Mahendra's

यूपी पुलिस एसआई परीक्षा 2021

Remainder Theorem (Fermat's little theorem)

संख्यात्मक योग्यता

•LIVE

01:00 PM

UPCOMING ONLINE BATCHES

MAY 2021

05 May 2021

08:00 AM to 10:00 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSl)

03:00 PM to 05:00 PM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

01:00 PM to 03:00 PM
UP POLICE SI 2021
(LAW + HINDI)

BILINGUAL

10:30 AM to 12:30 PM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

ENGLISH MEDIUM

12 May 2021

01:00 PM to 03:00 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSL)

05:30 PM to 07:30 PM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

BILINGUAL

03:00 PM to 05:00 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSL)

ENGLISH MEDIUM

19 May 2021

10:30 AM to 12:30 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSl)

01:00 PM to 03:00 PM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

BILINGUAL

07:30 PM to 09:30 PM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

ENGLISH MEDIUM

26 May 2021

07:30 PM to 09:30 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSl)

08:00 AM to 10:00 AM
LIVE PREMIUM GREEN CARD
(IBPS PO & CLERK)

05:30 PM to 07:30 PM
LIVE PREMIUM SILVER CARD
(CGL & CHSl)

BILINGUAL

19 May 2021

07:30 PM to 09:30 PM
LIVE MATHS FOUNDATION COURSE

BILINGUAL

SBI Clerk Pre 2021 Crash Course

05 May 2021
10:30 AM to 12:30 PM
SBI CLERK PRELIMS 2021

12 May 2021
8:00 AM to 10:00 AM
SBI CLERK PRELIMS 2021
3:00 PM to 5:00 PM
SBI CLERK PRELIMS 2021
7:30 PM to 9:30 PM
SBI CLERK PRELIMS 2021

19 May 2021
1:00 PM to 3:00 PM
SBI CLERK PRELIMS 2021
5:30 PM to 7:30 PM
SBI CLERK PRELIMS 2021

26 May 2021
10:30 AM to 02:00 PM
SBI CLERK PRELIMS 2021

BILINGUAL

Find the remainder in expression–

$$\frac{1111 \times 2222 \times \cancel{3333}}{\cancel{15}\ 5} \times 1111$$

$+1 \times +2 \times +1$

व्यंजक $\frac{1111 \times 2222 \times 3333}{15}$ में शेषफल होगा।

(a) 10 (b) 11

(c) 2 (d) 6 ✓

$[\div 3]$

$\frac{2}{5}$

$\boxed{R=2}$

Sol^n:

Required Answer $= 2 \times 3 = \boxed{6}$

Find the remainder in expression–

$$\frac{1001\times \overset{334}{\cancel{1002}}\times 1003\times 1004}{\cancel{27}\ 9}$$

व्यंजक $\frac{1001\times1002\times1003\times1004}{27}$ में शेषफल होगा।

(a) 10 (b) 11

(c) 2 (d) 12

Trick :-

$[\div 3]$

$$\frac{2\times 1\times 4\times 5}{9} = \frac{40}{9} \quad \boxed{R=4}$$

Required remainder $= 4\times 3 = 12$

Find the remiander when $(3)^{162}$ is divided by 162.

जब$(3)^{162}$ को 162 से भाग किया जायें तो शेषफल होगा।

(a) 1 (b) 81

(c) 150 (d) 100

$$\frac{3^{162}}{162} \rightarrow 9$$

$$\frac{3^{162}}{162} = \frac{3^4 \cdot 3^{158}}{\cancel{162}\ 2} \quad \div 81$$

$$\left(\frac{1}{2}\right)^{158} \Rightarrow R = 1$$

Correct Remainder $= 1 \times 81 = 81$

$a^m \times a^n = a^{m+n}$

Find the remiander when $(5)^{250}$ is divided by 250.

जब $(5)^{250}$ को 250 से भाग किया जाये तो शेषफल होगा।

$5^3 = 125$

(a) 1 (b) 125
(c) 150 (d) 100

$$\frac{5^{250}}{250} = \frac{\cancel{5^3} \times 5^{247}}{\cancel{250}\ 2} \quad [\div 125]$$

$$\Rightarrow \frac{5^{247}}{2} = \frac{1^{247}}{2}$$

$R = 1$

Correct Remainder

$= 1 \times 125 = 125$

Find the remiander when $(2)^{51}$ is divided by 5.

जब $(2)^{51}$ को 5 से भाग किया जाये तो शेषफल होगा।

(a) 1 (b) 2

(c) 3 (d) 4

$$\left[\frac{2^{51}}{5}\right]$$

$$\frac{(2^2)^{25} \times 2^1}{5}$$

$$\frac{(-1)^{25} \times 2}{5}$$

$$\Rightarrow \frac{-2}{5} \quad 5 \qquad R = +3$$

Find the remiander when $(2)^{501}$ is divided by 9.

जब $(2)^{501}$ को 9 से भाग किया जाये तो शेषफल होगा।

(a) 8 (b) 7

(c) 4 (d) 5

$+1$ -1

$$\frac{(2^{501})}{9} \Rightarrow \frac{(2^3)^{167}}{9} = \frac{(8)^{167}}{9}$$

$$\frac{(-1)^{167}}{9} = \frac{-1}{9}$$

positive Remainder $= 8$

Find the remiander when $(2)^{111}$ is divided by 9.

जब $(2)^{111}$ को 9 से भाग किया जाये तो शेषफल होगा।

(a) 4 (b) 5

(c) 7 (d) 8

$$\frac{+1}{-1} \leftarrow \frac{2^{111}}{9} = \frac{(2^3)^{37}}{9} = \frac{(8)^{37}}{9}$$

$$= \frac{(-1)^{37}}{9} = \frac{-1}{9} \quad 9$$

Remainder = 8