → (Vikas + Mohan)'s One day work will be $1/6$.
 Vikas work in one day will be $1/10$
 Hence, Mohan One day work = $1/6 - 1/10$.
 $= 5-3/30 = 2/30 = 1/15$
 $= 15$ days.

C) 15 Days.

- 17) If January 1, 1996, was Monday, what day of the week was January 1, 1997?

→ Every year Makes a day later, But 1996 is leap year so January 1, 1997 will be wednesday. Because there is One extra day included in feb 1996.

B) Wednesday

- 18) Today is wednesday, after 68 days, it will be

→ 68 days = 9 weeks 5 days

Every day is repeated after 7 days so 63rd day will be wednesday 68th day will be Monday

C) Monday

- 19) Two buses start towards each other, from two places A & B which are at a distance of 180 km. They start at the same time 09:10 PM. If the speeds of the buses are 40 km and 50 km per hour respectively. they will meet each other at:

→ $A + B = 180$.

Assume that they meet each other after x mins.

Hence, Distance travelled by Bus a = $(x/60) * 40$ km.

Hence, Distance travelled by Bus b = $(x/60) * 50$ km.

$A + B = 180$.

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$$(19) \rightarrow [(x/60) * 40 + (x/60) * 50] = 180$$

$$90x = 180 * 60;$$

$$x = 180 * 60 / 90$$

$$x = 2 * 60$$

$$x = 120 \text{ mins} = 2 \text{ hrs.}$$

After 2 hrs i.e. at 11:10 PM both buses will meet each other

C) 11:10 PM

20) Shikhar obtained 60, 65, 70, 72 and 78 Marks in English, Hindi, chemistry, history and Mathematics respectively. What are the average Marks in all subjects?

→ Average = Sum of Marks obtained in all subjects / no of Subjects. $= 345 / 5 = 69$.

A) 69.

😊 THANKS 😊

[SANJAY SIR]