Quiz Date: 22nd May 2020

Q1. Three pieces of cakes of weighing $\frac{9}{2}$ lbs, $\frac{27}{4}$ lbs and $\frac{36}{5}$ lbs, respectively, are to be divided into parts of equal weights. Further, each part must be as heavy as possible. If one part is served to each guest, then what is the maximum number of guests that could be entertained?
(a) 54
(b) 72
(c) 20
(d) 41
(e) 48

Q2. A shopkeeper bought 150 calculators at the rate of Rs. 250 per calculator. He spent Rs. 2500 on transportation and packing. If the marked price of calculator is Rs. 320 per calculator and the shopkeeper gives a discount of 5% on the marked price then what will be the percentage profit gained by the shopkeeper in this business?
(a) 20%
(b) 14%
(c) 25%
(d) 19%
(e) 32%

Q3. Three professors Dr. Gupta, Dr. Sharma and Dr. Singh are evaluating answer sheets of economics. Dr. Gupta is 40% more efficient than Dr. Sharma, who is 20% more efficient than Dr. Singh. If Dr. Gupta works alone he takes 10 days less than Dr. Sharma to complete the evaluation work. Dr. Gupta starts the evaluation work and left the work after working 10 days and then Dr. Sharma takes over. Dr. Sharma evaluates for next 15 days and then stops. In how many days, Dr. Singh can complete the remaining evaluation work?
(a) 7.2 days
(b) 9.5 days
(c) 11.5 days
(d) 12.5 days
(e) 14 days

Q4. Raghav studies about Hadappa culture and finds that 33 ⅓% people were interested in hunting. Three fourth of remaining were interested in inventions and rest were interested in music and other activities. The ratio of male to female who were interested in music and other activities was 5 : 4. If total population of Hadappa culture was 27000 then find the total number of males who were interested in music and other activities.
(a) 2000
(b) 2400
(c) 2500
(d) 3000
(e) 3200

Q5. The working efficiency of three friends P, Q and R is in the ratio of 3 : 4 : 5. Q can do three fourth of a work in 18 days alone. If all of them work together the same work is completed in how many days?
(a) 6 days
(b) 8 days
(c) 10 days
(d) 12 days
(e) 14 days

Q6. The population of a city increases in first year at a rate of 10%. In second year it decreases by 15% and in third year it again increases by 25%. If population of city after second year is 37,400 then find the initial population of city.
(a) 40,000
(b) 42,000
(c) 45,000
(d) 30,000
(e) 32,000

Q7. In how many different ways the letters of the word 'KROASHIAN' can be arranged such that 'SH' never come together and 'K' and 'N' always come at end places?
(a) 3240
(b) 4230
(c) 3640
(d) 3600
(e) 4020

Q8. A trader bought onions at a rate of Rs. 20 per kg. He bought 2.4 quintal onions out of which $16\frac{2}{3}$% onions were rotten. To overcome this, he sold the remaining onions at a price of Rs. 30 per kg. Find his overall profit/loss percentage in business.
(a) 50%
(b) 25%
(c) 40%
(d) 20%
(e) 30%

Q9. 4/5th of the voters in Bellary promised to vote for Sonia and the rest promised to vote for Sushma. Of these voters, 10% of the voters who had promised to vote for Sonia, did not vote on the election day, while 20% of the voters who had promised to vote for Sushma did not vote on the election day. What is the total no. of votes polled if Sonia got 216 votes?
(a) 200
(b) 300
(c) 264
(d) 100
(e) None of these

Q10. At IIM Bangalore, 60% of the students are boys and the rest are girls. Further 15% of the boys and 7.5% of the girls are getting a fee waiver. If the number of those getting a fee waiver is 900, find the total number of students getting 50% concession if it is given that 50% of those not getting a fee waiver are eligible to get half fee concession?
(a) 3600
(b) 2800
(c) 3200
(d) 3300
(e) None of these

Q11. A manufacturer estimates that on inspection 12% of the articles he produces will be rejected. He accepts an order to supply 22,000 articles at Rs. 7.50 each. He estimates the profit on his outlay including the manufacturing of rejected articles, to be 20%. Find the cost of manufacturing each article.
(a) Rs. 6
(b) Rs. 5.50
(c) Rs. 5
(d) Rs. 4.50
(e) None of these

Q12. A dealer marks articles at a price which is 30% above than its cost price. 6% of the consignment of goods was lost in a fire in his premises, 24% of total was soiled and had to be sold at half the cost price. If the remainder was sold at the marked price, what percentage profit or loss did the dealer make on that consignment?
(a) 2%
(b) 2.5%
(c) 3%
(d) 6.2%
(e) None of these

Directions (13-14): Ramesh and Suresh decided to meet at a common point at the same time in the river. Ramesh had to travel 42 km upstream in the river and Suresh had to travel $35\frac{5}{7}$% less distance downstream than that of Ramesh to meet at a common point. They both sets off in their respective boats at the same time and speed of Ramesh's boat is

20 km/hr more than the speed of Suresh boat. It is given that Suresh covers 280 km upstream in 35 hours.

Q13. Find the speed of stream of river?
(a) 6 km/hr
(b) 8 km/hr
(c) 5 km/hr
(d) 10 km/hr
(e) 4 km/hr

Q14. After meeting, if they decided to return to their original places but Ramesh travelled for 19 km and Suresh travelled for 16 km, then what is the sum of time taken by both in covering these distances?
(a) 150 min
(b) 120 min
(c) 180 min
(d) 90 min
(e) 60 min

Q15. A sum of Rs. 725 is lent in the beginning of a year at a certain rate of interest. After 8 months, a sum of Rs. 362.50 more is lent but at the rate twice the former. At the end of the year, Rs. 33.50 is earned as interest from both the loans. What was the original rate of interest?
(a) $2\frac{1}{2}\%$
(b) $4\frac{3}{4}\%$
(c) 5%
(d) $5\frac{8}{15}\%$
(e) None of these

Solutions

S1. Ans.(d)
Sol.

Total, the weight of three pieces $= \left(\frac{9}{2} + \frac{27}{4} + \frac{36}{5}\right) = \frac{369}{20} = 18.45$ lbs

Required weight of a single piece is HCF of $\left(\frac{9}{2}, \frac{27}{4}, \frac{36}{5}\right) = \frac{\text{HCF of } (9, 27, 36)}{\text{LCM of } (2, 4, 5)} = \frac{9}{20}$ lbs

$\therefore$ Number of guests $= \frac{18.45}{\frac{9}{20}} = \frac{18.45 \times 20}{9} = 41.$

S2. Ans.(b)
Sol.
CP of 150 calculators = 150 × 250 = Rs. 37,500

Net CP considering transportation and packing cost = 37,500 + 2,500 = Rs. 40,000
Marked price of 150 calculators = 150 × 320 = Rs. 48,000
Selling price after discount = $48000 \times \frac{95}{100}$ = Rs. 45,600
Percentage profit = $\frac{45,600 - 40,000}{40,000} \times 100 = 14\%$

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S3. Ans.(a)
Sol.
From given information
The ratio of the efficiencies of Dr. Gupta, Dr. Sharma and Dr. Singh are = 42: 30: 25
Hence, the ratio of time taken by Dr. Gupta and Dr. Sharma is 5: 7
As, Dr. Gupta takes 10 days less time than Dr. Sharma so time taken by them will be 25 days and 35 days respectively
Hence, the time taken by Dr. Singh will be 42 days.

Part of the work completed by Dr. Gupta $= \dfrac{2}{5}$

Part of the work completed by Dr. Sharma $= \dfrac{3}{7}$

The remaining work, i. e. , $\dfrac{6}{35}$ will be completed by Dr. Singh in
$\dfrac{42 \times 6}{35} = 7.2$ days

S4. Ans.(c)
Sol.
$\because 33\frac{1}{3}\% = \frac{1}{3}$ & $66\frac{2}{3}\% = \frac{200}{3}\% = \frac{2}{3}$
$\therefore$ No. of people who are interest in
music and other activities
$= \left[1 - \left(\frac{1}{3} + \left(1 - \frac{1}{3}\right) \times \frac{3}{4}\right)\right] \times 27000$
$= \left(1 - \frac{5}{6}\right) \times 27000 = \frac{1}{6} \times 27000$
$= 4500$
$\therefore$ Required population $= \frac{5}{9} \times 4500 = 2500$

S5. Ans.(b)
Sol.

Working efficiency of P, Q, R in ratio 3 : 4 : 5

So, ratio of time to complete the same work

$= \frac{1}{3} : \frac{1}{4} : \frac{1}{5} = 20 : 15 : 12$

Since, $\frac{3}{4}$th work Q can complete in 18 days

So, whole work Q can complete in

$\rightarrow 18 \times \frac{4}{3} = 24$ days

$\therefore$ Time taken by P to complete whole work alone

$= \frac{24}{15} \times 20 = 32$ days

And, time taken by R to complete the whole work alone

$= \frac{12}{15} \times 24 = \frac{96}{5}$ days

$\therefore$ One day's work of all of them together

$= \frac{1}{24} + \frac{1}{32} + \frac{5}{96}$

$= \frac{4+3+5}{96}$

$= \frac{12}{96} = \frac{1}{8}$

$\therefore$ Required answer = 8 days.

S6. Ans.(a)
Sol.

Let initial population of city = $100x$

ATQ,

$100x \times \frac{110}{100} \times \frac{85}{100} = 37,400$

$\Rightarrow x = 400$

$\therefore$ initial Population of city = 400 × 100 = 40,000

S7. Ans.(d)
Sol.

Total words = 9 (2A, K, R, O, S, H, I, N)

No. of ways when 'SH' come together and "K" and "N" comes at end $= \frac{6! \times 2! \times 2!}{2!} = 1440$

$\therefore$ No. of ways when 'SH' do not come together and "K" and "N" comes at end $= \frac{7! \times 2!}{2!} - \frac{6! \times 2! \times 2!}{2!}$

= 5040 - 1440

= 3600

S8. Ans.(b)
Sol.

Total C.P. of onions
= 20 × 2.4 × 100 = 4800 rupees
Total S.P. = $\frac{250}{300}$ × 2.4 × 30 × 100 = 6000 rupees
∴ Required profit percentage
= $\frac{6000-4800}{4800}$ × 100 = 25%

S9. Ans.(c)
Sol.
Let total voter =100x
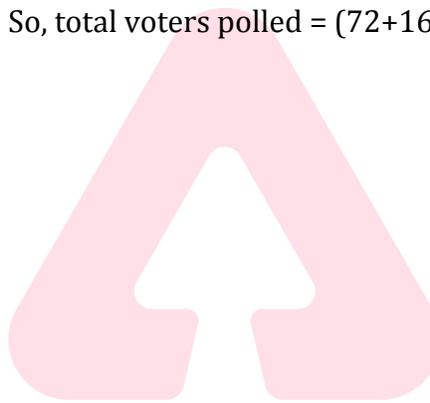Voters promised to vote for Sonia= 80x
Voters promised to vote for Sushma= 20x
Voters who voted for Sonia= $80x \times \frac{90}{100} = 72x$
Voters who voted for Sushma= $20x \times \frac{80}{100} = 16x$
Now ATQ, $72x = 216$
  $x = 3$
So, total voters polled = (72+16) × 3 = 264

S10. Ans.(d)
Sol.
Let total students are x
$\frac{15}{100} \times \frac{60}{100}x + \frac{15}{200} \times \frac{40}{100}x = 900$
$\frac{9}{100}x + \frac{3x}{100} = 900$
$12x = 900 \times 100$
$x = 7500$
Total students getting fee waiver = 900
Required no. of students = $\frac{(7500-900)}{2} = 3300$

S11. Ans.(b)
Sol.
If 100 articles are manufactured then 12 will be rejected
Total selling price of 88 articles = 88 × 75

Total cast price $= \frac{660 \times 100}{120} = 550$

Cast of manufacturing per article = 5.5 Rs

S12. Ans.(c)
Sol.
Let total goods be = 100
& cost price per good = 100
So,
Marked price per good = 130
Total cost price = 10,000
Total selling price $= 70 \times 130 + 24 \times 50$
$= 9100 + 1200 = 10300$
% profit $= \frac{300}{10,000} \times 100 = 3\%$

S13. Ans.(c)
Sol.
Ramesh had to travel =42km

So, Suresh had to travel $= \left(1 - \frac{5}{14}\right) \times 42 = 27$ km

Let speed of Suresh = x km/hr.
And speed of stream = y km/hr.
Then, ATQ
$$\frac{42}{(x + 20) - y} = \frac{27}{x + y}$$
42x +42y = 27x + 540 – 27y
15x + 69y = 540
5x + 23y = 180   …(i)
Also,
$$\frac{280}{x - y} = 35$$
x – y = 8   …(ii)
Solving (i) and (ii)
x = 13 km/hr.
y = 5 km/hr.

S14. Ans.(a)
Sol.
In return Journey Ramesh will travel downstream and Suresh will travel upstream
And
Speed of Suresh $= 13 km/hr$
Speed of Ramesh$= 33 km/hr$

So, ATQ,
$$\frac{19}{33 + 5} + \frac{16}{13 - 5}$$

$$\frac{19}{38} + \frac{16}{8} = 0.5 + 2 = 2.5hr$$
$$= 150 \text{ min.}$$

S15. Ans.(e)
Sol.

Let the original rate be R%. Then, new rate = (2R) %.

$$\therefore \left(\frac{725 \times R \times 1}{100}\right) + \left(\frac{362.50 \times 2R \times 1}{100 \times 3}\right) = 33.50$$

$$\Rightarrow (2175 + 725) R = 33.50 \times 100 \times 3 = 10050$$

$$\Rightarrow R = \frac{10050}{2900} = 3\frac{27}{58}\%$$

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