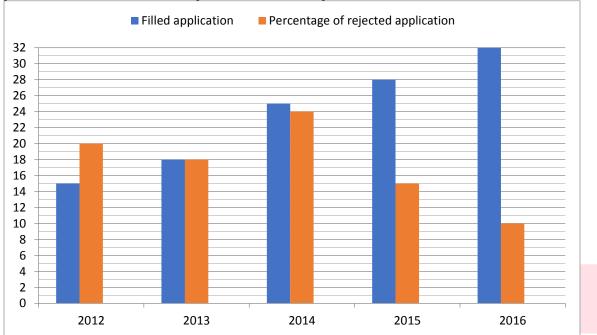**Quiz Date: 13ᵗʰ July 2020**

Direction (1 −5): Given below bar graph shows number of applications (in lakh) filled for 'SBI PO' in five different years and percentage of applications rejected in that respective years. Read the data carefully and answer the questions.

Q1. Find difference between total applications accepted in the year 2016 & 2013?
(a) 12.04 lakh
(b) 11.04 lakh
(c) 8.08 lakh
(d) 14.04 lakh
(e) 6.08 laklh

Q2. Find ratio between total applications rejected in the year 2012 to total accepted applications in the year 2014?
(a) 3 : 19
(b) 5 : 19
(c) 7 : 19
(d) 9: 19
(e) 11 : 19

Q3. Total rejected applications in the year 2014 is approximate what percent less than total accepted applications in the year 2015?
(a) 65%
(b) 60%
(c) 55%
(d) 75%
(e) 48%

Q4. Find the average number of applications accepted in the year 2013 & 2016?
(a) 18.78 lakh
(b) 14.78 lakh
(c) 21.78 lakh
(d) 16.78 lakh
(e) 12.78 lakh

Q5. If out of total accepted applications in the year 2013 & 2015 75% & 80% applicants respectively appeared in exam, then find total appeared applicants in the exam in both the years is approximate what percent of total applicants applied in these given years?
(a) 60%
(b) 65%
(c) 84%
(d) 76%
(e) 80%

Q6. In a box some Munch chocolate, some Dairy milk chocolate and Kit Kat chocolate. The probability of selecting one Munch chocolate out of box is $\frac{3}{10}$ and the probability of selecting one Kit Kat chocolate out of box is $\frac{2}{5}$. The number of Dairy milk chocolate in box is 6. Find probability of selecting three chocolate from the box such that at most two chocolate are same?
(a) $\frac{64}{85}$
(b) $\frac{64}{95}$
(c) $\frac{42}{85}$
(d) $\frac{87}{95}$
(e) $\frac{67}{85}$

Q7. A bag contains 5 red, 7 yellow and 6 green balls. 3 balls are drawn randomly. What is the probability that the balls drawn contain balls of different colours ?
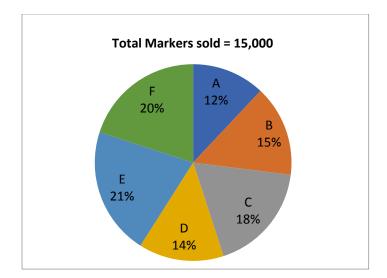(a) $\frac{35}{138}$
(b) $\frac{35}{136}$
(c) $\frac{35}{134}$

(d) $\frac{35}{163}$

(e) None of these

Q8. How many 3-digit numbers can be formed from the digits 2, 3, 5, 6, 7 and 9, which are divisible by 5 and none of the digits is repeated?
(a) 5
(b) 10
(c) 15
(d) 20
(e) None of these

Q9. Find the probability of forming the word from ANANAB such that N never comes together.
(a) $\frac{2}{3}$
(b) $\frac{4}{5}$
(c) $\frac{3}{5}$
(d) $\frac{2}{5}$
(e) $\frac{4}{5}$

Q10. In how many ways word PERMUTATION written in which all vowels comes together?
(a) 19800
(b) 302400
(c) 78000
(d) 312400
(e) 4500

Directions (11-15): Pie-chart shown below shows percentages of markers sold by six sellers.
Table shows ratio of three type of marker out of total markers sold by different sellers. Study the data carefully and solve the following questions.

Total Markers sold = 15,000

Type of markers $\longrightarrow$	X	Y	Z
A	4	3	2
B	3	4	3
C	9	7	9
D	6	4	5
E	3	2	1
F	4	5	3

Q11. Seller 'A' fixed his selling price of markers at 40% above the cost price but at the time of selling he gave 40%, 20% and 10% discount on X, Y and Z respectively. Find the total profit or loss percentage if cost price of all the markers is same?
(a) $2\frac{1}{3}\%$
(b) $1\frac{2}{3}\%$
(c) $3\frac{1}{3}\%$
(d) $2\frac{2}{3}\%$
(e) $1\frac{1}{3}\%$

Q12. Selling price of each of X, Y and Z markers are same for seller E and F and total S.P. of X, Y, Z sold by E is Rs.47250. Find the total S.P. of all the markers sold by F if E kept the SP of each X, Y, Z marker in the ratio 1 : 1.5 : 3.
(a) Rs.48250
(b) Rs.51250
(c) Rs.54520
(d) Rs.57520
(e) Rs.45500

Q13. Seller 'C' sold all the markers for a certain sum and there was a loss of $11\frac{1}{9}\%$. Had it been sold for Rs.9000 more, there would have been a gain of $11\frac{1}{9}\%$. If seller 'C' wants to earn 20% profit then what would be the total S.P. of Y marker if S.P. of each marker is in the ratio 2 : 3 : 4 respectively.
(a) Rs.13680
(b) Rs.12680
(c) Rs.13608
(d) Rs.12608
(e) Rs. 14250

Q14. There are two customers, Satish and Veer. Seller 'B' sells 60% of X marker to Satish, and remaining to Veer, B also sells 40% of Y marker to Satish and remaining to veer. Find the S.P. of each Y marker if Satish and Veer pays Rs.8370 and Rs.9180 for X and Y marker together respectively.
(a) Rs.10
(b) Rs.12
(c) Rs.14
(d) Rs.16
(e) Rs.18

Q15. Out of six sellers, which seller sells maximum number of X type of marker?
(a) B
(b) C
(c) D
(d) F
(e) E

Solutions

S1. Ans(d)
Sol.
Total applications accepted in the year 2016 = $32 \times \frac{90}{100} = 28.8 \ lakh$
Total applications accepted in the year 2013 = $18 \times \frac{82}{100} = 14.76 \ lakh$
Required difference = $28.8 - 14.76 = 14.04 \ lakh$

S2. Ans(a)
Sol.
Total rejected applications in the year 2012 = $15 \times \frac{20}{100} = 3\ lakh$
Total accepted applications in the year 2014 = $25 \times \frac{76}{100} = 19$ lakh
Required ratio = 3 : 19

S3. Ans(d)
Sol.
Total rejected applications in the year 2014 = $25 \times \frac{24}{100} = 6\ lakh$
Total accepted applications in the year 2015 = $28 \times \frac{85}{100} = 23.8$ lakh
Required percentage = $\frac{23.8\ -6}{23.8} \times 100$
$= 74.78 \approx 75\%$

S4. Ans(c)
Sol.
Total accepted applications in the year 2013 = $18 \times \frac{82}{100} = 14.76\ lakh$
Total accepted applications in the year 2016 = $32 \times \frac{90}{100} = 28.8\ lakh$
Required average = $\frac{14.76+28.8}{2}$
$= \frac{43..56}{2} = 21.78$ lakh

S5. Ans(b)
Sol.
Total applicants appeared in the year 2013 = $18 \times \frac{82}{100} \times \frac{3}{4} = 11.07\ lakh$
Total applicants appeared in the year 2015 = $28 \times \frac{85}{100} \times \frac{4}{5} = 19.04\ lakh$
Total appeared applicants = 11.07 + 19.04 = 30.11 lakh
Required percentage = $\frac{30.11}{18+28} \times 100 \approx 65\%$

S6. Ans(d)
Sol.
   Let total chocolate in box be 10c. Munch chocolate be a and kit-kat chocolate be b .
Probability of selecting Munch chocolate = $\frac{a}{10c} = \frac{3}{10}$
a = 3c   .(i)
Probability of selecting Kit Kat chocolate $= \frac{b}{10c} = \frac{2}{5}$
b = 4c   ...(ii)
ATQ,
a + b + 6 = 10c
$\Rightarrow$ 3c + 4c + 6 = 10c

$\Rightarrow c = 2$

So, total chocolate = 20

Required probability $= 1 - \frac{^6C_3 + \, ^8C_3 + \, ^6C_3}{^{20}C_3}$

$= 1 - \frac{(20 + 56 + 20)}{1140}$

$= \frac{1044}{1140}$

$= \frac{87}{95}$

S7. Ans.(b)
Sol.

Required probability $= \frac{5c_1 \times 7c_1 \times 6c_1}{18c_3}$

$= \frac{5 \times 7 \times 6 \times 3 \times 2}{18 \times 17 \times 16}$

$= \frac{35}{136}$

S8. Ans.(d)
Sol.

To be divisible by 5, the number must have '5' at unit's place.

		5

Ten's and hundred's places can be filled in 5 × 4 ways =20

Hence, answer=20

S9. Ans.(a)
Sol.

Total number of words possible from ANANAB

$= \frac{6!}{3!2!} = 60$

No. of word in which N is always together

$= \frac{5!}{3!} = 4 \times 5 = 20$

No. of in which N is never together = 60 – 20 = 40

Required probability $= \frac{40}{60} = \frac{2}{3}$

S10. Ans.(b)
Sol.
Total letter = 11
Required wage $= \frac{7! \, 5!}{2}$
$= 302400$

S11. Ans.(d)
Sol.
Total markers sold by A = 12% × 15,000 = 1800
X marker sold by A $= \frac{1800}{9} \times 4 = 800$
Y marker sold by A $= \frac{1800}{9} \times 3 = 600$
Z marker sold by A $= \frac{1800}{9} \times 2 = 400$
Let C.P. of one marker = 'x'
$\text{S. P. of X marker} = \frac{140}{100} \times x \times \frac{60}{100} = 0.84x$
$\text{S. P. of Y marker} = \frac{140}{100} \times x \times \frac{80}{100} = 1.12x$
$\text{S. P. of Z marker} = \frac{140}{100} \times x \times \frac{90}{100} = 1.26x$

Total C.P. = [800 + 600 + 400]x = 1800x
Total S.P. = 800 × 0.84x + 600× 1.12x + 400×1.26x
= 672x + 672x + 504x
=1848x
$\text{Total Profit Percentage} = \frac{1848x - 1800x}{1800x} \times 100 = \frac{48x}{1800x} \times 100 = 2\frac{2}{3}\%$

S12. Ans.(b)
Sol.
Total markers sold by E $= \frac{21}{100} \times 15000 = 3150$
X, Y and Z sold by E = 3 : 2 : 1
= 1575; 1050; 525
Let S.P. of each marker sold by E
= x, 1.5x, 3x
Total S.P. = x × 1575 + 1.5x × 1050 + 3x × 525
= 4725x
= 47250
⇒ x =10
S.P. of x, y, z = 10, 15, 30
Total marker sold by F $= \frac{20}{100} \times 15000 = 3000$
X, Y and Z sold by F = 4 : 5 : 3

= 1000; 1250; 750
Total S.P. of markers sold by F
= 10 × 1000 + 15 × 1250 + 30 × 750
= 10,000 + 18,750 + 22,500
= Rs.51250

S13. Ans.(c)
Sol.
Let, total C.P. = x
ATQ
$$x \times \frac{10}{9} - \left[x \times \frac{8}{9}\right] = 9000$$
$$\frac{2}{9}x = 9000$$
x = 40,500
Total S.P. of marks if C wants to earn 20% profit
$$= 40500 \times \frac{120}{100} = 48600$$
Let, S.P. of each marker = 2x, 3x, 4x
Total marker sold by C
$$= \frac{18}{100} \times 15000 = 2700$$
X, Y and Z marker sold by C = 9 : 7 : 9
= 972; 756; 972
Total S.P =972 × 2x + 756 × 3x + 972 × 4x = 8100x
Total S.P. of Y marker
$$= \frac{756 \times 3x \times 48600}{8100\ x} = \text{Rs. 13608}$$

S14. Ans.(b)
Sol.
Total markers sold by 'B'= $\frac{15}{100} \times 15000 = 2250$
X, Y and Z markers sold by B
= 3 : 4 : 3
= 675; 900; 675

	Satish	Veer
X markers sold =	60%	40%
=	405;	270
Y markers sold =	40%	60%
=	360;	540

Let S.P. of each X and Y marker = x, y
ATQ
405x + 360y = 8370 ...(i)
270x + 540y = 9180 ...(ii)
By solving (i), and (ii)

x = 10, y = 12

S15. Ans.(e)
Sol.

X type of Marker sold by A $= \dfrac{4}{9} \times \dfrac{12}{100} \times 1500 = 800$

X type of Marker sold by B $= \dfrac{3}{10} \times \dfrac{15}{100} \times 15000 = 675$

X type of Marker sold by C $= \dfrac{9}{25} \times \dfrac{18}{100} \times 15000 = 972$

X type of Marker sold by D $= \dfrac{6}{15} \times \dfrac{14}{100} \times 15000 = 840$

X type of Marker sold by E $= \dfrac{3}{6} \times \dfrac{21}{100} \times 15000 = 1575$

X type of Marker sold by F $= \dfrac{4}{12} \times \dfrac{20}{100} \times 15000 = 1000$

E sold maximum number of X type of markers