Quiz Date: 11th June 2020

Directions (1-5): Table given below shows the distribution of vehicles of two companies (Suzuki and Bajaj) sold by five sellers. In this some are two wheelers and remaining are four wheelers. Study the data carefully and answer the following question.

Sellers	Total vehicles Sold	Two wheelers sold (in %)	Suzuki: Bajaj (Two wheelers)	Suzuki: Bajaj (Four wheelers)
A	12000	52%	5: 8	7: 5
B	9000	65%	7: 6	4: 3
C	7500	60%	11: 4	5: 3
D	14000	40%	4: 3	3: 5
E	10500	45%	4: 5	7: 4

Q1. Total four wheelers of company Suzuki sold by B are what percent more than total two wheelers of company Bajaj sold by C?
(a) 35%
(b) 37.5%
(c) 40%
(d) 45%
(e) 50%

Q2. Total vehicles sold by D and E together of Bajaj is how much more than total vehicles sold by C and D together of Suzuki.
(a) 900
(b) 850
(c) 800
(d) 750
(e) 700

Q3. Average number of two wheelers of Suzuki sold by A, B and C together is how much more than average number of two wheelers of Suzuki sold by D and E together.
(a) 200
(b) 225
(c) 250
(d) 300
(e) 350

Q4. Four wheelers of Suzuki sold by C is what percent more than the same type of vehicles sold by C of Bajaj?
(a) 40%
(b) $\frac{200}{3}$%
(c) $\frac{100}{3}$%

(d) 60%
(e) $\frac{163}{3}$%

Q5. Find the total number of vehicles of Bajaj sold by A & B together?
(a) 12,760
(b) 11,420
(c) 10,290
(d) 11,920
(e) 11,240

Q6. A rectangular plot has a concrete path running in the middle of the plot parallel to the breadth of the plot. The rest of the plot is used as a lawn, which has an area of 240 sq. m. If the width of the path is 3 m and the length of the plot is greater than its breadth by 2 m, what is the area of the rectangular plot ? (in sq. m.)
(a) 255
(b) 168
(c) 288
(d) 360
(e) 224

Q7. A well with 14 metre inside diameter is dug 10m deep. Earth taken out of it, has been evenly spread all around it to a width of 21m to form an embankment. The height (in metres) of the embankment is:
(a) 1/2
(b) 2/3
(c) 3/4
(d) 3/5
(e) 2/5

Q8. A solid is in the form of a right circular cylinder with hemispherical ends. The total length of the solid is 35 cm. The diameter of the cylinder is ¼ of its height. The total surface area of the solid is (Take π=22/7)
(a) 462 cm^2
(b) 693 cm^2
(c) 750 cm^2
(d) 770 cm^2

(e) 924 cm^2

Q9. Four circles having equal radii are drawn with centres at the four corners of a square. Each circle touches the other two adjacent circle. If remaining area of the square is 168 cm^2, what is the size of the radius of the circle? (in centimeters) (take π = 22/7)
(a) 1.4
(b) 14
(c) 35
(d) 21
(e) 3.5

Q10. The length and breadth of the floor of a room are 20 feet and 10 feet respectively. Square tiles of 2 feet length of three different colours are to be laid to the floor. Black tiles are laid in the first row on all sides. If white titles are laid in the one-third of the remaining and blue tiles in the rest, how many blue tiles will be there?
(a) 48
(b) 32
(c) 16
(d) 24
(e) None of these

Directions (11-15): Given below are 3 statements with each question, you have to decide that which of the following statement/statements are necessary to answer the question.

Q11. **X, Y and Z secured 45%, 50% and 60% marks respectively in Biology. W's marks in Biology is 12.5 more than X's marks and 4 less than Z's marks. Find out the individual marks of four students.**
A. For the students total marks obtained for Biology is 311.5.
B. Total of W's and X's marks in Biology is 147.5.
C. Z has obtained 84 marks.
(a) A and B together
(b) Only C
(c) A and either B or C
(d) All together
(e) None of the above

Q12. **At what time will a train reach Lucknow from Patna?**
A. The train crosses another train of equal length of 97.5 m and running in opposite direction in 9 sec.
B. The train leaves Patna at 11:15 am for Lucknow, which is at a distance of 567 km.
C. The 97.50-m-long train crosses a signal pole in 5 sec.
(a) Only A
(b) B and C together
(c) A and C together
(d) All statements are required
(e) Only B

Q13. **Find the height of an equilateral triangle.**
A. Perimeter of the triangle is equal to the perimeter of the rectangle whose length and breadth are in the ratio of 5 :3.
B. Perimeter of a square is known, which is twice the perimeter of the triangle.
C. Area of the triangle is known.
(a) Any two of them
(b) Any of them
(c) Only C
(d) Either B or C alone
(e) A and either B or C

Q14. **What is the value of a two–digit number?**
A. The sum of the digits is 5.
B. The difference of the squares of the digits is 15.
C. The difference of their digits is 3.
(a) A and B together are sufficient
(b) B and C together are sufficient
(c) C and A together are sufficient
(d) Any one pair of A and B, B and C or C and A is sufficient
(e) Data inadequate

Q15. **A boat takes 2 hours to travel from point A to B in still water. To find out its speed upstream, which of the following information is/are required?**
A. Distance between point A and B.
B. Time taken to travel downstream from B to A.
C. Speed of the stream of water.
(a) All are required
(b) Any one pair of A and B, B and C or C and A is sufficient.
(c) Only A and B
(d) Only A and C
(e) None of these

Solutions

S1. Ans.(e)
Sol.
Total four wheelers of Suzuki sold by B $= 9000 \times \frac{35}{100} \times \frac{4}{7} = 1800$
Total two wheelers of Bajaj sold by C $= 7500 \times \frac{60}{100} \times \frac{4}{15} = 1200$
Required % $= \frac{1800-1200}{1200} \times 100 = 50\%$

S2. Ans.(b)
Sol.
Total vehicles sold by D & E together of Bajaj
$= 14000 \times \left[\frac{40}{100} \times \frac{3}{7} + \frac{60}{100} \times \frac{5}{8}\right] + 10{,}500\left[\frac{45}{100} \times \frac{5}{9} + \frac{55}{100} \times \frac{4}{11}\right]$
= 2400 + 5250 + 2625 + 2100 = 12,375
Total vehicles sold by C & D together of Suzuki
$= 7500\left[\frac{60}{100} \times \frac{11}{15} + \frac{40}{100} \times \frac{5}{8}\right] + 14000\left[\frac{40}{100} \times \frac{4}{7} + \frac{60}{100} \times \frac{3}{8}\right]$
= 3300 + 1875 + 3200 + 3150
= 11,525
Required difference = 12,375 – 11,525
= 850

S3. Ans.(d)
Sol.
Average no. of two wheelers of Suzuki sold by A, B & C together
$= \frac{1}{3}\left[12000 \times \frac{52}{100} \times \frac{5}{13} + 9000 \times \frac{65}{100} \times \frac{7}{13} + 7500 \times \frac{60}{100} \times \frac{11}{15}\right]$
$= \frac{1}{3}[2400 + 3150 + 3300] = 2950$
Average no. of two wheelers of Suzuki sold by D & E together
$= \frac{1}{2}\left[14000 \times \frac{40}{100} \times \frac{4}{7} + 10{,}500 \times \frac{45}{100} \times \frac{4}{9}\right]$
$= \frac{1}{2}[3200 + 2100] = 2650$
Required difference = 2950 – 2650 =300

S4. Ans.(b)
Sol. Four wheelers of company Suzuki sold by C
$= 7500 \times \frac{40}{100} \times \frac{5}{8} = 1875$
Four wheelers of company Bajaj sold by C
$= 7500 \times \frac{40}{100} \times \frac{3}{8} = 1125$

Required $\% = \frac{1875-1125}{1125} \times 100 = 66\frac{2}{3}\%$

Alternate,

It can be done without solving values (by ratio)

$Required\ \% = \frac{5-3}{3} \times 100 = \frac{200}{3}\% = 66\frac{2}{3}\%$

S5. Ans.(c)

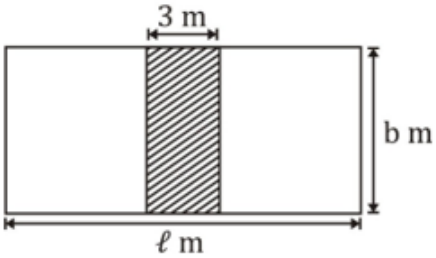
Sol. Total number of vehicles of company Bajaj sold by A & B together

$= 12000 \times \frac{52}{100} \times \frac{8}{13} + 12000 \times \frac{48}{100} \times \frac{5}{12} + 9000 \times \frac{65}{100} \times \frac{6}{13} + 9000 \times \frac{35}{100} \times \frac{3}{7}$

= 3840 + 2400 + 2700 + 1350 = 10,290

S6. Ans.(c)

Sol.



∴ Area of plot = lb

$\Rightarrow \ell(\ell - 2) = 3(\ell - 2) + 240$

$\Rightarrow \ell^2 - 5\ell - 234 = 0$

$\Rightarrow (\ell - 18)(\ell + 13) = 0$

$\Rightarrow \ell = 18$m

∴ b = 16 m

∴ Required area = 18 × 16 = 288 sq. m

S7. Ans.(b)

Sol.

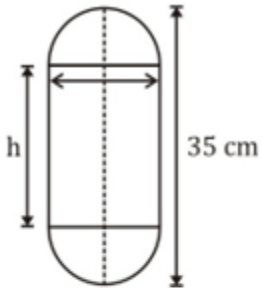
Let height of embankment is h metre.

$\therefore \pi \times \left(\frac{14}{2}\right)^2 \times 10 = \pi \times (28^2 - 7^2)$

$\Rightarrow 7 \times 7 \times 10 = 35 \times 21 \times h$

$\Rightarrow h = \frac{2}{3}$ metres

S8. Ans.(d)
Sol.



Let height of cylinder = h cm

$\therefore$ diameter of cylinder $= \frac{h}{4}$ cm

$\therefore h + \frac{h}{4} = 35$

$\Rightarrow h = 28$ cm

$\therefore$ diametre $= \frac{28}{4} = 7$ cm

$\therefore$ Total surface area of solid

$= 2 \times \frac{22}{7} \times \frac{7}{2} \times 28 + 4 \times \frac{22}{7} \times \left(\frac{7}{2}\right)^2$

$= 616 + 154$

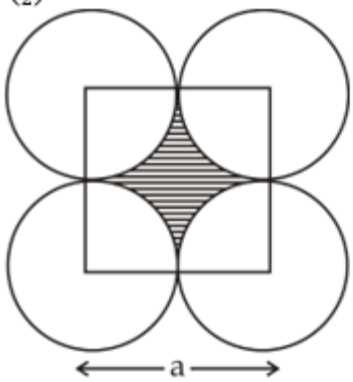
$= 770\ cm^2$

S9. Ans.(b)
Sol.

Remaining area of square = $a^2 - \pi\left(\frac{a}{2}\right)^2$

Where a =side of square

$\left(\frac{a}{2}\right)$ =radius of circle



ATQ,

$a^2 - \frac{\pi a^2}{4} = 168$

$\Rightarrow a^2 = \frac{168\times4}{(4-\pi)}$

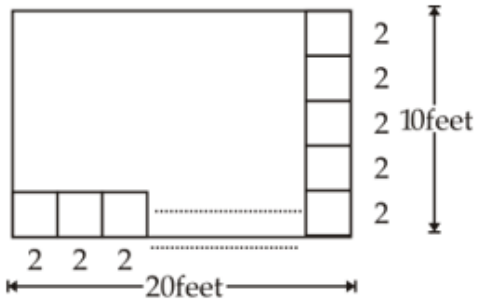
$= \frac{168\times4\times7}{6}$

$\Rightarrow$ a = 28 cm

$\therefore$ radius = 14 cm

S10. Ans.(c)

Sol.



Total black tiles = 10 × 2 + 2 × 3

= 26

$\therefore$ Remaining area = 20 × 10 − 26 × 2^2

= 96 sq. feet

$\therefore$ No. of blue tiles = $\frac{2}{3}\times\frac{96}{4}$

= 16

S11.Ans.(e)

Sol.

$(60 - 45)\% = 12.5 + 4$

$100\% = \frac{16.5}{15} \times 100 = 110$

$x = 49.5, y = 55, z = 66, w = 62$

So none of the statements is required

s

S12. Ans.(b)

Sol.

St. A = relative speed of train

$= \frac{195}{9}$ m/s or 78 km/h

St. B = Distance = 567 km

St. C = Speed of train

$= \frac{97.5}{5} = 19.5$ m/s

The speed of the other train is not known so only B and C are the required Statements

S13. Ans.(d)

Sol. Let area of triangle = 163 sq.m. and perimeter of square = 48 m.

St. C — $\frac{\sqrt{3}}{4}a^2 = 163$, from here side of the equilateral triangle and height can be calculated.

St. B — Side of triangle

$= \frac{48}{3\times2} = 8$

$h = \frac{\sqrt{3}}{2}a$

St. A — no conclusion

So, using either B or C alone we can find the height.

S14. Ans.(d)

Sol.

From I, $x + y = 5$

From II $x^2 - y^2 = 15$

From III $x - y = 3$

So, number can be 41or 14

∴ Any one pair of statements A, B and C is sufficient to give the answer.

S15. Ans.(b)

Sol.

Let distance = d

Speed in still water = x

Speed of current = y

$\therefore \frac{d}{x} = 2$

From A, d given

B, $\frac{d}{x+y}$ = given

C, y = given

$\therefore$ Any one pair of statements A, B

and C is sufficient to give the answer.