Quiz Date: 7th June 2020

Directions (1-5): Study the given passage carefully and answer the questions.

The total population of city X is 7100 out of which 24% population are below poverty line. And total population of city X is 11 $\frac{1}{4}$% less than total population of city Z and 25% of population in city Z is below poverty line. Population other than below poverty line in city L is 160 more than population of city X which are not below poverty line.
Average population of Y and K is equal to average population of city X and Z & population of Y is 150% of population of K. Ratio of BPL in city Z to city K is 2 : 3. 20% of total population are BPL in city Y and Z. BPL in city L is equal to BPL in city X.

Q1. Average BPL population in city X and Y is how much more/less than average BPL population in city K and L ?
(a) 794
(b) 824
(c) 848
(d) 764
(e) None of these

Q2. Average population in city K and L is what percent of total population in city Z ?
(a) 93%
(b) 73%
(c) 83.125%
(d) 87.50%
(e) 78.625%

Q3. In another city 'A', BPL population is half of the population other than BPL in city K which is 25% of total population. Then find total population in city A ?
(a) 6820
(b) 6080
(c) 6240
(d) 6040
(e) None of these

Q4. What is the average BPL population in all the cities ?
(a) 1924
(b) 1884
(c) 1724
(d) 1964
(e) None of these

Q5. What is the ratio of BPL population in city Y to city L ?
(a) 426 : 353
(b) 353 : 426

(c) 351 : 425
(d) 353 : 428
(e) None of these

Directions (6- 10) :What will come in place of the question mark (?) in the following number series ?

Q6. 8 14 32 58 124 ?
(a) 248
(b) 247
(c) 237
(d) 238
(e) 254

Q7. 25 41 89 169 281 ?
(a) 425
(b) 415
(c) 409
(d) 419
(e) 414

Q8. 461 474 465 478 469 ?
(a) 460
(b) 482
(c) 456
(d) 478
(e) 468

Q9. 980 516 284 168 110 ?
(a) 73
(b) 71
(c) 83
(d) 91
(e) 81

Q10. 4 5 8 27 104 ?
(a) 530

(b) 514
(c) 520
(d) 509
(e) 525

Q11. A man borrows Rs. 4000 at 20% compound rate of interest. At the end of each year he pays back Rs. 1500. How much amount should he pay at the end of the third year to clear all his dues ?
(a) Rs. 2592
(b) Rs. 2852
(c) Rs. 2952
(d) Rs. 2953
(e) Rs. 3912

Q12. Manish borrowed some money at the rate of 7 per cent per annum for the first three years, 9 per cent per annum for the next six years and 10 per cent per annum for the period beyond nine years. If the total interest paid by him at the end of fifteen years is Rs 4050, how much money did he borrow?(if simple interest be reckoned)
(a) Rs 2800
(b) Rs 3600
(c) Rs 3000
(d) Rs 3500
(e) Rs. 3200

Q13. What sum will give Rs. 244 as the difference between simple interest and compound interest at 10% in $1\frac{1}{2}$ years compounded half yearly ?
(a) Rs. 40,000
(b) Rs. 36,000
(c) Rs. 32,000
(d) Rs. 28,000
(e) Rs. 30,000

Q14. A sum of money lent at compound interest for 2 years at 20% per annum would fetch Rs 723 more,if the interest was payable half-yearly than if it was payable annually.The sum is?
(a) Rs. 38,000
(b) Rs. 30,000
(c) Rs. 20,000
(d) Rs. 25,000
(e) Rs. 35000

Q15. A man deposited a certain sum of money at the beginning of each year for three years in a bank. After 3 years he got total amount Rs 7440. If the rate of interest is 12% per annum at simple interest. Find the amount deposited at the beginning of each year.
(a) Rs 1700

(b) Rs 2000
(c) Rs 2200
(d) Rs 2500
(e) None

Solutions

Sol **(1-5)**
Total population of city X = 7100
Population below poverty line in city X = 1704
Population of X other than BPL = 7100 – 1704 = 5396
Total population of city Z = $\frac{7100}{(100-11.25)} \times 100 = 8000$
BPL population in city Z = ¼ × 8000 = 2000
Population other than BPL in city L = 5396 + 160 = 5556
Avg. population of city Y and K.
$= \frac{7100+8000}{2} = 7550.$
Let total population of city K be x
∴ (1.5x + x) = 7550 × 2
x = 6040.
∴ Total population of city Y = 6040 × 1.5 = 9060
BPL population of city K = $\frac{2000}{2} \times 3 = 3000$
BPL population in city L = 1704
Total population in city L = 1740 + 5556 = 7260
BPL population in city Y
$= \frac{20}{100} \times [9060 + 8000] - 2000$
= 3412 – 2000
= 1412

City	Below poverty line	other than BPL	Total
X	1704	5396	7100
Y	1412	7648	9060
Z	2000	6000	8000

K	3000	3040	6040
L	1704	5556	7260

S1. Ans.(a)
Sol.
Required difference = $\left(\frac{3000+1704}{2}\right) - \left(\frac{1704+1412}{2}\right)$
= 2352 – 1558
= 794

S2. Ans.(c)
Sol.
Required percentage = $\frac{\frac{6040+7260}{2}}{8000} \times 100$
= $\frac{6650}{8000} \times 100 = 83.125\%$

S3. Ans.(b)
Sol.
BPL population in city A = $\frac{3040}{2} = 1520$
∴ Total population in city A.
= 1520 × 4 = 6080

S4. Ans.(d)
Sol.
Required Avg. = $\frac{1704+1412+2000+3000+1709}{5}$
= $\frac{9820}{5}$
= 1964

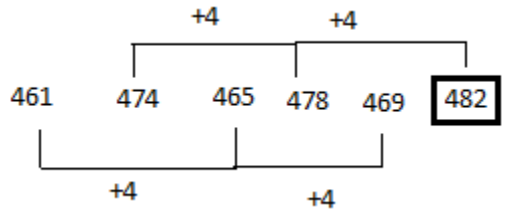
S5. Ans.(b)
Sol.
Required ratio = $\frac{1412}{1704} = 353 : 426$

S6. Ans (d)
Sol. The series is
$8 \times 2 - 2 = 14$
$14 \times 2 + 4 = 32$
$32 \times 2 - 6 = 58$
$58 \times 2 + 8 = 124$
$124 \times 2 - 10 = 238$

S7. Ans (a)
Sol. The series is
$25 + 16 \times 1 = 41$
$41 + 16 \times 3 = 89$

$89 + 16 \times 5 = 169$
$169 + 16 \times 7 = 281$
$281 + 16 \times 9 = 425$

S8. Ans (b)
Sol. The series is



S9. Ans (e)
Sol. The series is
$980 \div 2 + 26 = 516$
$516 \div 2 + 26 = 284$
$284 \div 2 + 26 = 168$
$168 \div 2 + 26 = 110$
$110 \div 2 + 26 = 81$

S10. Ans (e)
Sol. The series is
$4 \times 1 + 1 = 5$
$5 \times 2 - 2 = 8$
$8 \times 3 + 3 = 27$
$27 \times 4 - 4 = 104$
$104 \times 5 + 5 = 525$

S11. Ans.(c)
Sol.

Amount	4000	rate	20%
At end of 1st year	4000 + 800 = 4800	Rs.	
Amount	4800 – 1500 = 3300	Rs.	
At the end of 2nd year	3300 + 660 = 3960	Rs	

Amount 3960 – 1500 = 2460 Rs

Amount to be paid at the end of third year = 2460 + 492 = 2952 Rs.

S12. Ans. (c)
Sol.
Let the borrowed sum is S
$\frac{S\times7\times3}{100}+\frac{S\times9\times6}{100}+\frac{S\times10\times6}{100}=4050$
$0.21S+0.54S+0.6S=4050$
$1.35S=4050$
$S=\frac{4050}{1.35}=3000$ Rs.

S13. Ans.(c)
Sol.
Simple interest for 1½ year = 15% of principal
CI for 3 term at the rate of 5% = principal $\left[\left(1+\frac{5}{100}\right)^3-1\right]$
$=15.7625\%$ of principal
CI – SI = 0.7625%of principal
0.7625%of principal = 244
Sum (or principal) = Rs. 32000

S14. Ans.(b)
Sol. Let the sum be Rs. x
C.I. when interest is compounded half-yearly,
$=\left[x\left(1+\frac{10}{100}\right)^4-x\right]$
$=$ Rs. $\frac{4641x}{10000}$
C.I. when interest is compounded yearly,
$=x\times\left[\left(1+\frac{20}{100}\right)^2-1\right]$
= Rs. $\frac{11x}{25}$
$\therefore\frac{4641x}{10000}-\frac{11x}{25}=723$
x = Rs. 30,000

S15. Ans.(b)
Sol. Let amount invested at the beginning of each year = P Rs.
Now according to question
$\left(P+\frac{12}{100}\times P\right)+\left(P+\frac{12}{100}\times2P\right)+\left(P+\frac{12}{100}\times3P\right)=7440$
$3P+\frac{72}{100}\times P=7440$
$\Rightarrow P=Rs.2000$