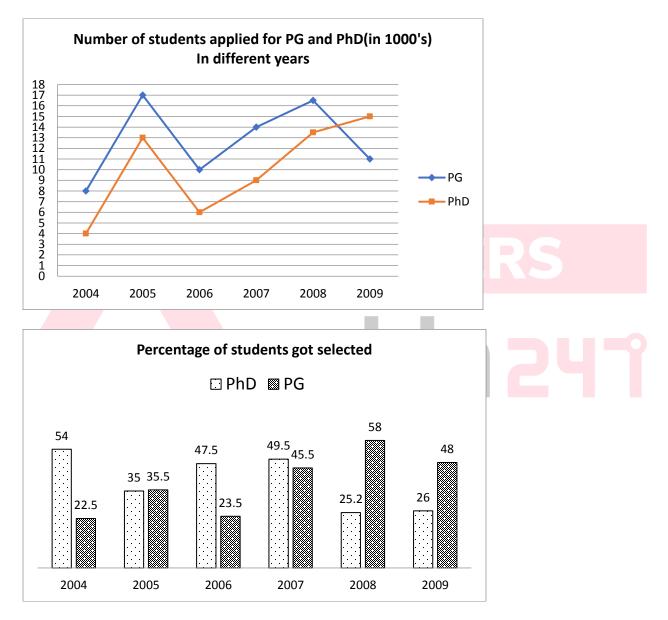**Quiz Date: 25th July 2020**

Directions (1-5): Read the following graph carefully and answer the questions given below:-
Delhi University offers two courses PG and PhD. The information regarding number of students applied for these two courses and how many of them got selected from year 2004-2009 are shown by the graphs given below:

Number of students applied for PG and PhD(in 1000's)
In different years

Percentage of students got selected

☐ PhD   ▨ PG

Q1. The percentage increase/decrease in the students got selected for PG in 2005 over year 2004 is approximately what percent of the percentage increase/decrease in the number of students applied for PhD in year 2008 over year 2007?
(a) 470%
(b) 450%

(c) 440%
(d) 460%
(e) 410%

Q2. Average number of students got selected for PhD program is approximately what percent more/less than the average number of students applied for PG programs.
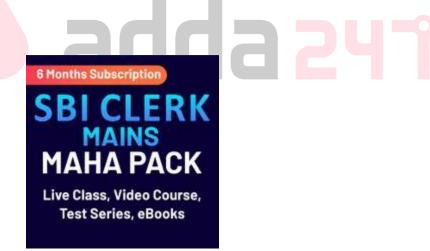(a) 72% less
(b) 72% more
(c) 82% less
(d) 82% more
(e) 77% more

Q3. Which year shows the highest quantum difference between the number of students applied and got selected for PhD programs.
(a) 2004
(b) 2005
(c) 2006
(d) 2008
(e) 2009

Q4. The ratio of number of students selected in 2005, 2007 and 2009 for PhD course to number of students applied in 2004, 2006 and 2008 for same course is:
(a) 2389 : 4980
(b) 2581 : 4700
(c) 2679 : 4321
(d) 2471 : 5321
(e) None of the above

Q5. In PG program which year shows highest percentage increase/decrease in number of student selected over previous year?
(a) 2005
(b) 2006
(c) 2007
(d) 2008
(e) 2009

Q6. The average of 8 readings is 24.3, out of which the average of first two is 18.5 and that of next three is 21.2. If the sixth reading is 3 less than seventh and 8 less than eighth, what is the sixth reading?
(a) 24.8
(b) 26.5
(c) 27.6
(d) 29.4
(e) 25.6

Q7. A man invests a part of Rs. 10000 at 5% and the remainder at 6%. The 5% investment yields annually Rs. 76.50 more than the 6%. The amount invested at 6% is
(a) Rs. 3600
(b) Rs. 3850
(c) Rs. 3500
(d) Rs. 4000
(e) Rs. 4200

Q8. A contractor gives a contract to 'X' for building a wall in 8 days. After 2 days of starting of work he realize that he will be able to finish 64% of work in the contracted time, so he invite Y and Z due to which they complete the work on 6th day from starting. At the end, if ratio of money received by X, Y and Z is 12 : 8 : 5 then find in how many days Z can alone complete the work?
(a) 15 days
(b) 16 days
(c) 29 days
(d) 20 days
(e) None of these

Q9. Anshul deposited two parts of a sum of Rs. 25000 in different banks at the rates of 15% per annum and 18% per annum respectively. In one year he got Rs. 4050 as the total interest. What was the amount deposited at the rate of 18% per annum?
(a) Rs. 9000
(b) Rs. 18000
(c) Rs. 15000
(d) Rs. 10000
(e) None of these

Q10. The difference between the simple and the compound interest compounded every six months at the rate of 10 per cent per annum at the end of two years is Rs. 124.05. What is the sum?
(a) Rs. 10000
(b) Rs. 60000
(c) Rs. 12000
(d) Rs. 8000
(e) None of these

Directions (11-15): What should come in place of question mark (?) in following number series problems?

Q11. 35, 63, 99, 143, ?
(a) 175
(b) 185
(c) 195
(d) 205
(e) 155

Q12. 26, 105, 400, 1185, ?, 2355
(a) 2360
(b) 2350
(c) 2355
(d) 2340
(e) 2430

Q13. 83, 87, 183, 565, ?, 11461
(a) 2270
(b) 2275
(c) 2280
(d) 2290
(e) 2285

Q14. 7, 23, 55, 109, 191, ?
(a) 307
(b) 317
(c) 333
(d) 343
(e) 729

Q15. 81, 82, 42, 15, ?
(a) 3.75
(b) 4.75
(c) 5.75
(d) 5.25

(e) 6.75

Solutions

S1. Ans (a)

Sol. Percentage increase in selected students in PG in 2005= $\frac{6035-1800}{1800} \times 100 = 235\%$

Percentage increase in number of applied students in PhD in 2008 $= \frac{13500-9000}{9000} \times 100 = 50\%$

Required percentage= $\frac{235}{50} \times 100 = 470\%$

S2. Ans (a)

Sol. Average students selected for PhD program $= \frac{2160+4550+2850+4455+3402+3900}{6} = \frac{21317}{6} = 3553$ (approx)

Average number of student applied for PG program $= \frac{8000+17000+10000+14000+16500+11000}{6} = \frac{76500}{6} = 12750$

Required percentage $= \frac{12750-3553}{12750} \times 100 = 72\%$ less

S3. Ans (e)

Sol. Difference for year 2004 = 4000 − 2160 = 1840

For year, 2005 = 13000 − 4550 = 8450

For year, 2006 = 6000 − 2850 = 3150

For year, 2007 = 9000 − 4455 = 4545

For year, 2008 = 13500 − 3402 = 10098

For year, 2009 = 15000 − 3900 = 11100

S4. Ans (b)

Sol. Number of students selected in 2005, 2007 and 2009 for PhD course $= 13000 \times \frac{35}{100} + 9000 \times \frac{49.5}{100} + 15000 \times \frac{26}{100}$

$= 4550 + 4455 + 3900$

= 12905

Number of students applied in 2004, 2006 and 2008 for PhD course = 4000 + 6000 + 13500 = 23500

Required ratio = 12905 ∶ 23500

= 2581 ∶ 4700

S5. Ans (a)

Sol. Percentage increase/decrease in the number of selected students

For year 2005 $= \frac{6035-1800}{1800} \times 100 = 235\%$ (approx)

For year 2006 $= \frac{6035-2350}{6035} \times 100 = 61\%$ (approx)

For year 2007 = $\frac{6370-2350}{2350} \times 100 = 171\%$ (approx)

For year 2008 = $\frac{9570-6370}{6370} \times 100 = 50\%$ (approx)

For year 2009 = $\frac{9570-5280}{9570} \times 100 = 45\%$ (approx)

S6. Ans.(c)
Sol. let S be the sixth number.
$24.3 \times 8 = 18.5 \times 2 + 21.2 \times 3 + S + (S+3) + (S+8)$
$194.4 = 37.0 + 63.6 + 3S + 11$
$194.4 - 111.6 = 3S$
$82.8 = 3S$
S = 27.6

S7. Ans.(b)
Sol.
Let the amount invested at 6% be x
The amount invested at 5% be 10000 – x
$\frac{(10000-x)\times5}{100} - x \times \frac{6}{100} = 76.50$
$50000 - 5x - 6x = 7650$
$11x = 42350$
x = 3850

S8. Ans.(d)
Sol.
When X work for 8 days work completed → 64%
1 day work of X = 8%
Let X, Y and Z earn 25x rupees
So X get → $\frac{12}{25} \times 25x$ = 12x
Y → 8x
Z → 5x
X work for six days
Y and Z for 4 days each
So, 1 day wages earn by X = $\frac{12x}{6}$ = 2x
1 day wages earn by Y = $\frac{8x}{4}$ = 2x
1 day wage earn by Z = $\frac{5x}{4}$ = 1.25x
Ratio of efficiency of
X   :   Y   :   Z
2   :   2   :   1.25
8   :   8   :   5
So,
1 day work of X = 8%
So Z can complete the whole work in = $\frac{100}{5}$ = 20 days

S9. Ans.(d)
Sol. Let the amount deposited at the rate of 18% per annum be x.

$$\Rightarrow \frac{(25000 - x) \times 15}{100} + \frac{18x}{100} = 4050$$
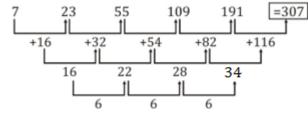
$\Rightarrow$ x = Rs. 10000

S10. Ans.(d)
Sol. Let the sum be Rs. x.

Then, $\left[x\left(1 + \frac{5}{100}\right)^4 - x\right] - \left[\frac{x \times 10 \times 2}{100}\right] = 124.05$

Solving the above equation, we get x = Rs. 8000.

S11. Ans.(c)
Sol.
Pattern is 5×7, 7×9, 9×11, 11×13…………

S12. Ans.(a)
Sol.
Pattern is ×5-25,×4-20, ×3-15, ×2-10……….

S13. Ans.(e)
Sol.
Pattern is ×1+2², ×2+3², ×3+4²……………..

S14. Ans.(a)

Sol.

S15. Ans.(b)
Sol. Pattern is $\frac{81+1}{1}, \frac{82+2}{2}, \frac{42+3}{3}, \frac{15+4}{4} = 4.75$

For any Banking/Insurance exam Assistance, Give a Missed call @ 01141183264