ToppersNotes

SSC

REASONING

Sierra Innovations Pvt. Ltd.

Reasoning

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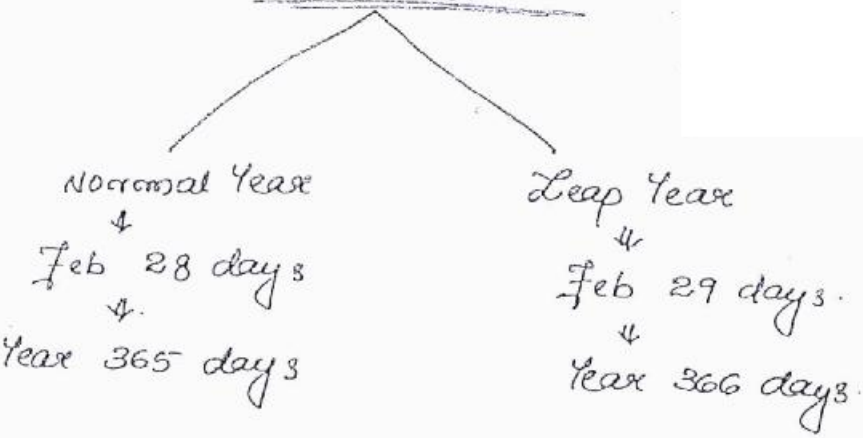
Calendar



Leap Year:

Those years which are divisible by 4 are called leap year.

Ex: A person has birthday 29 Feb 1896. Then his next birthday will be

Ans: 1896 + 4 = 1900 ⇒ divisible by 4. But this year is Centuary. So Ans: 1904.

* For Centuary to be leap year, it should be divisible by 400. *

Eg for leap year Centuaries = 2000, 2400, 2800, 1600

No of odd days:

Such days which don't make whole week, are called odd days.

Eg: 10 days → 7 + 3
↑
odd days.

100 days → $\frac{100}{7}$ ⇒ 2 days odd days.

$$\begin{array}{r} 14 \\ 7\,\overline{)\,100} \\ 7 \\ \hline 30 \\ 28 \\ \hline 2 \end{array}$$

← odd days.

365 days → $$\begin{array}{r} 52 \\ 7\,\overline{)\,365} \\ 35 \\ \hline 15 \\ 14 \\ \hline 1 \end{array}$$

← odd days.

* In normal year, no of odd day = 1

But in leap year, no of odd days = 2

* In normal year, no of odd days in Feb = 0

~~In in In~~

* In normal year, 1 Jan & 31 Dece day will be Same.

eg: 1 Jan 2010 is Sunday.

2010 → normal year.

31 Dec 2010 will be Sunday.

1 Jan 2014 → Thursday.

31 Dec 2014 → Thursday

∴ In leap year 1 Jan & 31 Dec both have successive days.

eg: 1 Jan 2012 is Sunday

31 Dec 2012 will be Monday ← Leap year.

Q. If 7 April 2015 is tuesday then 7 Ap 2016 will be?

In Such type Questions, most important month is Feb.

If Feb is 28 days → Calender will go by 1 days. If Feb has 29 days → Calender will change by 2 days.

7 April 2015 → Tuesday.

Feb 2016 → 29 days.

∴ 7 April 2016 → Tuesday + 2 days → Thurs day

Q. 1 July 2012 was Sunday. Find 1 July 2013 day?

2013 - Normal year.

1 July 2012 - Sunday

1 July 2013 - Monday.

Q. 20 Feb 2011 → Sunday. Find the day 20 Feb 2012.

20 Feb 2011 → Sunday

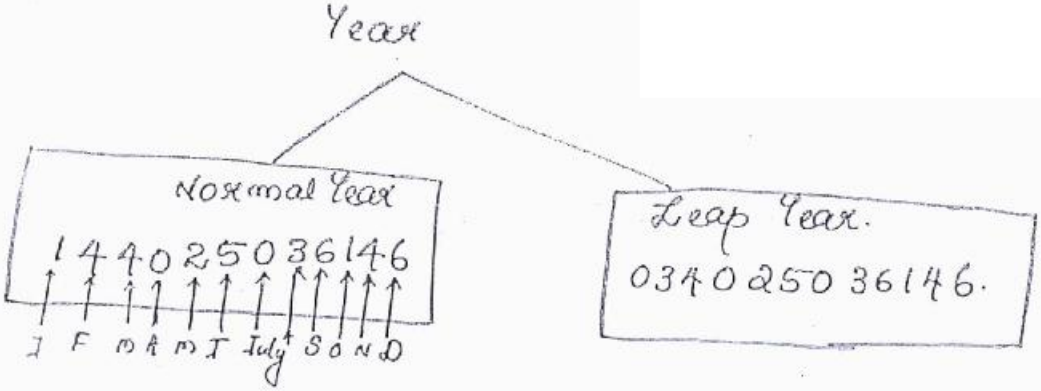
20 Feb 2012 → Sunday + 1 = Monday.

Q. 20 Feb 2012 → Monday. Find the day 20 Feb 2013.

20 Feb 2012 → Monday.

20 Feb 2013 → Monday + 2 = Wednesday.

Q. Find the day of 16 Dec 1971.



1971 → Normal Year.

Date → 16.

month code → 6.

last 2 digit Year → 71

No of leap years → 17

110

$$\begin{array}{r} 17 \\ 4\overline{)71} \\ 4 \\ \hline 31 \\ 28 \\ \hline \end{array}$$

Odd days = $\frac{110}{7}$ → 5 days. → Thursday

odd days.

01 → Sunday
02 → Monday
03 → Tuesday
04 → Wednesday
05 → Thursday
06 → Friday
00 → Saturday

Ans ⇒ Thursday.

Q. 26 Jan 1950.

1950 → Normal Year.

Date → 26
Jan → 1.
Year (last) → 50
→ 12.
89

5 odd days ⇒ Thursday

$4 \overline{)50}$ → 12

$7 \overline{)89}$ → 12, 1, 19, 14, 5

Q. 21 Feb 1986.

↓
Normal

Feb → 21.
→ 4
→ 86
→ 21
132

odd day → 132/7

$4 \overline{)86}$ → 21, 8, 6

$7 \overline{)132}$ → 18, 1, 62, 56, 6

Ans: Friday

Q. 15 Aug 1980.

Leap year.

→ 15
→ 23
→ 80
→ 20
118

7 | 118 → 16, 7, 48, 42, 6

7 | 118 → 16, 7, 48, 42, 6

odd days → 6 → Friday

Q. 14 May 1985

144025036146

→ 14
→ 2
→ 85
→ 21
122

7 | 122 → 17, 7, 52, 49, 03

Ans: Tuesday.

Q. what will be day on 26 Jan 1975.

→ 26 → 75
→ 1
→ 75 → 15
→ 18 → 2
120 → 0

4 | 75 → 18, 4, 35, 3

Q. 8 April 2015.

144025

→ 8

→ 0

→ 15

→ 3

26

$$7\overline{)26}\ \ 3,\ 21,\ \underline{05} \rightarrow \text{Thursday}$$

Dates of 1500 → 0

Dates of ~~1600~~ 1600 ⇒ 6

Dates of 1700 ⇒ 4

Dates of 1800 ⇒ 2

Dates of 1900 ⇒ No change.

Dates of 2000 ⇒ 6

Dates of 2100 ⇒ 4.

Dates of 2200 ⇒ 2.

Dates of 2300 ⇒ 0

Keep on continue same pattern.

8 April 2015

→ 08

→ 0

→ 15

→ 3

26 +

2000's → 6

32

$$7\overline{)32}\ \ 4,\ 28,\ 4$$

Q. 8 10 May 1857.

→ 10
→ 2
→ 57
→ 14
1800's → 2
85

$7\overline{)85}$ → 12, 7, 15, 14, 01

$4\overline{)57}$ → 14, 4, 17, 16

144025086196

Ans: 01 ⇒ Sunday.

Q. 15 Aug ~~1947~~ 2047.

→ 15
→ 03
→ 47
→ 101
2000's → 6
82

$4\overline{)47}$

$7\overline{)82}$ → 11, 7, 12, 7, 05

Ans: 05 ⇒ Thursday.

Q. If 1 Dec 1960 was Monday. Then what will be Day on 5 June 2005.

First check given date. Then according to change in the calender given, make changes in Answer.

Real ↓ Thursday $\xrightarrow{+4}$ Monday Exami

or.

Mond $\xrightarrow{-3}$ Thursday

1 Dec 1960.

→ 01
→ 06
→ 60
→ 15
82

$$\begin{array}{r} 11 \\ 7\overline{)82} \\ 7 \\ \hline 12 \\ 7 \\ \hline 05 \end{array}$$

05 ⇒ Thursday.

5 June 2005.

→ 05
→ 05
→ 05
→ 1
16 +
6
3

$$\begin{array}{r} 22 \\ 7\overline{)21} \\ \hline 021 \end{array}$$

021 ⇒ Sunday $\xrightarrow{+4}$ Examiner Thursday.

Q. If 1 July 2011 was Sunday. Then what will be day on 21 March 2003.

July

144025036146

mar

1 July 2011

→ 01
→ 00
→ 11
→ 2

14 +
6
2

7 | 20
14

06

Real ↓ Friday $\xrightarrow{+2}$ Sunday Examiner.

21 March 2003

→ 21
→ 04
→ 03
→ 0

28 +
6

34

4

7 | 34
28

06

Real Friday $\xrightarrow{+2}$ Sunday. Examiner

Ans: Sunday.

Q. 15 Aug 1982 was Sunday. Then 26 Jan 2010

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15 Aug 1982

→ 15
→ 03
→ 82
→ 40

$$\begin{array}{r} 20 \\ 7\,\overline{)\,140} \\ 14 \end{array}$$

Real Sunday $\xrightarrow{0}$ Examiner Sunday.

26 Jan 2010.

→ 26
→ 01
→ 10
→ 2

39 +
2000's → 6

$$\begin{array}{r} 6 \\ 7\,\overline{)\,45} \\ 42 \\ \hline 03 \end{array}$$

Ans: 03 → Tuesday

Q. In the normal year which 2 month will have Same calender.

a) July & August
b) May & October.
c) April & July.
d) June & November.

In number code, which months have same no those all months will have Same calender:

i.e Feb + March + November
July & ~~August~~ April
Sep & Dec.

In any case, may & June calender will not repeat.

May $\xrightarrow{\text{Same}}$ Next year January.
June $\xrightarrow{\text{Same}}$ Next year February
} even in normal or leap year.

i.e 2015 may → 2016 January.
2015 June → 2016 February.

Repetition of Calendar:

1. Find the next calender which is similar to 2013

In such type question, last 2 digit of year divide by 4 and find remainder.

$4\overline{)\begin{array}{r}3\\13\\12\\\hline 01\end{array}}$

1) Remainder is 2/3 → Add 11 to given year.
2) Remainder is 1 → Add 6 to given year.
3) Remainder is 0 → Add 28 to given year (Leap year)

After 28 years, all calender will repeat.

Ans: 2013 + 6 = 2019.

Q. 1990

$$4 \overline{)90}\ 22,\ 8,\ 10,\ 8,\ 2$$

1990 + 11 ⟹ 2001 calender will repeat.

Q. 2023.

$$4 \overline{)23}\ 5,\ 20,\ 3$$

2023 + 11 ⟹ 2034

Calender changes due to odd days. when odd days become zero, calender repeats.

2013 → 1
2014 → 1
2015 → 1
2016 → 2
2017 → 1
2018 → 1

7 ⟹ i.e 2019 ⟹ Same Calender of 2013.

Calender will not same for normal year & leap year.

Q. If moham's mother remember that moham's birth after 15 Aug & well before 19 Aug. while moham's sister remember that his birthday bf after 15 Aug. & bf 17 Aug. Then moham's birthday will be? .

Common days → Ans:

i.e. 16, 17, 18 ← Mother
13, 14, 15, 16 ← Sister.

Common = 16

if more than one common days → either of the date will be Ans

3. If today is monday, then what will be day after 31 days.

Day repeats after / bf 7 or multiple of 7 days.
(+) (−)

today is monday $\xrightarrow{+28}$ 29th day. monday.

30th day → Tuesday
31st day → Wednesday.

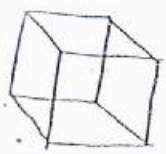
After 31st day → 32nd day ← is asked in the Question.
32nd day → Thursday.

4. If today is Friday, then what will be the day after 51 days.

today is Friday $\xrightarrow{+49}$ 50th day Friday.
51 day → Saturday.
52nd day → Sunday.

Sun	1	8	15	22	29
Mon	2	9	16	23	30
Tues	3	10	17	24	31
Wed	4	11	18	25	
Thur	5	12	19	26	
Fri	6	13	20	27	
Sat	7	14	21	28	

Dice

 ⇒ 6 Surfaces.

In dice one Subject is opposite to one side while 4 adjacent surface around it.

2 type Dici

- Standard Dice
- Normal Dice.

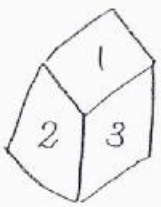
Standard Dice:

If sum of opposite surface is 7, then it is standard dice.

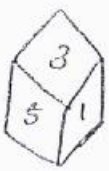
1 2 3 ⇒ fixed
↕ ↕ ↕
6 5 4

Identification of dice:

If in the diagram, sum of any two adjacent sides is not '7', then it is standard dice.



$1+3 \neq 7$
$3+2 \neq 7$
$2+1 \neq 7$
$\Rightarrow$ Standard Dice.



$3+1 \neq 7$
$1+5 \neq 7$
$3+5 \neq 7$
$\Rightarrow$ Standard Dice.

Normal Dice:

If sum of any two adjacent surface is 7, then it is called normal dice.

$1+6=7 \Rightarrow$ normal Dice.

$2+5=7 \Rightarrow$ normal Dice.