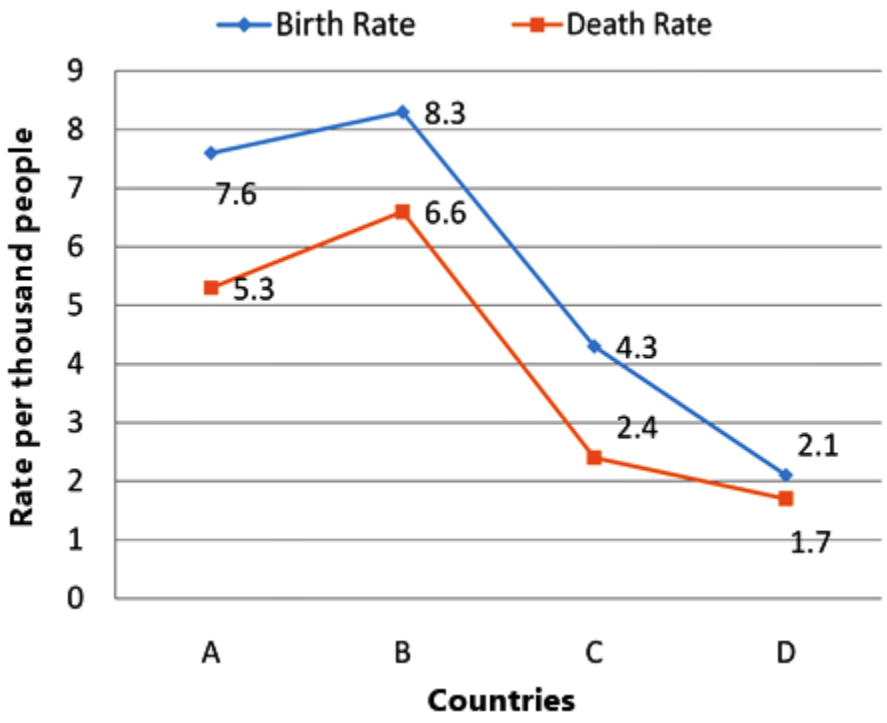
Date Interpretation Line Chart Questions for SBI PO Pre, IBPS PO Pre, SBI Clerk Mains and IBPS Clerk Mains Exams

DI Line Chart Quiz 30

Directions: Study the following information carefully and answer the questions given beside:

The following line chart that shows the birth rate (per thousand persons) and death rate (per thousand persons) of countries A, B, C and D in the year 2014.



$$\text{Population Increase} = \frac{[\text{Population increase rate} \times \text{Population}]}{1000}$$

1. If the population of country B is 20 million at the beginning of year 2014, by how much would its population increase in this year?

A. 17 thousand B. 34 thousand C. 20 thousand D. 19 thousand E. None of these

2. By what percentage is the birth rate of country B is more than that of country C?

A. 7.5% B. 93.02% C. 23.27% D. 63.33% E. Can't be determined

3. **The population increase in countries A and C during year 2014 was same. What was the ratio of populations of countries A and C at the beginning of year 2014?**

A. 11 : 17 B. 17 : 13 C. 19 : 23 D. 4 : 11 E. 4 : 19

4. **Populations of countries B and D at beginning of year 2014 were 20 million and 30 million respectively. If these countries are considered as one country, what will be the effective death rate (in per thousand persons) of the combined country ?**

A. 2.44 B. 1.83 C. 3.66 D. 1.5 E. 2.25

5. **What will be the ratio of number of deaths in country A to number of births in country C?**

A. 19 : 11 B. 5 : 9 C. 11 : 17 D. None of these E. Can't be determined

Correct Answers:

1	2	3	4	5
B	B	C	C	E

Explanations:

1. If Birth Rate and Death Rate are given, then population increase per thousand persons will be given by (Birth Rate – Death Rate).

⇒ Population increase rate of country B = (8.3 – 6.6) per thousand of population = 1.7 per thousand of population

∴ Population increase of country B = $\frac{[\text{Population increase rate} \times \text{Population}]}{1000}$

$= \frac{1.7 \times 20 \times 1000000}{1000}$ = 34 thousand.

Hence, option B is correct.

2. Birth rate of country B = 8.3

Birth rate of country C = 4.3

∴ Percentage by which birth rate of country B is more than that of country C

$= \frac{8.3 - 4.3}{4.3} \times 100 = 93.02.$

Hence, option B is correct.

3. We know that, Population increase of a country

$= \frac{[\text{Population increase rate} \times \text{Population}]}{1000}$

Where, Population increase rate = Birth rate – Death rate

Population increase rate for country A = 7.6 – 5.3 = 2.3 per thousand of population

Population increase rate for country C = 4.3 – 2.4 = 1.9 per thousand of population

$\Rightarrow$ Population increase of country A $= \frac{[2.3 \times \text{Population of country A}]}{1000}$

Population increase of country C $= \frac{[1.9 \times \text{Population of country C}]}{1000}$

Since the population increase in both countries A and C is equal.

$\therefore \frac{[2.3 \times \text{Population of country A}]}{1000} = \frac{[1.9 \times \text{Population of country C}]}{1000}$

$\Rightarrow [2.3 \times \text{Population of country A}] = [1.9 \times \text{Population of country C}]$

$\Rightarrow \frac{\text{Population of country A}}{\text{Population of country C}} = \frac{1.9}{2.3} = \frac{19}{23}$

∴ Ratio of populations of countries A and C at the beginning of year 2014 was 19 : 23.

Hence, option C is correct.

4. Death rate of country B = 6.6

We know that,

$$\text{Number of deaths in a country} = \frac{[\text{Death rate} \times \text{Population}]}{1000}$$

$$\text{Number of deaths in country B} = \frac{[6.6 \times 20 \text{ million}]}{1000} = 132 \text{ k}$$

Death rate of country D = 1.7

$$\text{Number of deaths in country D} = \frac{[1.7 \times 30 \text{ million}]}{1000} = 51 \text{ k}$$

Total number of deaths in both countries combined = (132 + 51) thousand = 183 thousand = 0.183 million

Total population of both countries combined = 20 million + 30 million = 50 million

Using the formula again,

$$\text{Number of deaths in a country} = \frac{[\text{Death rate} \times \text{Population}]}{1000}$$

$$\Rightarrow \text{Number of deaths in both countries combined} = \frac{[\text{Combined death rate} \times \text{Combined Population}]}{1000}$$

$$\Rightarrow 0.183 \text{ million} = \frac{[\text{Combined death rate} \times 50 \text{ million}]}{1000}$$

$$\Rightarrow \text{Combined death rate} = \frac{183}{50} = 3.66$$

$\therefore$ Effective death rate of both countries B and D together will be 3.66 (per thousand persons)

Hence, option C is correct.

5. We know that,

$$\text{Number of deaths in a country} = \frac{[\text{Death rate} \times \text{Population}]}{1000}$$

Here, we are given only death rates of countries A and C but not population. Without knowing the population, the actual number of deaths in countries A and C cannot be find, and hence the ratio of deaths cannot be determined.

Hence, option E is correct.