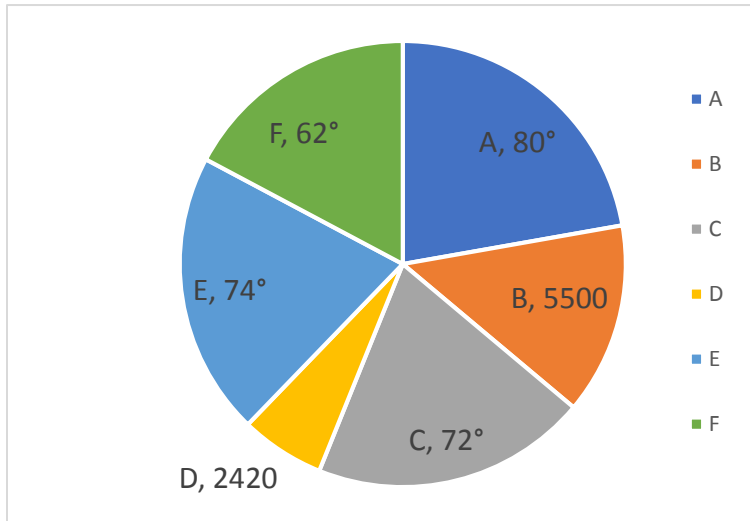


Quiz Date: 19th April 2020

Directions (1-5): The pie chart given below shows the distribution of number of literate persons in six villages in terms of absolute value or degree measures.

The table shows the value of percentage by which illiterate persons are more or less than literate persons.

Note: Difference between degree measure of village B and D is 28°.



Villages	Percentage by which illiterates are more or less than literates
A	$13\frac{7}{11}\%$ more
B	$9\frac{1}{11}\%$ less
C	25% more
D	$18\frac{2}{11}\%$ more
E	25% less
F	$18\frac{2}{11}\%$ more

Q1. Find the total number of illiterate persons in village B and E together?

- (a) 11150
- (b) 10105
- (c) 11105
- (d) 11050
- (e) 10050

Q2. Illiterate persons of village A are what percent (approximate) of total literate persons of all villages together?

- (a) 25.3%

- (b) 23.5%
- (c) 24.6%
- (d) 22.4%
- (e) 28.6%

Q3. Find the ratio of total literate persons of villages A and D together and these of villages F and B together?

- (a) 65 : 51
- (b) 51 : 76
- (c) 56: 51
- (d) 51 : 56
- (e) None of these



Q4. If $\frac{15}{26}$ th of total illiterate persons in village F are males while $\frac{13}{22}$ th of total literate persons in same village are males, then find the total number of males in village F.

- (a) 5870
- (b) 8680
- (c) 6860
- (d) 8750
- (e) 8570

Q5. What is the average (in terms of degree measures) of the contribution of literate persons of villages B, C, D and E together?

- (a) 55.4°
- (b) 56.8°
- (c) 54.5°
- (d) 52.5°
- (e) None of these

Directions (6-10): What should come in place of the question mark (?) in the following number series ?

Q6. 12, 7, 8, 13, 27, ?

- (a) 75
- (b) 76
- (c) 60
- (d) 65

(e) 68.5

Q7. 15, 24, 49, 98, 179, ?

(a) 310

(b) 300

(c) 305

(d) 315

(e) None of these

Q8. 5, 6, 14, 45, ?, 925

(a) 184

(b) 243

(c) 234

(d) 232

(e) None of these

Q9. 9, 11, 22, 51, 107, ?

(a) 195

(b) 210

(c) 200

(d) 199

(e) None of these

Q10. 67, 75, 59, 91, 27, ?

(a) 180

(b) 155

(c) 170

(d) 120

(e) None of these

Q11. A shopkeeper has mixtures of nitrous oxide and water in two vessels A and B. Vessel A and vessel B contains mixtures of nitrous oxide and water in the ratio of 7 : 2 & 5 : 3 respectively. The shopkeeper has taken out the mixtures from vessels A and B in the ratio of 9 : 8 and mixed it in vessel C. If shopkeeper sold 68 gm of mixture from vessel C on the cost price of nitrous oxide, which is Rs. 80 per gm, find profit of shopkeeper?

(a) $39\frac{2}{3}\%$

(b) $41\frac{2}{3}\%$

(c) $45\frac{2}{3}\%$

(d) $37\frac{2}{3}\%$

(e) $35\frac{2}{3}\%$

Q12. Speeds of three motor boats A, B and C are equal and all cover 8 km of distance upstream in 48 minutes. Ratio between speed of motor boats and speed of stream is 6 : 1. On first day A starts in downstream from point P to Q, which shifts 9 km away from point P each day. On

second day B starts from point P in downstream and reach at point Q in 4.5 hours, then find time take by C on third day to reach at point Q, (consider speed of stream same on all three days)?

- (a) $4\frac{1}{7}$ hours
- (b) $5\frac{1}{7}$ hours
- (c) $3\frac{1}{7}$ hours
- (d) $2\frac{1}{7}$ hours
- (e) $9\frac{1}{7}$ hours

Q13. A man invested an amount into three schemes P, Q and R in the ratio of 5 : 6 : 9 at the rates of 20%, 15% and 10% respectively. Schemes P and R offered compound interest annually, while scheme Q offered simple interest annually. Total interest received by man from scheme P and Q together is Rs. 1899 more than total interest received from scheme R after two years. If man would invest total amount on C.I at the rate of 15% p.a., then find the total interest received by the man?

- (a) 5800 Rs.
- (b) 5805 Rs.
- (c) 5580 Rs.
- (d) 5590 Rs.
- (e) 5900 Rs



Q14. Train A running at the speed of 108 km/hr crosses a man, who running in the opposite direction at the speed of 12 km/hr in 7.2 sec. If speed of train A increased by 25% and it takes 48 seconds to cross another train B, which running at the speed of 90 km/hr in same direction. Find the length of train B?

- (a) 280 meters
- (b) 360 meters
- (c) 180 meters
- (d) 160 meters
- (e) 220 meters

Q15. There are two buckets, which contains some fruits. First bucket contains three mangos and six oranges, second bucket contains seven mangos and two oranges. One bucket is

selected at random and one fruit is drawn from it. Find the probability of selected fruit is not mango?

- (a) $\frac{2}{9}$
 (b) $\frac{5}{9}$
 (c) $\frac{1}{9}$
 (d) $\frac{4}{9}$
 (e) $\frac{7}{9}$

Solutions

S (1-5):

Degree measure of B + D = $360^\circ - (80^\circ - 72^\circ - 74^\circ + 62^\circ)$
 = 72°

Also, difference b/w degree measures of B & D = 28°

\therefore Degree measure of B and D is 50° and 22° respectively as B is more than D.

Now total literates in all villages together

$$= \frac{5500}{50} \times 360$$

$$= 39600$$

S1. Ans.(c)

Sol.

Illiterate persons in village B

$$= \left(1 - \frac{1}{11}\right) \times 5500$$

$$= 5000$$

Illiterates in Village E

$$= \frac{75}{100} \times \frac{74}{360} \times 39600 = 6105$$

$$\therefore \text{Total sum} = 5000 + 6105 = 11105$$

S2. Ans.(a)

Sol.

Illiterate persons of village A

$$= 39600 \times \frac{80}{360} \times \left(1 + \frac{3}{22}\right) = 10,000$$

$$\therefore \text{Required \%} = \frac{10,000}{39600} \times 100 \approx 25.3\%$$

S3. Ans.(d)

Sol.

$$\text{Required ratio} = \frac{A + D}{B + F} = \frac{80^\circ + 22^\circ}{50^\circ + 62^\circ} = \frac{51}{56}$$

S4. Ans.(b)

Sol.

Total illiterate male persons in village F

$$= 39600 \times \frac{62}{360} \times \left(1 + \frac{2}{11}\right) \times \frac{15}{26}$$

$$= 4650$$

Total literate male persons in village F

$$= 39600 \times \frac{62}{360} \times \frac{13}{22} = 4030$$

$$\therefore \text{Total number of males in village F} = 4650 + 4030$$

$$= 8680$$

S5. Ans.(c)

Sol.

Required average

$$= \frac{1}{4}(50 + 72 + 22 + 74)$$

$$= 54.5^\circ$$

S6. Ans.(e)

Sol.

Pattern is,

$$\times 0.5 + 1, \times 1 + 1, \times 1.5 + 1, \times 2 + 1, \times 2.5 + 1$$

$$27 \times 2.5 + 1 = 68.5$$

S7. Ans.(b)

Sol.

Pattern is,

15	24	49	98	179	300
9	25	49	81	121	
3^2	5^2	7^2	9^2	11^2	

S8. Ans.(a)

Sol.

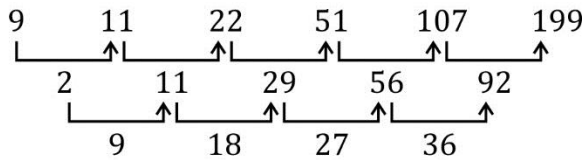
Pattern is,

$$\times 1 + 1, \times 2 + 2, \times 3 + 3, \times 4 + 4, \times 5 + 5$$

S9. Ans.(d)

Sol.

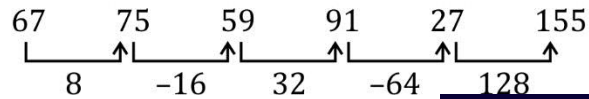
Pattern is,



S10. Ans.(b)

Sol.

Pattern is,



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S11. Ans.(b)

Sol.

In vessel A

Nitrous oxide : Water = 7 : 2

In vessel B

Nitrous oxide : Water = 5 : 3

In 68 gm of mixture

Mixture taken from vessel A

$$= 68 \times \frac{9}{17} = 36 \text{ gm}$$

$$\text{Mixture taken from vessel B} = 68 \times \frac{8}{17} = 32 \text{ gm}$$

Total nitrous oxide in 68gm of mixture

$$= 36 \times \frac{7}{9} + 32 \times \frac{5}{8}$$

$$= 28 + 20$$

$$= 48 \text{ gm}$$

Total cost of 68 gm mixture = 68×80

$$= 5440 \text{ Rs}$$

Cost of nitrous oxide

$$= 48 \times 80$$

$$= 3840$$

$$\text{Required profit} = \frac{5440 - 3840}{3840} \times 100$$

$$= 41\frac{2}{3}\%$$

S12. Ans.(b)

Sol.

Speed of motor boats in upstream

$$= 8 \times \frac{60}{48}$$

$$= 10 \text{ km/hr}$$

ATQ,

Let speed of motor boats be $6x$ km/hr and speed of stream be x km/hr

$$6x - x = 10$$

$$x = 2 \text{ km/hr}$$

Downstream speed of all boats

$$= (6 \times 2 + 2)$$

$$= 14 \text{ km/hr}$$

Let distance between point P to Q on first day = y km

Second day distance = $(y + 9)$

$$14 = \frac{y + 9}{4.5}$$

$$y = 63 - 9$$

$$y = 54 \text{ km}$$

$$y = 54 \text{ km}$$

Distance travelled on third day = $54 + 9 \times 2$

$$= 72 \text{ km}$$

Total time taken by boat C on third day to reach point Q

$$= \frac{72}{14}$$

$$= \frac{14}{7}$$

$$= 5\frac{1}{7} \text{ hours}$$

S13. Ans(b)

Sol.

Let man invested in scheme P, Q and R be Rs. $5x$, Rs. $6x$ and Rs. $9x$ respectively

$$\text{Equivalent CI of two years on } 20\% = 20 + 20 + \frac{20 \times 20}{100}$$

$$= 44\%$$

$$\text{Equivalent CI of two years on } 10\% = 10 + 10 + \frac{10 \times 10}{100}$$

$$= 21\%$$

ATQ -

$$5x \times \frac{44}{100} + 6x \times \frac{15 \times 2}{100} - 9x \times \frac{21}{100} = 1899$$

$$2.2x + 1.8x - 1.89x = 1899$$

$$2.11x = 1899$$

$$x = \frac{1899}{2.11}$$

$$x = 900 \text{ Rs.}$$

$$\text{total amount} = 900 \times (5 + 6 + 9)$$

$$= 18000 \text{ Rs.}$$

If man invested total amount on C.I at the rate of 15% p.a.

$$\begin{aligned} \text{Equivalent CI of two years on 15\%} &= 15 + 15 + \frac{15 \times 15}{100} \\ &= 32.25 \end{aligned}$$

$$\begin{aligned} \text{Required interest} &= 18000 \times \frac{32.25}{100} \\ &= 5805 \text{ Rs.} \end{aligned}$$

S14. Ans(b)

Sol.

Let length of train A be L meters

$$(108 + 12) \times \frac{5}{18} = \frac{L}{7.2}$$

$$L = 240 \text{ meters}$$

$$\text{New speed of train A} = 108 \times \frac{125}{100} = 135 \text{ km/hr}$$

Let length of train B be S meters

$$(135 - 90) \times \frac{5}{18} = \frac{240 + S}{48}$$

$$S = 360 \text{ meters}$$

S15. Ans(d)

Sol.

$$\begin{aligned} \text{Probability of getting mango} &= \frac{1}{2} \times \frac{{}^3C_1}{{}^9C_1} + \frac{1}{2} \times \frac{{}^7C_1}{{}^9C_1} \\ &= \frac{1}{2} \times \frac{3}{9} + \frac{1}{2} \times \frac{7}{9} \\ &= \frac{5}{9} \end{aligned}$$

$$\begin{aligned} \text{Probability of not getting mango} &= 1 - \frac{5}{9} \\ &= \frac{4}{9} \end{aligned}$$

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