

Quiz Date: 25th September 2020

Q1. In an examination it is required to get 65% of the aggregate marks to pass. A student gets 684 marks and is declared failed by 8% marks. What are the maximum aggregate marks that a student can get?

- (a) 950
- (b) 1200
- (c) 1050
- (d) 1100
- (e) Cannot be determined

Q2. A and B are two pipes which can fill a tank individually in 15 minutes and 25 minutes respectively, however there is a leakage at the bottom of tank which can empty the filled tank in 30 minutes. If the tank is empty initially, how much time will both the taps take to fill the tank (leakage is still there)?

- (a) $13\frac{5}{11}$ minutes
- (b) $13\frac{7}{11}$ minutes
- (c) $13\frac{2}{11}$ minutes
- (d) $12\frac{7}{11}$ minutes
- (e) None of these

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Q3. A solid metallic cylinder having 6cm radius and 24cm height is melted and recast into small spherical balls having 6cm diameter. Find the number of balls made after casting?

- (a) 12
- (b) 27
- (c) 18
- (d) 24
- (e) 9

Q4. In how many different ways can the letters of the word 'VIRTUAL' be arranged such that all the vowels come together?

- (a) 720
- (b) 840
- (c) 5040
- (d) 1680
- (e) 120

Q5. Simple interest on Rs. 500 for 4 years at 6.25% per annum is equal to the simple interest on Rs. 400 at 5% per annum for a certain period of time. The period of time is:

- (a) 4 years
- (b) 5 years

- (c) $6\frac{1}{4}$ years
(d) $8\frac{2}{3}$ years
(e) None of these

Q6. A man engaged a servant on the condition that he would pay him Rs. 90 and a turban after service of one year. He served only for nine months and received the turban and an amount of Rs. 65. The price of turban is

- (a) Rs. 25
(b) Rs. 18.75
(c) Rs. 10
(d) Rs. 2.50
(e) None of these

Q7. A fraction becomes $\frac{1}{6}$ when 4 is subtracted from its numerator and 1 is added to its denominator. If 2 is added to numerator and 1 is added to denominator then it becomes $\frac{1}{3}$. Then, the LCM of the numerator and denominator of the said fraction, must be

- (a) 14
(b) 350
(c) 5
(d) 70
(e) None of these

Q8. The batting average of 40 innings of a cricket player is 50 runs. His highest score exceeds his lowest score by 172 runs. If these two innings are excluded, the average of the remaining 38 innings is 48 runs. The highest score of the player is

- (a) 165 runs
(b) 170 runs
(c) 172 runs
(d) 174 runs
(e) None of these

Q9. A barrel contains a mixture of wine and water in the ratio 3 : 1. How much fraction of the mixture must be drawn off and substituted by water so that the ratio of wine and water in the resultant mixture in the barrel becomes 1 : 1 ?

- (a) $\frac{1}{4}$
(b) $\frac{1}{3}$
(c) $\frac{3}{4}$
(d) $\frac{2}{3}$
(e) None of these

Q10. Two workers A and B working together completed a job in 5 days. If A worked twice as efficiently as he actually did and B worked $\frac{1}{3}$ as efficiently as he actually did, the work would have been completed in 3 days. To complete the job alone. A would require

- (a) $5\frac{1}{5}$ days
- (b) $6\frac{1}{4}$ days
- (c) $7\frac{1}{2}$ days
- (d) $8\frac{3}{4}$ days
- (e) None of these

Q11. A vendor bought 8 onions in Rs. 3. To get a profit of 60%, at what rate he will sell these onions?

- (a) 2 in Rs. 1
- (b) 3 in Rs. 2
- (c) 5 in Rs. 3
- (d) 12 in Rs. 5
- (e) 3 in Rs. 5

Q12. In a basket there are 3 red, 4 green and 5 white bolls respectively. 3 bolls are selected randomly. Find the probability that these bolls are green.

- (a) $\frac{7}{53}$
- (b) $\frac{5}{36}$
- (c) $\frac{2}{55}$
- (d) $\frac{1}{55}$
- (e) None of these

Q13. A, B and C start a business together by investing a total amount of 50,000. Sum of A is Rs. 4,000 more than that of B and sum of B is Rs. 5,000 more than that of C. If total profit at the end of a year was found to be Rs. 35,000, what is the share of A in the profit?

- (a) Rs. 11,900
- (b) Rs. 14,700
- (c) Rs. 13,600
- (d) Rs. 8,470
- (e) Rs. 12,700

Q14. A and B can complete a work in 12 days together, B and C can complete the same work in 15 days together and A and C can complete that work in 20 days together. In how many days A can complete the same work alone?

- (a) 30 days
- (b) 40 days
- (c) 25 days
- (d) 50 days
- (e) 45 days

Q15. One year before, the age of a person was 4 times of his son's age. 6 years hence, his age will be 9 years more than twice age of his son. What is the ratio of their current ages?

- (a) 9 : 2
 (b) 11 : 3
 (c) 12 : 5
 (d) 13 : 4
 (e) 4 : 1

Solutions

S1. Ans.(b)

Sol.

Let the maximum marks be x.

$$\therefore (65-8) \% \text{ of } x = 684$$

$$\Rightarrow x \times \frac{57}{100} = 684$$

$$\Rightarrow x = \frac{684 \times 100}{57} = 1200$$

S2. Ans.(b)

Sol.

Part of tank filled in 1 minute by all three pipes

$$= \frac{1}{15} + \frac{1}{25} - \frac{1}{30} = \frac{10 + 6 - 5}{150}$$

$$= \frac{11}{150}$$

$$\text{Hence, the tank will be filled in} = \frac{150}{11} = 13\frac{7}{11} \text{ minute}$$

S3. Ans.(d)

Sol.

Let Number of spherical balls made = n

Volume of Cylinder = Volume of spherical ball \times n

$$\pi r^2 h = \frac{4}{3} \pi r^3 \times n$$

$$\pi \times 6^2 \times 24 = \frac{4\pi}{3} \times 3^3 \times n$$

$$n = 24$$

S4. Ans.(a)

Sol.

The word VIRTUAL consists of 7 distinct letters
 in which vowels are A, I, U

$$\therefore \text{Required number of arrangements} = 5! \times 3!$$

$$= 5 \times 4 \times 3 \times 2 \times 1 \times 3 \times 2 \times 1$$

$$= 720$$

S5. Ans.(c)

Sol.

Let the required time = t years

According to the question,

$$\frac{500 \times 4 \times 6.25}{100} = \frac{400 \times 5 \times t}{100}$$

$$5 \times 4 \times 625 = 400 \times 5 \times t$$

$$t = \frac{625}{100} = \frac{25}{4} = 6\frac{1}{4} \text{ years}$$

S6. Ans.(c)

Sol.

12 months' salary = Rs. 90 + turban

$$\therefore 9 \text{ months' salary} = (\text{Rs. } 90 + \text{turban}) \times \frac{9}{12}$$

$$= \text{Rs. } 90 \times \frac{3}{4} + \frac{3}{4} \text{ turban}$$

$$= \text{Rs. } \frac{135}{2} + \frac{3}{4} \text{ turban}$$

$$\therefore \text{Rs. } \frac{135}{2} + \frac{3}{4} \text{ turban}$$

$$= \text{Rs. } 65 + \text{turban}$$

$$\therefore \frac{1}{4} \text{ turban} = \frac{135}{2} - 65 = \text{Rs. } \frac{5}{2}$$

$$\therefore \text{Turban} \Rightarrow \frac{5}{2} \times 4 = \text{Rs. } 10$$

S7. Ans.(d)

Sol.

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Let the original fraction be $\frac{x}{y}$.

$$\therefore \frac{x-4}{y+1} = \frac{1}{6}$$

$$\Rightarrow 6x - 24 = y + 1$$

$$\Rightarrow 6x - y = 25 \quad \dots (i)$$

Again,

$$\frac{x+2}{y+1} = \frac{1}{3}$$

$$\Rightarrow 3x + 6 = y + 1$$

$$\Rightarrow 3x - y = -5 \quad \dots (ii)$$

By equation (i) - (ii),

$$6x - y - 3x + y = 25 + 5$$

$$\Rightarrow 3x = 30$$

$$\Rightarrow x = 10$$

From equation (i),

$$60 - y = 25$$

$$\Rightarrow y = 35$$

$$\text{LCM of 10 and 35} = 70$$

S8. Ans.(d)

Sol.

Let the highest score be x .

$$\therefore \text{Lowest score} = x - 172$$

$$\therefore x + x - 172 = 40 \times 50 - 38 \times 48$$

$$\Rightarrow 2x - 172 = 2000 - 1824 = 176$$

$$\Rightarrow 2x = 176 + 172 = 348$$

$$\Rightarrow x = \frac{348}{2} = 174$$

S9. Ans.(b)

Sol.

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Let the barrel contain 4 litres of mixture.

∴ Wine = 3 litres

Water = 1 litre

Let x litres mixture is taken out.

∴ Wine in $(4 - x)$ litres mixture = $\frac{3}{4}(4 - x)$

On adding x litres water, water in mixture

$$= (4 - x) \times \frac{1}{4} + x$$

$$= 1 - \frac{x}{4} + x$$

$$= \frac{4 - x + 4x}{4} = \frac{4 + 3x}{4}$$

$$\therefore \frac{3}{4}(4 - x) = \frac{4 + 3x}{4}$$

$$\Rightarrow 3 - \frac{3x}{4} = 1 + \frac{3x}{4}$$

$$\Rightarrow 2 = \frac{6x}{4}$$

$$\Rightarrow x = \frac{2 \times 4}{6} = \frac{4}{3}$$

∴ Required answer = $\frac{\frac{4}{3}}{4} = \frac{1}{3}$

S10. Ans.(b)

Sol.

If A alone does the work in x days and B alone does the work in y days, then

$$\frac{1}{x} + \frac{1}{y} = \frac{1}{5} \quad \dots (i)$$

$$\text{Again, } \frac{2}{x} + \frac{1}{3y} = \frac{1}{3} \quad \dots (ii)$$

By equation (ii) $\times 3 - (i)$.

$$\frac{6}{x} + \frac{1}{y} - \frac{1}{x} - \frac{1}{y} = 1 - \frac{1}{5}$$

$$\Rightarrow \frac{6}{x} - \frac{1}{x} = \frac{4}{5}$$

$$\Rightarrow \frac{6 - 1}{x} = \frac{4}{5}$$

$$\Rightarrow x = \frac{25}{4} = 6\frac{1}{4} \text{ days.}$$

S11. Ans.(c)

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Sol.

$$\begin{aligned}\text{Required rate} &= \frac{3}{8} \times \frac{160}{100} \\ &= \frac{3}{5} \text{ rupee per onion}\end{aligned}$$

S12. Ans.(d)

Sol.

$$\text{Required probability} = \frac{{}^4C_2}{{}^{12}C_2} = \frac{4 \times 3 \times 2}{12 \times 11 \times 10} = \frac{1}{55}$$

S13. Ans.(b)

Sol.

Let C invests Rs. x

(A's profit): (B's profit): (C's profit) = (x + 9,000): (x + 5,000): x

$$\& 3x + 14,000 = 50,000$$

$$\Rightarrow x = 12,000$$

$$\begin{aligned}\therefore \text{A's profit} &= \frac{21}{21 + 17 + 12} \times 35,000 \\ &= 14,700 \text{ rupees}\end{aligned}$$

S14. Ans.(a)

Sol.

$$\begin{aligned}(\text{A} + \text{B} + \text{C})'s \text{ one day work} &= \frac{1}{2} \left(\frac{1}{12} + \frac{1}{15} + \frac{1}{20} \right) \\ &= \frac{1}{10}\end{aligned}$$

$$\text{A's one day work} = \frac{1}{10} - \frac{1}{15} = \frac{1}{30}$$

\therefore A can complete the work in 30 days alone.

S15. Ans.(b)

Sol.

Let one year before, the age of person was x years

$$\therefore \text{age of son 1 year before} = \frac{x}{4} \text{ years}$$

According to the questions,

$$(x + 7) = 2 \left(\frac{x}{4} + 7 \right) + 9$$

$$\Rightarrow x = 32 \text{ years}$$

$$\therefore \text{ratio of their current ages} = 33: 9 = 11: 3$$