Q.53)
Ans) d
Exp) Option d is correct
Exp) Let the present ages of Rajeev and Anand be 7x and 10x years respectively.

Then, $\frac{7x+5}{10x+5} = \frac{8}{11}$

⇨ $77x + 55 = 80x + 40$

⇨ $3x = 15$

⇨ $x = 5$

So, the present ages of Rajeev and Anand are $(7 \times 5) and\ (10 \times 5)$ respectively.

The sum of their ages = $(35 + 50) = 85$

Hence, $a = 8\ and\ b = 5$

Then, $a^b = 8^5$

We know unit digit of 8 repeated after 4 powers. So, *unit digit of* 8^5 = *unit digit of* 8^1 => 8

Q.54)
Ans) a
Exp) Option a is correct.
Work done by (A+C) in 5 days = $5\left(\frac{1}{20} + \frac{1}{45}\right) = \frac{13}{36}$

Remaining work = $\left(1 - \frac{13}{36}\right) = \frac{23}{36}$

Work done by (A+B) in one day = $\left(\frac{1}{20} + \frac{7}{90}\right) = \frac{23}{180}$

Let the number of days be x

Then, $\frac{23}{36}$ work done in x days,

x = $\frac{23}{36} \div \frac{23}{180} = \frac{23}{36} \times \frac{180}{23} = 5$

Q.55)
Ans) c
Exp) Option c is correct.
From the statements the series will be,
Rajesh > Pawan > Ram > Raja
So, Raja scored lowest.

Q.56)
Ans) c
Exp) Option c is correct
Exp) We may have (1 black and 2 non-black) or (2 black and 1 non-black) or (3 black).

Required number of ways = $({}^3C_1 \times {}^6C_2) + ({}^3C_2 \times {}^6C_1) + ({}^3C_3)$

= $\left[3 \times \frac{6\times5}{2\times1}\right] + [3 \times 6] + 1$

= (45 + 18 + 1)

= 64

Q.57)
Ans) b
Exp) Option b is correct.
Here, we have to calculate: How many years ago the ratio of their ages was 3:2. Let us assume x years ago
At present: Shubham is 30 years and Nikhil is 25 years
x years ago: Shubham's age = (30 – x) and Nikhil's age = (25 – x)