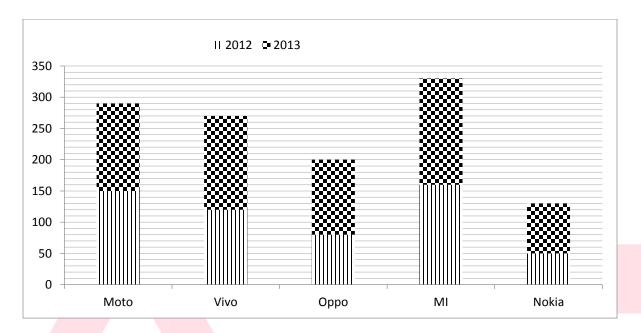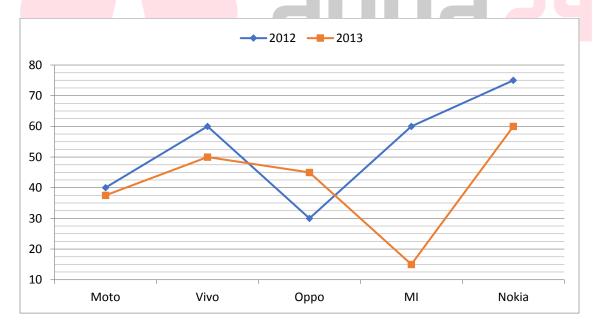**Quiz Date: 4th August 2020**

Directions (1-5): Carefully study the following bar graph and line graph to answer the questions that follow.
Bar graph shows the number of mobiles sold by 5 different companies in year 2012 and 2013.

Line graph shows the percentage of manufactured mobiles which are unsold by same companies in two years.

NOTE – Total manufactured phones in any year for any company = Total sold + Total unsold

Q1. What is the difference between total number of Moto and MI mobiles manufactured together in 2012 and total number of same mobiles manufactured together in year 2013?
(a) 198
(b) 226
(c) 256
(d) 178
(e) 316

Q2. If defective Oppo mobiles are 20% of the total sold mobiles in year 2013. Then defective Oppo mobiles in 2013 are what percent of the unsold Nokia mobiles in 2012?
(a) 88%
(b) 78%
(c) 62%
(d) 74%
(e) 66%

Q3. If total Nokia and another brand mobile named Jio manufactured in year 2012 is 1000 and unsold Jio mobiles in 2012 are 40 percent more than unsold Nokia mobiles in 2013. Then what is the average of sold Jio mobiles in 2012 and sold Moto mobiles in 2013?
(a) 336
(b) 426
(c) 386
(d) 392
(e) 416

Q4. Total manufactured mobiles of company MI and Vivo together in 2012 are what percent more/less than total sold mobiles in year 2013?
(a) $16\frac{2}{33}\%$
(b) $21\frac{2}{3}\%$
(c) $12\frac{1}{3}\%$
(d) $8\frac{1}{33}\%$
(e) $6\frac{2}{33}\%$

Q5. If total defective Vivo mobiles are 60% of total unsold Vivo mobiles in both years and ratio of defective vivo mobiles in 2012 and 2013 is 1 : 2, then find the sum of defective Vivo mobiles in 2012 and unsold moto mobiles in both years?
(a) 150
(b) 180
(c) 240
(d) 250
(e) 320

Directions (6-10): What will come in place of the question mark (?) in the following number series?
Q6. 7, 20, 46, 98, 202, (?)
(a) 420
(b) 410
(c) 310
(d) 320
(e) 220

Q7. 210, 209, 213, 186, 202, (?)
(a) 138
(b) 77
(c) 177
(d) 327
(e) 227

Q8. 27, 38, 71, 126, 203, (?)
(a) 212
(b) 202
(c) 301
(d) 312
(e) 302

Q9. 435, 354, 282, 219, 165, (?)
(a) 103
(b) 112
(c) 120
(d) 130
(e) 230

Q10. 4,200, 369, 513, 634, (?)
(a) 788
(b) 715
(c) 734
(d) 755
(e) 855

Directions (11-15): Given below passage gives the information about two products manufactured by the company over a period of four successive years. Read the given passage carefully and answer the following questions.

A company manufactures two products – A and B.
Product-A:
Average production of Product-A from 2014-2017 is 295 units. Ratio of production of Product-A in 2014 to production of Product-A in 2017 is 23 : 38. Production of Product-A in 2015 is 90% of the total production of Product-A in 2016. Production of Product-A in 2015 is 110 units less than the total production of Product-A in 2017.
Product-B:
Production of Product-B in 2014 is twice of the production of Product-A in 2016. Production of Product-B in 2015 is 50% more than the production of Product-A in 2017. Ratio of production of Product-B in 2014 to production of Product-B in 2016 is 4 : 5. Average production of Product-B from 2014-2017 is 690 units.

Q11. Production of Product-A in 2014 & 2015 together is what percent of production of Product-B in 2016?
(a) 50%
(b) 87%
(c) $33\frac{1}{3}$%
(d) 23%
(e) $66\frac{2}{3}$%

Q12. Find the ratio of production of Product-A in 2014 & 2016 together to the production of Product-B in 2014.
(a) 19 : 27
(b) 37 : 41
(c) 53 : 60
(d) 31 : 43
(e) None of the above.

Q13. Average production of Product-B in 2015 & 2017 is how much more than the average production of Product-A in 2015 & 2017?
(a) 305

(b) 345
(c) 320
(d) 380
(e) 365

Q14. Production of Product-A in 2016 is what percent more or less than the production of Product-A in 2014?

(a) $30\frac{10}{23}\%$

(b) $35\frac{13}{34}\%$

(c) $23\frac{18}{23}\%$

(d) $39\frac{19}{34}\%$

(e) $26\frac{17}{35}\%$

Q15. Find the ratio of production of Product-A & Product-B together in 2015 together to the production of Product-B in 2014 & 2017 together.

(a) 3 : 4
(b) 11 : 13
(c) 7 : 12
(d) 5 : 6
(e) 21 : 26

Solutions

S1. Ans.(b)
Sol.
Total no. of Moto & MI mobiles manufactured together in 2012
$$=\frac{150}{60}\times 100+\frac{160}{40}\times 100$$
= 250 + 400 = 650
Total no. of Moto & MI mobiles manufactured together in 2013
$$=\frac{140}{62.5}\times 100+\frac{170}{85}\times 100$$
= 224 + 200 = 424
Required difference = 650 – 424 = 226

S2. Ans.(a)
Sol.
Defective Appo mobiles in 2013 $=\frac{20}{100}\times(140+150+120+170+80)$
$$=\frac{1}{5}\times 660=132$$
Unsold Nokia mobiles in 2012 $=\frac{50}{25}\times 75=150$
Required percentage $=\frac{132}{150}\times 100=88\%$

S3. Ans.(c)
Sol.
Total Nokia mobiles manufactured $= \frac{50}{25} \times 100 = 200$
Total Jio mobiles manufactured in 2012 = 1000 − 200 = 800
Unsold Jio mobiles in 2012 $= \frac{140}{100} \times \frac{80}{40} \times 60 = 168$
Sold Jio mobiles in 2012 = 632
Required average $= \frac{632+140}{2} = 386$

S4. Ans.(e)
Sol.
Total manufactured mobiles of company MI & Vivo together in 2012
$= \frac{160}{40} \times 100 + \frac{120}{40} \times 100$
= 400 + 300 = 700
Total mobiles sold in year 2013 = 140 + 150 + 120 + 170 + 80 = 660
Required percentage $= \frac{700-660}{660} \times 100$
$= 6\frac{2}{33}\%$

S5. Ans.(d)
Sol.
Total unsold Vivo mobiles $= \frac{120}{40} \times 60 + \frac{150}{50} \times 50$
= 180 + 150 = 330
Defective Vivo mobiles $= 60 \times \frac{330}{100} = 198$
Defective Vivo mobiles in 2012 $= 198 \times \frac{1}{3} = 66$
Required total $= 66 + \frac{150}{60} \times 40 + \frac{140}{62.5} \times 37.5$
= 66 + 100 + 84 = 250

S6. Ans.(b)
Sol.
The pattern of the number series is:
7 × 2 + 6 = 20
20 × 2 + 6 = 46
46 × 2 + 6 = 98
98 × 2 + 6 = 202
202 × 2 + 6 = 404 + 6 = 410

S7. Ans. (b)
Sol.

The pattern of the number series is:

$210 - 1^3 = 209$

$209 + 2^2 = 213$

$213 - 3^3 = 186$

$186 + 4^2 = 202$

$202 - 5^3 = 202 - 125 = 77$

S8. Ans (e)

Sol.

The pattern of the number series is:

$27 + 11 = 38$

$38 + 33 = 71$

$71 + 55 = 126$

$126 + 77 = 203$

$203 + 99 = 302$

S9. Ans. (c)

Sol.

The pattern of the number series is:

$435 - 9 \times 9 = 354$

$354 - 9 \times 8 = 282$

$282 - 9 \times 7 = 219$

$219 - 9 \times 6 = 165$

$165 - 9 \times 5 = 120$

S10. Ans. (c)

Sol.

The pattern of the number series is:

$4 + 14^2 = 4 + 196 = 200$

$200 + 13^2 = 200 + 169 = 369$

$369 + 12^2 = 369 + 144 = 513$

$513 + 11^2 = 513 + 121 = 634$

$634 + 10^2 = 634 + 100 = 734$

Sol (11-15):

Product-A:

Total production of Product-A from 2014-2017 = 295 × 4

= 1,180

Let production of Product-A in 2016 be '10x'.

So, production of Product-A in 2015 = $10x \times \frac{90}{100}$

= 9x

Production of Product-A in 2017 = 9x + 110

Production of Product-A in 2014 = $(9x + 110) \times \frac{23}{38}$

ATQ,

$10x + 9x + 9x + 110 + (9x + 110) \times \frac{23}{38}$ = 1,180

$28x + 110 + \frac{207x}{38} + \frac{2530}{38}$ = 1180

$1064x + 207x = 1180 \times 38 - 4180 - 2530$

$1271x = 38,130$

x = 30

Hence, production of Product-A in 2014 = $(9x + 110) \times \frac{23}{38}$

= 230

Production of Product-A in 2015 = 9x

= 270

Production of Product-A in 2016 = 10x

= 300

Production of Product-A in 2017 = 9x + 110

= 380

Product-B:

Production of Product-B in 2014 = 300 × 2

= 600

Production of Product-B in 2015 = $380 \times \frac{150}{100}$

= 570

Let production of Product-B in 2014 and 2016 be '4x' and '5x' respectively.

So, $4x = 600$

$x = 150$

Hence, production of Product-B in 2016 = 5x

=750

Total production of Product-B from 2014-2017 = 690 × 4

= 2,760

Production of Product-B in 2017 = $2,760 - 600 - 570 - 750$

= 840

Years	A	B
2014	230	600

2015	270	570
2016	300	750
2017	380	840

S11. Ans.(e)
Sol.
Required % $= \frac{(230+270)}{750} \times 100$
$= \frac{500}{750} \times 100 = \frac{200}{3}\%$
$= 66\frac{2}{3}\%$

S12. Ans.(c)
Sol.
Required ratio $= \frac{230+300}{600}$
$= \frac{530}{600} = \frac{53}{60}$

S13. Ans.(d)
Sol.
Required difference $= \left(\frac{570+840}{2}\right) - \left(\frac{270+380}{2}\right)$
$= 705 - 325$
$= 380$

S14. Ans.(a)
Sol.
Required % $= \frac{(300-230)}{230} \times 100$
$= \frac{700}{23}\% = 30\frac{10}{23}\%$

S15. Ans.(c)
Sol.
Required ratio $= \frac{(270+570)}{(600+840)}$
$= \frac{840}{1440} = \frac{7}{12}$
$= 7 : 12$