

ALL BRANCH (English)



General Aptitude

Quantitative Aptitude

DPP 06 Discussion Notes
Number System



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MCQ

What will be the remainder if 3^{193} is divided by 8?

A 6

B 1

C 5

D 3

3

$$\begin{aligned} \rightarrow 3^1 &= 3 \div 8 \rightarrow R = 3 \\ 3^2 &= 9 \div 8 \rightarrow \underline{R = 1} \\ \rightarrow 3^3 &= 27 \div 8 \rightarrow R = 3 \\ 3^4 &= 81 \div 8 \rightarrow \underline{R = 1} \end{aligned}$$

MCQ



What is the smallest number that when subtracted from 63407 makes it exactly divisible by 9?

63407

$$6 + 3 + 4 + 0 + 7 = 20 - \textcircled{2}$$

18

A 4

B 3

C 2

D 1

MCQ

Find the remainder when 3^{51} is divided by 5.

- ☐ A 2
- ☐ B 1
- ☐ C 4
- ☒ D 3

$$4) 51 \text{ (12)}$$

$$\frac{48}{3}$$

$3^1 = 3 \div 5 \rightarrow R=3$	$R=1$
$3^2 = 9 \div 5 \rightarrow R=4$	$R=2$
$3^3 = 27 \div 5 \rightarrow R=2$	$R=3$
$3^4 = 81 \div 5 \rightarrow R=1$	$R=0$
$3^5 = 343 \div 5 \rightarrow R=3$	

MCQ

If the number 653ab is divisible by 90, then $(a + b) = ?$

A 13

B 4

C 22

D 8

$$a + b = 4 + 0$$

$$= \underline{\underline{4}}$$

$$90 = 9 \times \underline{10}$$

$$b = 0 (\because \text{divisible by } 10)$$

$$6 + 5 + 3 + \underline{a} + 0 = 14$$

$$\begin{array}{r} 4 \\ + 4 \\ \hline 18 \end{array}$$

$$a = 4$$

MCQ



What would be the unit digit in the answer of: $369^{28} + 167^{44}$

A 1

B 6

C 2

D 7

Handwritten solution for the unit digit of $369^{28} + 167^{44}$:

The expression is $369^{28} + 167^{44}$. The unit digits of the bases are 9 and 7, respectively. The exponents are 28 and 44.

For 369^{28} :

- Unit digit of 9 follows a cycle of 2: 9, 1, 9, 1, ...
- Since the exponent 28 is even, the unit digit is 1.

For 167^{44} :

- Unit digit of 7 follows a cycle of 4: 7, 9, 3, 1, 7, 9, 3, 1, ...
- Since the exponent 44 is a multiple of 4, the unit digit is 1.

Therefore, the unit digit of the sum is $1 + 1 = 2$.

MCQ



What is the least number that when divided by any of the numbers 7, 16, 28 leaves a remainder of 3 ?

A 116

B 115

C 227

D 113

$$\text{L.C.M of } 7, 16, 28 = 112$$

$$\begin{array}{r} 112 \\ + 3 \\ \hline 115 \end{array}$$

$$\begin{array}{r|l} 7 & 7, 16, 28 \\ 4 & 1, 16, 4 \\ & 1, 4, 1 \end{array}$$

$$7 \times 4 \times 4 = 7 \times 16 = 112$$

The only natural number which is neither prime nor composite is?

- ☒ A 1
- ☐ B 0
- ☐ C 13
- ☐ D 3

 \rightarrow Neither Prime Nor Composite

MCQ

Which largest number of 5 digits is divisible by 99?

$99 = 9 \times 11$

- A 99999 $\begin{array}{r} 27 \\ -18 \\ \hline 9 \end{array}$ x
- B 99981 $\begin{array}{r} 19 \\ -17 \\ \hline 2 \end{array}$ x
- C 99909 $\begin{array}{r} 27 \\ -9 \\ \hline 18 \end{array}$ x
- D 99990** $\begin{array}{r} 18 \\ -18 \\ \hline 0 \end{array}$

MCQ

What should be greatest possible length of a scale which can be used to measure exactly the lengths 7 m, 3 m 85 cm, 12 m 95 cm is.

- ☐ A 25 cm
- ☒ B 35 cm
- ☐ C 45 cm
- ☐ D 55 cm

H.C.F. = 35 cm

$$\begin{aligned} 7\text{ m} &= 700\text{ cm} \\ 3\text{ m } 85\text{ cm} &= 385\text{ cm} \\ 12\text{ m } 95\text{ cm} &= 1295\text{ cm} \end{aligned}$$

$$\begin{array}{r} 35 \overline{) 1295} 37 \\ \underline{105} \\ 245 \\ \underline{245} \\ 0 \end{array}$$

$$\begin{array}{r} 385 \overline{) 700} 1 \\ \underline{385} \\ 315 \overline{) 385} 1 \\ \underline{315} \\ 70 \overline{) 315} 4 \\ \underline{280} \\ 35 \overline{) 70} 2 \\ \underline{70} \\ 0 \end{array}$$

MCQ

Find the least multiple of 7, which leaves a remainder of 4, when divided by 6, 9, 15 and 18 is:

A 94 ✗

B 184 ✗

C 274 ✗

D 364 ✓

L.C.M ✗

+4

Multiple of 7

= 364



Thank You!

GW Soldiers