~~Time and Work~~ Calender

36 365 d, 5 hrs, 48 mins, 11 secs - - - - - -

365d ≈ 6 hrs

(1) Every multiple of 4 is a Leap year (4, 8, 12, 16 - - - - LY)

(2) Century year is Non leap year (100, 200, 300, - - NLY)

(3) Every 4th century year is LY (400, 800, 1200, - - - - LY)

1 (O. Y.) ← ordinary year = 365 d = 52×7^{6} + 1 odd day

1 (O. Y.) = $\left(\frac{365}{7}\right)$ d Remainder (Re) 1 odd day.

1 (L. Y.) = $\left(\frac{366}{7}\right)$ d Re 2 odd day.

within 1st 100 Y ⟶ 24 (L. Y.) + 76 (O. Y.)

× 2 (Re) + × 1 (Re)

48 + 76 = $\frac{124}{7}$ Re 5 odd day

since never Re can't be more than divisor or no. of odd days can't be more than 7 hence ÷ by 7 to get (5) odd day.

4) ×100 Y ⟶ 5 odd days

×200 Y ⟶ 3 odd days

×300 Y ⟶ 1 ⟶ "

✓400 Y ⟶ 6 ⟶ " ⟶ +1 = 7/7 = 0 Re ↓ 0 odd days

∴ ×4 ↑ leave

extra 1 day

5) 1st odd day is MONday

(gregorian calender ⟶ 01 01 AD)

Q) 28 Aug 1994 Re 0 ✓

4

1900 ⟶ 1

?

6) (a) 400 ⟶ 0

1600 ⟶ 0

300 ⟶ 1

1900 ⟶ 1

0 ⟶ 6 'sunday'

Sol) 0 - 1900 ⟶ 1

1900 - 93 ⟶ 4

94 ⟶ 2

7

93 = 23 + 70 (L.Y. + O.Y.)

×2 + ×1

46 + 70 = 116/7 Re (4) ✓ odd day

1994

J 31 ← dec wala

31/7 Re (3) ↓ odd

F 29 1 → 94 is not a leap year

F M A My J Jly Aug

0 3 2 3 2 3 0

230 ✓

43

4

Q. 9th Aug 2016

<G>(b) 0 - 2000 ⟶ 0 (∵ 400 ⟶ 0)

Sol

2000 ⟶ 0

15 ⟶ 4

16 ⟶ 5

9

Y = L.Y. + O.Y.

15 = 3 + 12

x 2 x 1

6 + 12 = 18/7 (Re 4)

2016

Leap year

J F M A M J J A

3 1 3 2 3 2 3 2

9/7 (Re 2)

9/7 Re (2) ⟶ Tuesday

Q If 15th Aug 1947 was Friday, then 26th January 1950 was _____.

Sol 26th Jan. 1950

0 - 1900 ⟶ 1

49 ⟶ LY NLY

12 37

x 2 x 1

48 + 27 = 75

75/7

24 + 37 = 61

61/7 =

(48) 12/50/4

1/7)75/-7↓/05

Sir

26th Jan 1950

Paper print → Sunday
1st odd day → Monday

1900 → 1
49 → 5
50 → 5
11/7 Re 4

49 | LY | OY
12 | 37
x 2 | x 1
24 + 37 = 61/7 Re 5

1950 → Thursday

26/7 Jan Re 5

Alternate Method

Let 15th August 1947 = Fri° = 0th odd day

	Aug (16/7)	Sep	Oct	Nov.	Dec
1948	2	2	3	2	3
1948	2 ← 366/7 (L.Y.)				
1949	1 ← 365/7 (O.Y.)				
1950	5 ← 26th Jan./7				

2 +2 +3 /7 = 7/7

2 3 2 /7

6 → Thursday