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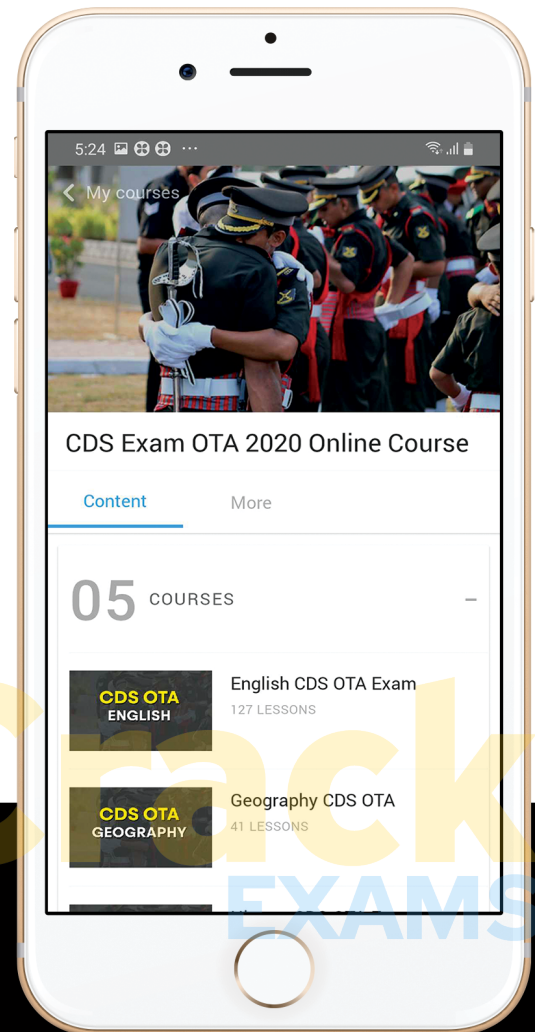# DEFENCE EXAM APP
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TERRITORIAL ARMY
SOLVED PAPER – JULY 2016
PAPER: 1. REASONING & ELEMENTARY MATHEMATICS

PART I : REASONING

In each of the following series determine order of the letters. Then from the given options select the one which will complete the given series.

Q1. B A D C ? H G J I

(a) EF   (b) FE   (c) FG   (d) DF

Answer: (b)

The first letter is next letter to the second letter.

In the given series, A is the second letter but B is the next letter to A. So, E is the second letter but it is the letter before F (first letter)

Thus, FE will complete the series.

Q2. ADG, XVT, BEH, WUS, ?

(a) VTR   (b) CFI   (c) DFJ   (d) FTU

Answer: (b)

In the alphabetical order ABCDEFGH, two letters after one letter is left out and written as ADG.

So CDEFGHIJ is written as CFI.

Q3. GMSY, IOUA, KQWC, ?

(a) MSYE   (b) NSYE   (c) MTYE   (d) MSYF

Answer: (a)

In the alphabetical order ABCDEFGHIJKLMNOPQRST, five alphabets are left after one letter and written as GMSY. So MSYE has the letter gap of five as per the alphabetical order.

In the following question, select the number (s) from the given options for completing the given series.

Q4. 3, 1/3, 14, 1/4, 25, 1/25, ?

(a) 1/ 36   (b) 34   (c) 35   (d) 36

Answer: (d)

14 – 3 = 11, 25 – 14 = 11, ? – 25 = 11

? = 25 + 11 = 36.

Q5. 96, 90, 78, ?, 36, 6

(a) 60   (b) 72   (c) 48   (d) 54

Answer: (a)

On analyzing the following series, 96 is subtracted by multiples of 6.

96-6=90,

90-12=78,

78-18=60,

60-24= 36,

36-30=6

So 60 is the missing number.

In the questions given below establish the relationship between the two words. Then from given options select one which has the same relationship as of the given two words.

Q6. Gum is _____ as Socket is to Eye.

(a) Tree   (b) Paper   (c) Tooth   (d) Stick

Answer: (c)

Since the second one is a human part related to something in the first so tooth is a human part related to gum.

Q7. Stars are to Night as Sun is to _____

(a) Noon   (b) Dawn   (c) Day   (d) Light

Answer: (c)

Since sun is visible only in day time.

Q8. If 'light' is called 'morning', 'morning' is called 'dark', 'dark' is called 'night', 'night' is called 'sunshine' and 'sunshine' is called 'dusk', when do we sleep?

(a) Morning   (b) Night   (c) Dusk   (d) Sunshine

Answer: (d)

We sleep at Night and Night is called Sunshine. So, we sleep in Sunshine.

Q9. Horse: Mare. Find the most appropriate pair below

(a) Cow: Bull   (b) Cow: Calf   (c) Dog: Puppy   (d) Tiger: Horse

Answer: (a)

Male and female is paired each other exactly of same species.
Cow: Bull is the correct pair of masculine and feminine gender.

Q10. What Bank: Money, in the same way, Transport: _____

(a) Traffic   (b) Goods   (c) Speed   (d) Road

Answer: (b)

Transaction of second is done through the first.

Q11. Find the odd one out

(a) Crusade   (b) Expedition   (c) Cruise   (d) Campaign

Answer: (c)

One should know the meaning of each to arrive at the correct conclusion.
Cruise means journey on large ships for pleasure sometimes it also refers to the speed of the vehicle also.
Crusade, campaign and expedition are related to war, politics or social changes and it is merely the synonyms of each other.
Hence, cruise is the odd among the given alternatives.

Q12. Find the odd one out

(a) flourish   (b) renovate   (c) blossom   (d) thrive

Answer: (b)

Renovate means to make something new or to repair something in order to make it new.
All the other three words that are given flourish, blossom and thrive are synonyms to each other.
They mean something that attracts about attention by growing and developing in a healthy manner.

Q13. Find the odd one out

(a) Vapour   (b) Mist   (c) Hailstone   (d) Fog

Answer: (a)

All except vapour are different forms of precipitation.

Q14. Find the odd one out

(a) Circle: Arc   (b) Chair: Leg   (c) Flower: Petal   (d) Cover: Page

Answer: (d)

In all other pair second is a part of the first except Cover : Page.

Q15. If PALE is coded as 2134, EARTH is coded as 41590, how can is PEARL be coded in that language?

(a) 25430   (b) 29530   (c) 25413   (d) 24153

Answer: (d)

The alphabets are coded as shown:

P A L E R T H

2 1 3 4 5 9 0

So, P is code as 2. E as 4. A as 1. R as 5 and L as 3. Thus, the code for PEARL is 24153.

Q16. If ROSE is coded as 6821, CHAIR is coded as 73456 and PREACH is coded as 961473, what will be the code for SEARCH?

(a) 216473   (b) 246173   (c) 214673   (d) 214763

Answer: (c)

ROSE = 6821 → R=6, O=8, S=2, E=1

CHAIR = 73456 → C=7, H=3, A=4, I=5, R=6

PREACH = 961473 →P=9, R=6, E=1, A=4, C=7, H = 3

Deriving required things from all above,

S=2, E=1, A=4, R=6, C=7, H=3

Therefore, SEARCH = 214673

Q17. If in a certain code, GLAMOUR is written as IJCNMWP and MISRULE is written as OGUSSNC, then how will TOPICAL be written in that code?

(a) VMRJECN   (b) VMRHAGJ   (c) VMRJACJ   (d) VNRJABJ

Answer: (c)

The first, third and sixth letters of the word are each moved two steps forward; the second, fifth and seventh letters are each moved two steps backward, while the fourth letter is moved one step forward to obtain the corresponding letters of the code.

Q18. A woman introduces a man as the son of the brother of her mother. How is the man related to the woman?

(a) Uncle   (b) Grandson   (c) Cousin   (d) Son

Answer: (c)

Brother of mother — Uncle: Uncle's son — Cousin

So, the man is cousin to that woman.

Q19. What Doctor: Patient, in the same way a politician: _____

(a) Voter   (b) Chair   (c) Money   (d) Public

Answer: (d)

Doctor is related to patient and politicians are related to public only.

Q20. What Ignorance: Education, in the same way Disease: _____

(a) Hospital   (b) Doctor   (c) Medicine   (d) Nurse

Answer: (c)

Ignorance and education is connected in such a way like disease and so medicine.

Q21. What Guilt: Past, in the same way Hope: _____

(a) Present   (b) Sorrow   (c) Past   (d) Future

Answer: (d)

Eventually hope connects with future as like guilt connect with past.

Q22. Carefully study the diagram given below. The circle indicates 'strong', square indicates 'tall' and triangle indicates 'army officers'.
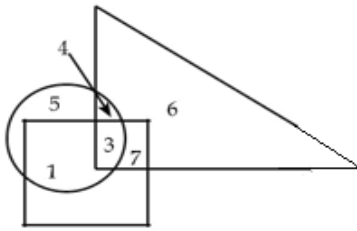
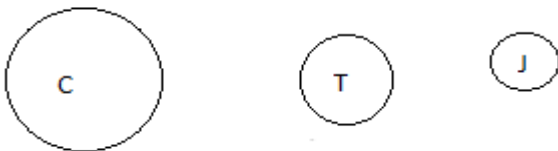The strong army officers who are not tall are shown as

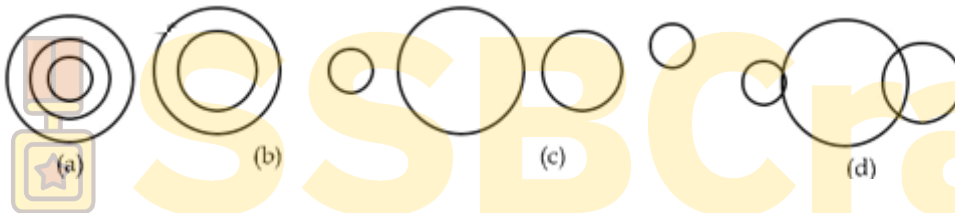(a) 4   (b) 3   (c) 5   (d) 6

Answer: (a)

From the diagram it is clear that the strong army officers who are not tall are shown as 4 in the center of the image which has the common part of circle and triangle.

Q 23. The circles 'C', 'T', and 'J', given below depict criminals, thieves and judges.

Which of the following figures best depicts the relationship among criminals, thieves and judges?

(a) A   (b) B   (c) C   (d) D

Answer: (b)

All the thieves are criminals while judge is different from these.

Q 24. In a family there are husband, wife, two sons and two daughters. All the ladies were invited to a dinner. Both sons went out to play. Husband did not return from office. Who was at home?

(a) Only wife was at home   (b) All ladies were at home

(c) Only sons were at home   (d) No body was at home

Answer: (d)

In the family, there are total 3 ladies (wife & two daughters) and 3 gents (husband and two sons).

Therefore, the total family member is 6. All the ladies were out for dinner so 6 – 3 = 3 members are left. The two boys went out to play. So 3 – 2 = 1 left. The husband did not return from office, so 1-1 = 0. Therefore no one was at home.

Q 25. Artists are generally whimsical. Some of them are frustrated. Frustrated people are prone to be drug addicts. Based on these statements which of the following conclusions is true?

(a) All frustrated people are drug addicts   (b) Some artists may be drug addicts

(c) All drug addicts are artist   (d) Frustrated people are whimsical

Answer: (b)

Some artist may be drug addict is true by considering the above statements.

Q 26. If A is the son of Q. Q and Y are sisters. Z is the mother of Y, P is the son of Z, then which of the following statements is correct?

(a) P is the maternal uncle of A

(b) P and Y are sisters

(c) A and P are cousins
(d) None of the above
Answer: (a)
Q and Y are sisters. Z is the mother of Y. P is the son of Z.
Q and Y are sisters to P. So, Q's son A is nephew to P.
Therefore, P is the maternal uncle of A.

Q 27. There are five books A, B, C, D and E placed on a table. If A is placed below E, C is placed above D, B is placed below A and D is placed above E, then which of the following books touches the surface of the table?

(a) C   (b) B   (c) A   (d) E
Answer: (b)
The arrangement of the book on a table will be

C
D
E
A
B

Thus, B touches the surface of the table.

Q28. Three ladies X, Y and Z marry three men A, B and C. X is married to A, Y is not married to an engineer, Z is not married to a doctor, C is not a doctor and A is a lawyer. Then which of the following statements is correct?
(a) Y is married to C who is an engineer
(b) Z is married to C who is a doctor
(c) X is married to a doctor
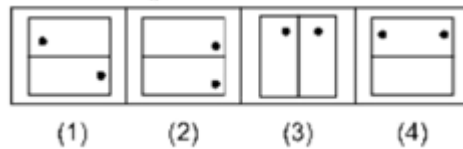(d) None of these
Answer: (d)
The correct pair will be

Person	Spouse	Profession
X	A	Lawyer
Y	B	Doctor
Z	C	Engineer

Y is married to B. Z is married to C and X is married to A.
Therefore, option (d) is the correct answer.
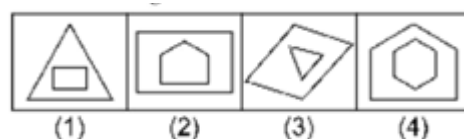Q 29. Choose the figure which is different

(a) 1   (b) 2   (c) 3   (d) 4
Answer: (d)
All the images posses' one dot in each sector, while image (4) has two dots in a sector.
Q 30. Choose the figure which is different
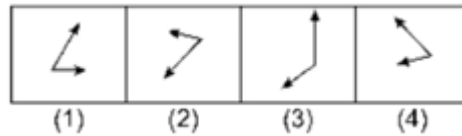

(a) 1   (b) 2   (c) 3   (d) 4
Answer: (c)

Only figure (3) has the image with one less side than the outer image. Where in all other images, the large image has smaller sides than the small image inside it.

Q31. Choose the figure which is different
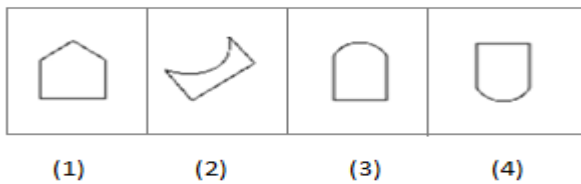

(a) 1   (b) 2   (c) 3   (d) 4

Answer: (c)

First image denotes the time 3:05, second time is 10:35, and third one is 7:00, and then final image is 8:55. So only third image the long dial points at exactly zero and so it is the odd one.

Q32. Choose the figure which is different
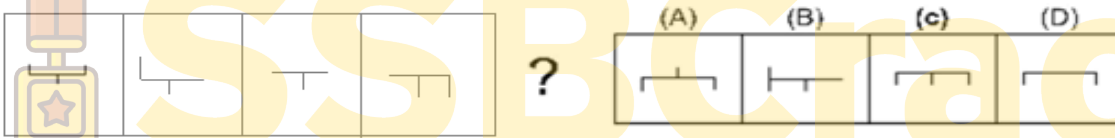

(a) 1   (b) 2   (c) 3   (d) 4

Answer: (a)

Since all other figure have a curved edge but not the first figure.
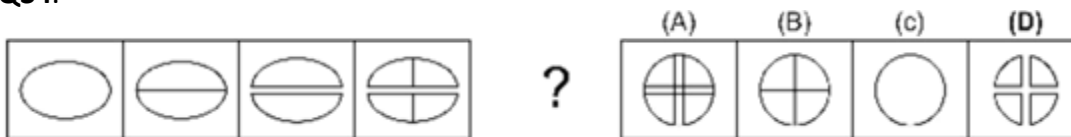Suggest the next figure in each of the following

Q33.

Answer: (c)

Since here the number of lines in the first image is two (one left and one right). Then one reduced in the right of next image. No more lines in the third image and one line increased in right so and image should have two lines developed in both ends facing downwards.
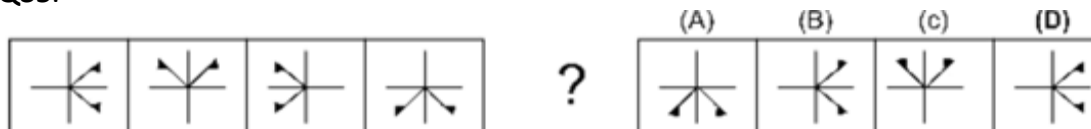
Q34.

Answer: (d)

In the last image the circle is divided into two equal halves followed by separating lines so in that the separating line again separates that into to two more pieces and then option (d) is correct answer since it separates the circle into four quadrants.

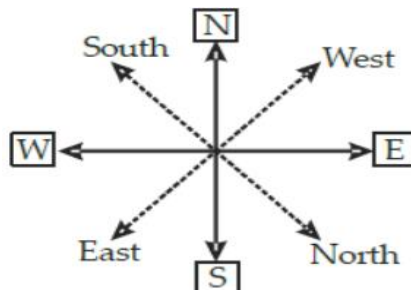**Q35.**

Answer: (d)

The image is rotating 90° in anticlockwise direction.

Q36. In a meeting, the map of a village was placed in such a manner that southeast becomes north, northeast becomes west and so on. What will south become?

(a) North   (b) North – east   (c) North – west   (d) West

Answer: (b)

From the figure, it is clear that 'S' becomes 'Northeast' in the new figure (dotted line)

Q37. A person travelled a distance of 50 km in 8 hours. He covered a part of the distance on foot at the rate of 4 km per hour and a part on a bicycle at the rate of 10 km per hour. How much distance did he travel on foot?

(a) 10 km   (b) 20 km   (c) 30 km   (d) 40 km

Answer: (b)

Let the time taken to travel on foot and bicycle be t_1 and t_2 respectively

Also, let distance travelled on foot be x.

Now $t_1 + t_2 = 8$

$$\frac{x}{4} + \frac{50 - x}{10} = 8$$
$$\frac{5x + 100 - 2x}{20} = 8 \, ;$$
$$3x = 160 - 100$$
$$x = \frac{60}{3}$$
$$x = 20 \, km$$

Q38.

How many different triangles are there in the figure shown above?

(a) 28   (b) 24   (c) 20   (d) 16

Answer: (a)

There are 3 rectangles with two diagonals each. Thus, each rectangle contains 8 small triangles. So total triangles are 24. Further looking at the first 2 rectangles as a single entity there are 2 triangle (1 at bottom and 1 at top) and similarly looking at the 2nd and 3rd rectangle there are another 2 triangles (1 at bottom and 1 at the top).

So total 24+2+2=28.

Q39. If Rs 8,000 can maintain a family of 4 persons for 40 days, for how long will Rs. 10,500 maintain a family of 6 persons?

(a) 30 days   (b) 35 days   (c) 25 days   (d) 28 days

Answer: (b)

Given Budget for 4 persons =Rs. 8000

Sustain for 40 days

Average expenses per person will be $= \frac{8000}{40 \times 4}$ = 50/person

Let Rs.10500 will be maintained by 6 persons for x days.

$$\therefore \frac{10500}{X \times 6} = 50$$

$$X = \frac{10500}{300}$$

$$X = 35$$

Q40. X works twice as fast as y. If Y can complete a job alone in 12 days, then in how many days can X and Y together finish the job?

(a) 18   (b) 4   (c) 6   (d) 8

Answer: (b)

Y can complete a job in 12 days.

Y's one day work = $\frac{1}{12}$

As X works twice as fast as Y, X can complete the same job in 6 days.

X's one day work = $\frac{1}{6}$

X and Y can finish together = $\frac{1}{6} + \frac{1}{12} = \frac{2+1}{12}$

$$= \frac{3}{12} = \frac{1}{4}$$

Thus, X and Y together finish that job in 4 days.

Q41. In a Class of 60 students 45 play cricket, 30 play football, 5 play none. How many students play both the games?

(a) 20   (b) 15   (c) 10   (d) 5

Answer: (a)

It is given that out of 60 students, 5 students play none of the sports so the no of students playing at least one game (cricket or football) is 60–5=55.

Using the Venn diagrams, it can be said that

$$n(A \cup B) = n(A) + n(B) - n(A \cap B)$$

Where,

$n(A)$ is the number of students playing cricket = 45

$n(B)$ is the number of students playing football = 30

$n(A \cup B)$ is the number of students playing at least cricket or football = 55 (as said above)

$n(A \cap B)$ is number of students playing both cricket and football which we should find out. So using above formula

$$55 = 45 + 30 - n(A \cap B)$$

$$n(A \cap B) = 45 + 30 - 55 = 20$$

So, the number of students playing both cricket and football is 20.

Q42. A person whose house is facing east, comes out of his house, takes a left turn and travels in that direction for 7 kilometres, after which he takes another left turn and travels for 6 kilometres. He again takes a left turn and travels for 3 kilometres, and again takes a lef turn and travels for 3 kilometres. Fro this point what is the shortest distance to his house?

(a) 19 km   (b) 10 km   (c) 5 km   (d) 30 km

Answer: (c)
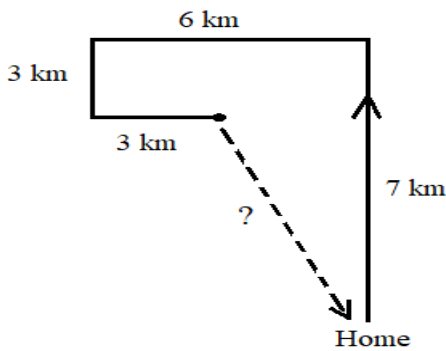
According to Pythagoras theorem, the shortest distance to his house $= \sqrt{3^2 + 4^2} = \sqrt{9 + 16}$
$$= \sqrt{25} = 5 \; km$$

Q43. A card is drawn from a well – shuffled pack of cards, This probability if getting a queen of club or king of heart is?

(a) 1/52   (b) 1/26   (c) 1/13   (d) 1/56

Answer: (b)

Here, n(S) = 52.

Let E = event of getting a queen of club or a king of heart. $n(E) = 2$

$$P(E) = \frac{n(E)}{n(S)} = \frac{2}{52} = \frac{1}{26}$$

Q44. Gangaram started walking towards south. Afer walking 15 metres he turned to the left and walked 15 metres. He again turned to his lefft and walked 15 metres. How far is he from his original position and in which direction?

(a) 15 metres, North   (b) 15 metres, East

(c) 30 metres, South   (d) 15 metres, West
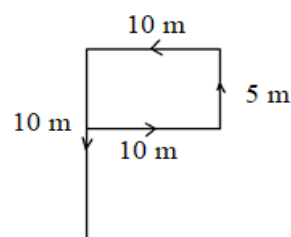
Answer: (b)

On following the given points,
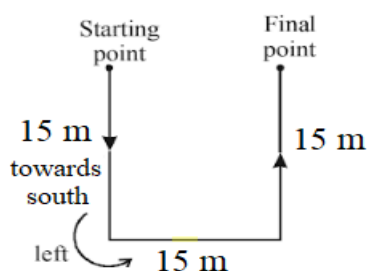
He travelled 15 metres east from the starting point.

Q45. I go 10 m to the East, then I turn left nd go 5 m, I turn left again and go 10 m ad then again I turn left and go 10 m. In which direction am I from the starting point?

(a) East   (b) West   (c) North   (d) South
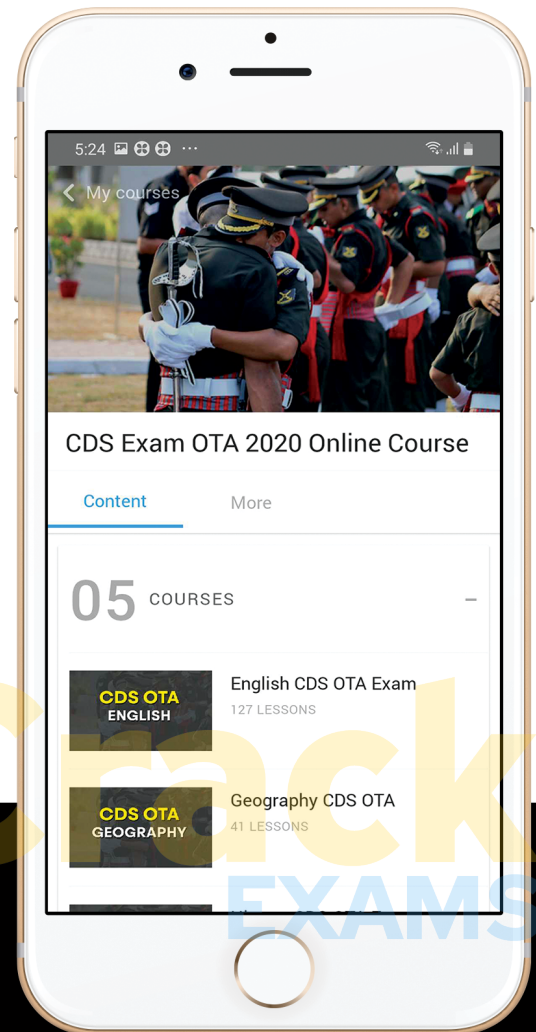
Answer: (d)

On tracing his path, he is in south.

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Q46. A 260 metre long train runs at a speed of 55 kmph. How much time will it take to cross a platform 290 metre long?

(a) 20 seconds   (b) 36 seconds   (c) 18 seconds   (d) 60 seconds

Answer: (b)

Length of train = 260 metres

Length of platform = 290 meters

Distance to be covered by a train to cross the platform = Length of train + length of platform

= 260 + 290

= 550 metres

The distance is given in metre and speed is given in km/h.

So, speed should be changed in terms of m/s.

Speed of train = 55 km/h=$55 \times \frac{5}{18} m/s$

Time taken to cross the platform

$$\frac{Distance\ covered}{Speed} = \frac{10}{\frac{5}{18}}$$
$$= 2 \times 18 = 36$$

So, the train will take 36 seconds to cross the platform 290 metre long.

Q47. My uncle shall visit me after 64 days of my father's birthday. If my father's birthday falls on Tuesday, what shall be the day on my Uncle's visit?

(a) Wednesday   (b) Sunday   (c) Tuesday   (d) Monday

Answer: (a)

My father's birthday is on Tuesday.

After 7, 14, 21, 28 …..multiples of 7 will be Tuesday.

After 63 days, the day will be Tuesday.

So, after 64th day will be Wednesday.

Q48. Rakesh ranked 9th from the top and 38th from the bottom in a class. How many students are there in the class?

(a) 47   (b) 45   (c) 46   (d) 48

Answer: (c)

Number of students in class = (9+38-1) = 46

Q49. If the following words are arranged in natural order, what will come in the last palce in ascending order?

(a) Captain   (b) Subedar Major   (c) Major   (d) Lieutenant Colonel

Answer: (d)

The ascending order of the ranks in the Indian Army.

Subedar Major, Captain, Major, Lieutenant-Colonel.

Q50. If day-after-tomorrow is Sunday, what was day-before-yesterday?

(a) Wednesday   (b) Thursday   (c) Friday   (d) Saturday

Answer: (a)

Since if x is the day-after-tomorrow, which is Sunday then today is Friday, so then day before yesterday is two days back from Friday which is Wednesday.

PART II : ELEMENTARY MATHEMATICS

Q51. The value of $0.99 \times 14 \div 11 \div 0.7$ is

(a) 2.9   (b) 1.6   (c) 1.8   (d) 2.8

Answer: (c)

$0.99 \times 14 \div 11 \div 0.7 = 13.86 \div 11 \div 0.7$

$= 1.26 \div 0.7 = 1.8$

Q52. What is the value of $11^2 - 6^2 \div 6 \times \frac{5}{2} + 2 \, of \, 10$?

(a) 126   (b) 108   (c) 110   (d) 125

Answer: (a)

$$11^2 - 6^2 \div 6 \times \frac{5}{2} + 2 \, of \, 10 = 121 - 6^2 \div 6 \times \frac{5}{2} + 2 \times 10$$

$$= 121 - 15 + 20 = 126$$

Q53. Which of the following is the standard form of $\frac{(24 \times 13) + (28 \div 7)}{(24 + 13) - \frac{14}{3} of \frac{5}{8}}$?

(a) $\frac{3792}{409}$ (b) $\frac{4790}{309}$ (c) $\frac{3792}{411}$ (d) $\frac{3092}{409}$

Answer: (a)

$$\frac{(24 \times 13) + (28 \div 7)}{(24 + 13) - \frac{14}{3} of \frac{5}{8}} = \frac{(24 \times 13) + (4)}{(24 + 13) - \frac{14}{3} \times \frac{5}{8}}$$

$$= \frac{312 + 4}{37 - \frac{70}{24}} = \frac{316}{\frac{818}{24}} = \frac{7584}{818} = \frac{3792}{409}$$

Q54. L.C.M of 6,9,12,18 is _____.

(a) 28   (b) 36   (c) 38   (d) 42

Answer: (b)

L.C.M of 6,9,12,18 $= 2 \times 2 \times 3 \times 3 = 36$

Q 55. If 'X' and 'Y' are both odd numbers, which of the following numbers must be even number?

(a) X+Y   (b) $X \times Y$ (c) $XY + 2$ (d) 2X+Y

Answer: (a)

If X and Y are odd numbers then adding those two numbers given even number so option a is the correct answer

Q 56. $12.1212 + 17.0005 - 9.1102 =$?

(a) 20.1015   (b) 20.0115   (c) 20.0105   (d) 20.0015

Answer: (b)

$12.1212 + 17.0005 - 9.1102 = 29.1217 - 9.1102 = 20.0115$

Q 57. $1 + 0.1 + 0.01 + 0.001 =$?

(a) 1.111   (b) 1.003   (c) 1.011   (d) 1.001

Answer: (a)

$1 + 0.1 + 0.01 + 0.001 = 1.1 + 0.01 + 0.001 = 1.11 + 0.001 = 1.111$

Q 58. One man adds 3 litres of water to 12 litres of milk and another 4 litres of water to 10 litres of milk. What is the ratio of the strengths of milk in the two mixtures?

(a) 15:25   (b) 25:28   (c) 28:25   (d) None of these

Answer: (c)

1st case - 12 litre milk in 15 (12 + 3) litre content.

Ratio $= \frac{12}{15} = \frac{4}{5}$

2nd case - 10 litre milk in 14 (10 + 4) litre content.

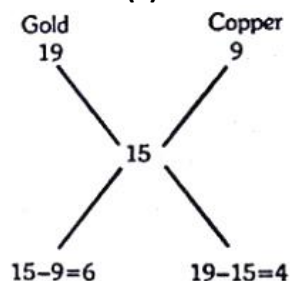Ratio $= \frac{10}{14} = \frac{5}{7}$

Ratio of milk strength in two $= \frac{4}{5} : \frac{5}{7} = 28 : 25$

Q 59. Gold is 19 times as heavy as water and copper 9 times as heavy as water. The ratio in which these two metals be mixed so that mixture is 15 times as heavy as water is:

(a) 1:2   (b) 2:3   (c) 3:2   (d) 19:135

Answer: (c)

```
Gold              Copper
 19                  9
    \              /
       \        /
          15
       /        \
    /              \
15−9=6        19−15=4
```

Required ratio $= 6 : 4 = 3 : 2$

Q 60. A certain amount was divided between Kavita and Reema in the ratio 4: 3. If Reema's share was Rs. 2400, the amount is:

(a) Rs.5600   (b) Rs.3200   (c) Rs.9600   (d) None of these

Answer: (a)

Let Kavita amount be $4x$

Let Reema amount be $3x$

Total amount $= 7x$

Then $3x = 2400$

$x = 800$

Total amount $= 7x = 7 \times 800 = Rs. 5600$

Q 61. A batsman has a certain average of runs for 16 innings in the 17th innings, he makes a score of 85 runs thereby increasing his average by 3. What is the average after the 17th inning?

(a) 33 runs   (b) 34 runs   (c) 37 runs   (d) 36 runs

Answer: (c)

Let the total score after 16 innings$= x$

and average$= y$

so $y = \frac{x}{16}$ ....(1)

now after 17th inning,

$y + 3 = \frac{x+85}{17}$ ....(2)

By solving 1st and 2nd we get

$y = 34$

so average after 17th inning $= 34 + 3 \Rightarrow 37$

Q 62. What is the value of $a^5 \times a^7$?

(a) a^{35} (b) a^2 (c) a^{12} (d) $a^{\frac{5}{7}}$

Answer: (c)

According to the power rule $a^m \times a^n = a^{m+n}$

Therefore $a^5 \times a^7 = a^{7+5} = a^{12}$

Q 63. $(100)^0$ is equivalent to?

(a) 0   (b) 10   (c) 1   (d) 100

Answer: (c)

According to the power rule anything to the power 0 the value is 1

$(100)^0 = 1$

Q 64. The value of $6a^3b^3c^2 \div 2ab^2c$ is:

(a) $3a^2bc$ (b) $3ab^2c$ (c) $3a^2b^2c^2$ (d) $3a^3b^3c^3$

Answer: (a)

$\frac{6a^3b^3c^2}{2ab^2c} = 3a^2bc$

Q 65. The value of $\frac{x^{-2}.y^{-4}}{x^{-3}.y^{-1}} \div \frac{y^{-2}}{x^{-1}}$ is?

(a) y (b) $\frac{1}{y}$ (c) xy (d) $\frac{1}{xy}$

Answer: (b)

$\frac{x^{-2}.y^{-4}}{x^{-3}.y^{-1}} \div \frac{y^{-2}}{x^{-1}} = \frac{x^{-2}.y^{-4}}{x^{-3}.y^{-1}} \times \frac{x^{-1}}{y^{-2}}$

$= x^{-2+3}.y^{-4+1} \times \frac{x^{-1}}{y^{-2}}$

$= \frac{x}{y^3} \times \frac{y^2}{x} = \frac{1}{y}$

Q 66. What is 170% of 1140?

(a) 1824 (b) 1881 (c) 1938 (d) 1995

Answer: (c)

$170\% \ of \ 1140 = \frac{170}{100} \times 1140 = 17 \times 114 = 1938$

Q 67. $14\% \ of \ 280 + 18\% \ of \ 350 =$?

(a) 102.2 (b) 103.4 (c) 105 (d) 108.5

Answer: (a)

$14\% \ of \ 280 + 18\% \ of \ 350 = \frac{14}{100} \times 280 + \frac{18}{100} \times 350$

$= \frac{14}{10} \times 28 + \frac{18}{10} \times 35$

$= \frac{392}{10} + \frac{630}{10} = \frac{1022}{10} = 102.2$

Q 68. A person walks from his house to his office at a speed of $X_1 km/h$ and return by the same route at a speed of $X_2 km/h$. His average speed is

(a) $\frac{X_1+X_2}{2}$ (b) $\frac{X_1+X_2}{2}$ (c) $\frac{3}{4}\left(\frac{X_1X_2}{X_1+X_2}\right)$ (d) $\left(\frac{2X_1X_2}{X_1+X_2}\right)$
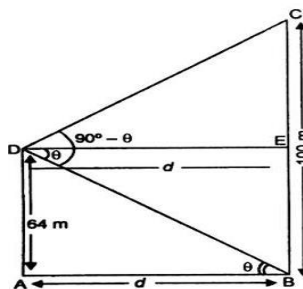
Answer: (d)

The given distance is covered by two different speeds $\frac{X_1 km}{h}$ and $\frac{X_2 km}{h}$

Then the average speed $= \frac{2xy}{x+y} = \left(\frac{2X_1X_2}{X_1+X_2}\right)$

Q 69. A house of 100 m subtends a right angle at the window of an opposite house. If the height of the window be 64m, then the distance between the two houses is

(a) 48 m   (b) 36 m   (c) 54 m   (d) 72 m

Answer: (a)

$d = 64cot\theta$ ...(i)

In $\triangle CDE, tan(90° - \theta) = (100 - 64)d$

$d = 36tan\theta$ ...(ii)
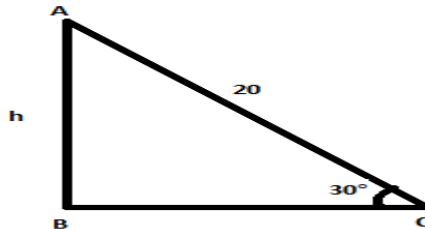
From Eqs. (i) and (ii), we get
$$d^2 = 36 \times 64 = 2304$$
$$d = 48m$$

Q 70. Some portion of a 20 m long tree is broken by the wind and the top struck the ground at an angle of 30°. The height of the point where the tree is broken is

(a) 10 m   (b) $(2\sqrt{3} - 3)20m$ (c) $\frac{20}{3}m$ (d) None of these

Answer: (c)

Let the height from the bottom where the tree is broken be 'h' m
Hence AC = $(20 - h)\ m$
In right triangle ABC
$$sin\ 30° = \frac{AB}{AC}$$
$$\left(\frac{1}{2}\right) = \frac{h}{20 - h}$$
$$20 - h = 2h$$
$$20 = 3h$$
$$h = \frac{20}{3}m$$

Q 71. A man borrowed Rs.8000 at 6% per annum simple interest of 5 yr. After 3 years he returned Rs. 7000. How much amount should he return at the end to settle the loan?

(a) Rs.2732.80   (b) Rs.2612.20   (c) Rs.2824.40   (d) Rs.2190.50

Answer: (a)

The borrowed amount = Rs. 8000
Rate of interest = 6%
Number of years = 5 years
In 3 years, he returned = Rs. 7000
To find the remaining amount:
Simple interest of 3 years.
Simple interest = $\frac{P \times N \times R}{100}$
$$= \frac{8000 \times 3 \times 6}{100}$$
$$= 80 \times 3 \times 6$$
$$= 1440\ Rs.$$
The total for 3 years with interest is Rs. 9440.
If he returned an amount of Rs. 7000
Then the remaining amount is Rs.2440
And the end, he needs settle the loan by returning an amount of,
Interest for the remaining amount is, $= \frac{2440 \times 2 \times 6}{100} = Rs.\ 292.80$
Then, the total amount of returning is $= 2440 + 292.80 = Rs.\ 2732.80$

Q 72. A shopkeeper earns a profit of 20% on selling a book at 16% discount on the printed price. The ratio of the cost price and the printed price is

(a) 5:6   (b) 5:7   (c)7:10   (d) 6:11

Answer: (c)

Earns a profit 20% on selling a book at 16% of discount.

To find the ratio of the cost price and the printed price of book.

Let the printed price is Rs.100.

So, selling price is Rs.84 and cost price $= 84 \times \left(\frac{100}{120}\right) = 70$

Thus, the ratio of Cost price and Printed price will be 7:10.

Q 73. Seats of Physics, Chemistry and Mathematics in a school are in the ratio 3 : 4 : 6, There is a proposal to increase these seats by 10%, 20% and 50%, respectively. What will the ratio of increased seats?

(a) 11:16:30   (b) 16:11:30   (c) 16:12:15   (d) 12:16:30

Answer: (a)

Originally, let the number of seats for Mathematics, Physics and Biology be 3x, 4x and 6x respectively.

Number of increased seats are (110% of 3x), (120% of 4x) and (150% of 6x).

$\Rightarrow \left[\left(\frac{110}{100}\right) \times 3x\right], \left[\left(\frac{120}{100}\right) \times 4x\right]$ and $\left[\left(\frac{150}{100}\right) \times 6x\right]$

$\Rightarrow \frac{33x}{10}, \frac{24x}{5}$ and $9x$

$\Rightarrow$ The required ratio $= 33x : 48x : 90x$

$\Rightarrow 11x : 16x : 30x$

$\Rightarrow 11 : 16 : 30$

Q 74. A well with 14 m inside diameter in dugout 15 m deep. The earth taken out of it has been evenly spread all around it to a width of 21 m to form an embankment. What is the height of the embankment?

(a) 1 m   (b) 2 m   (c) 3 m   (d) 4 m

Answer: (a)

Inner Diameter of the well $= 14\ m$

Inner Radius of the well (r) $= \frac{14}{2}\ m = 7\ m$

Height of the well (h) $= 15\ m$

Volume of the earth taken out of the well $= \pi r^2 h$

$= \frac{22}{7} \times (7)^2 \times 15$

$= 22 \times 7 \times 15 = 2310\ m^3$

Width= 21 m

Outer radius of the embankment R =inner radius + width

Outer radius (R) = 7 + 21 = 28m

The embankment is in the form of cylindrical shell, so area of embankment

Area of embankment = outer area - inner area

$= \pi R^2 - \pi r^2 = \pi(R^2 - r^2)$

$= \left(\frac{22}{7}\right)(28^2 - 7^2)$

$= \frac{22}{7}(784 - 49)$

$= \frac{22}{7} \times 735$

$= 22 \times 105$

$= 2310\ m^2$

Volume of embankment = volume of earth taken out on digging the well

Area of embankment × height of embankment= volume of earth dug out

Height of embankment= volume of earth dug out/area of the embankment

Height of the embankment $= \frac{2310}{2310}$

Height of embankment= $1\ m$

Hence, the height of the embankment so formed is $1\ m$

Q 75. The maximum number of boxes, each of length 2m, breadth 4m and height 5m that can be placed in a box of length 20m, breadth 10 m and height 5m is

(a) 30   (b) 40   (c) 20   (d) 25

Answer: (d)

Dimensions of Big box:

Length = 20 m

Breadth = 10 m

Height = 5 m

Surface area of the big box $= l \times b \times h = 20 \times 10 \times 5 = 1000 \, m$

Dimensions of Small box:

Length = 2 m

Breadth = 4 m

Height = 5 m

Surface area of the big box $= l \times b \times h = 2 \times 4 \times 5 = 40 \, m$

To find the maximum number of boxes to be placed $= \frac{1000}{40} = 25 \, boxes$

Q 76. A fan is listed at Rs.2400 with a discount of 10%. What additional discount must be offered to the customer to bring the net price to Rs. 2000?

(a) 14%   (b) 6%   (c) 12%   (d) 8%

Answer: (d)

A fan is listed at Rs. 2400 with a discount of 10 %

To bring the net price as Rs.2000

From the given options

$2400 \times \frac{18}{100} = 18 \times 24 = 432$

To bring the net price to 2000 approximately 400 to be given as discount

Comparing to the given option d approximately gives 432 rupees discount

The additional discount given to fan will be 8%.

Q 77. If $a + b + c = 10$ and $ab + bc + ca = 31$, then the value of $a^2 + b^2 + c^2$ is

(a) 48   (b) 38   (c) 18   (d) 20

Answer: (b)

Given that, $a + b + c = 10$ ......(1)

and, $ab + bc + ac = 31$ ......(2)

Squaring on both sides to eqn1 we have,

$(a + b + c)^2 = 10^2$

$a^2 + b^2 + c^2 + 2(ab + bc + ac) = 100$

$a^2 + b^2 + c^2 + 2 \times 31 = 100$ (by eqn(2))

$a^2 + b^2 + c^2 = 38$

Q 78. If $a\,cos\theta - b\,sin\theta = c$, Then $a\,sin\theta + b\,cos\theta$ is equal to

(a) $\pm\sqrt{b^2 + c^2 - a^2}$ (b) $\pm\sqrt{a^2 + b^2 - c^2}$ (c) $\pm\sqrt{c^2 + a^2 - b^2}$

(d) $\pm\sqrt{a^2 + b^2 + c^2}$

Answer: (b)

Given $a \, cos \, \theta - b \, sin \, \theta = c$ (Squaring on both sides)

$a^2 cos^2 \theta + b^2 sin^2 \theta - 2ab\,sin \, \theta \, cos \, \theta = c^2$ ----------(1)

Let $a \, sin \, \theta + b \, cos \, \theta = k$ (Squaring on both sides)

$b^2 cos^2 \theta + a^2 sin^2 \theta + 2ab \, sin \, \theta \, cos \, \theta = k^2$ ----------(2)

Adding (1) and (2) we get

$a^2 + b^2 = c^2 + k^2$

$k^2 = a^2 + b^2 - c^2$

$$k = \sqrt{a^2 + b^2 - c^2}$$
$$\therefore \; a\,Sin\,\theta + b\,Cos\,\theta = \sqrt{(a^2 + b^2 - c^2)}$$

Q 79. A toy is in the shape of hemisphere surmounted by a cone. If radius of base of the cone is 3 cm and its height is 4 cm. Total surface area of the toy is

(a) $33\pi cm^2$ (b) $42\pi cm^2$ (c) $66\pi cm^2$ (d) $56\pi cm^2$

Answer: (a)

Given the radius and height of the cone

r = 3 cm and h = 4 cm

slant height, $l = \sqrt{r^2 + h^2}$

$l = \sqrt{3^2 + 4^2}$

$l = \sqrt{9 + 16}$

$l = 5\;cm$

Total surface area of the toy = surface area of the hemisphere + surface area of the cone

$= 2\pi r^2 + \pi r l$

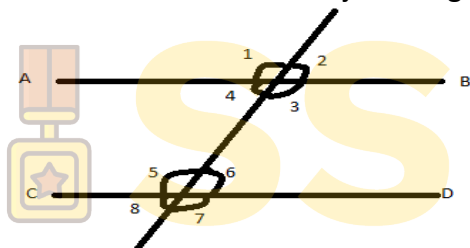$= \pi r(2r + l)$

$= \pi \times 3(2 \times 3 + 5)$

$= 3\pi(11)$

$= 33\pi cm^2$

Q 80. On the basis of the adjacent figure, consider the statements.

I. ∠1, ∠5, and ∠2, ∠6 are pairs of corresponding angles.

II. ∠4 and ∠6 is an alternate angle.

III. ∠1, ∠2 and ∠8, ∠7 are exterior angles.

Which of the following statements are true?

(a) I and II   (b) II and III   (c) I and III   (d) I, II and III

Answer: (d)

Observing the given figure

∠1, ∠5, and ∠2, ∠6 are pairs of corresponding angles.

∠4 and ∠6 is a alternate angles.

∠1, ∠2 and ∠8, ∠7 are exterior angle.

So, the given three statements are true.

Q 81. If $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$ and $y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$ then the value of $x^2 + y^2$ is

(a) 34   (b) 36   (c) 32   (d) 38

Answer: (a)

$x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$

$= \frac{(\sqrt{2}+1)(\sqrt{2}+1)}{(\sqrt{2})^2 - 1^2}$

$= \frac{(\sqrt{2}+1)^2}{1}$

$= 2 + 2\sqrt{2} + 1$

$x = 3 + 2\sqrt{2}$

$$y = \frac{\sqrt{2}-1}{\sqrt{2}+1}$$

$$= \frac{(\sqrt{2}-1)(\sqrt{2}-1)}{(\sqrt{2}+1)(\sqrt{2}-1)}$$

$$= \frac{(\sqrt{2}-1)^2}{2-1}$$

$$y = 3 - 2\sqrt{2}$$

$$= x^2 + y^2 = (3 + 2\sqrt{2})^2 + (3 - 2\sqrt{2})^2$$

$$= (3^2 + (2\sqrt{2})^2 + (2 \times 3 \times 2\sqrt{2})) + (3^2 + (2\sqrt{2})^2 - (2 \times 3 \times 2\sqrt{2}))$$

$$= 18 + 16 = 34$$

Thus, $x^2 + y^2 = 34$

Q 82. Kiran purchased a scooter for Rs.24000. Then value of scooter is depreciating at the rate of 5% per annum. Then, its value after three years is

(a) 20577   (b) 20977   (c)20677   (d) 20877

Answer: (a)

Principal (P) $= Rs.\,24,000$,

Rate of Interest (R)= 5%, Time (n) = 3 years

Amount (A) $= P\left(1 - \frac{R}{100}\right)^n$

[Value depreciated]

A= $24000\left(1 - \frac{5}{100}\right)^3$

A=$24000(0.95)^3$

A= 24000×0.8573775

A= 20577

Hence, the value of the scooter after one year =Rs. 20577

Q 83. When 40% if a number is added to 42, the result is the number itself. The number is

(a) 70   (b) 90   (c) 82   (d) 72

Answer: (a)

Let the number be 'x'

40% of number $= \frac{40 \times x}{100}$

$\frac{40x}{100} + 42 = x$

$42 = x - \frac{40x}{100}$

$42 = \frac{100x - 40x}{100}$

$42 = \frac{60x}{100}$

$4200 = 60x$

$x = 70$

Hence the number is 70.

Q 84. A circle and a square have same area. Therefore, the ratio of the side of the square and the radius of the circle is

(a)$\sqrt{\pi}:1$ (b)$1:\sqrt{\pi}$ (c)$1:\pi$ (d) $\pi:1$

Answer: (a)

Let the side of the square be 'a' and let the radius of the circle be 'r'

A circle and a square have same area.

Then, $a^2 = \pi r^2$

$\Rightarrow \frac{a^2}{r^2} = \pi$

$$\Rightarrow \frac{a}{r} = \sqrt{\pi}$$

$$\therefore a : r = \sqrt{\pi} : 1$$

Q 85. The greatest six-digit number is a perfect square is

(a) 998004   (b) 998006   (c) 998049   (d) 998001

Answer: (d)

We know the greatest number of 6 digits is 999999.

Then solving through division method,

We get quotient as 999.99 So it is not a perfect square.

But if we consider it to be as $(1000 - 1)^2$ which will be equal to 999^2.

$= (1000 - 1)^2$

$= 999^2$

$= 998001$

$\therefore$ The greatest 6-digit number which is a perfect square is 998001.

Q 86. A mason can build a tank in 12hrs. After working for 6hrs, he took the help of a boy and finished the work in another 5hrs. The time that the boy will take alone to complete the work is

(a) 30 Hrs   (b) 45 Hrs   (c) 60 Hrs   (d) 64 Hrs

Answer: (c)

Mason's 1 h work = $\frac{1}{12}$

Mason's 6 h work = $\frac{6}{12} = \frac{1}{2}$

Remaining work = $1 - \frac{1}{2} = \frac{1}{2}$

Remaining work can be finished in 5 h total

Work can be finished in $2 \times 5 = 10 \; hrs$

$$\frac{1}{12} + \frac{1}{b} = \frac{1}{10}$$

$$\frac{1}{b} = \frac{1}{10} - \frac{1}{12} = \frac{1}{60}$$

The boy can complete the work in 60 Hrs.

Q 87. In an Army camp ration is available for 100 soldiers for 10 days. After 2 days 60 soldiers joined. Then for how many days will the remaining ration last?

(a) 7 days   (b) 6 days   (c) 5days   (d) 4 days

Answer: (c)

{It is an indirect proportion question. No. of days is inversely proportional to no. of soldiers}

100 soldiers → 10days

After two days, food is left for 8 days

100 soldiers → 8 days

60 more joins them

160 soldiers → x days

Since the amount of food is not changed, amount of food consumed by 100 soldiers in 8 days is equal to food consumed by 160 soldiers in x days.

Definitely x will be less than 8.

Since no. of soldiers increase, no of days decrease.

$100 \times 8 = 160 \times x$

$800 = 160 \times x$

$\frac{800}{160} = x$

$\frac{80}{16} = x$

$x = 5$

Q 88. The value of $\sec A(1 - \sin A)(\sec A + \tan A)$ is

(a) -1   (b) 1   (c) 2   (d) $\frac{1}{2}$

Answer: (b)

$\sec A(1 - \sin A)(\sec A + \tan A) = \frac{1}{\cos A}(1 - \sin A)\left(\frac{1}{\cos A} + \frac{\sin A}{\cos A}\right)$

$= \frac{(1 - \sin A)}{\cos A}\left(\frac{1 + \sin A}{\cos A}\right)$

$= \frac{1^2 - \sin^2 A}{\cos^2 A}$

$= \frac{1 - \sin^2 A}{\cos^2 A}$

$= \frac{\cos^2 A}{\cos^2 A} = 1$

Q 89. Divide the number 26244 by the smaller number, so that the quotient is perfect cube, so the smallest number is

(a) 4   (b) 6   (c) 36   (d) 16

Answer: (c)

$26244 = 2 \times 2 \times 3^8$

$= 2 \times 2 \times 3^2 \times 3^6$

Quotient is perfect cube of 3^2 and number is $2 \times 2 \times 3^2 = 36$

Q 90. A cubical vessel can hold 1331 litre of water. The length of side of the vessel in m is

(a) 11m   (b) 1.1m   (c) 0.11m   (d) None of these

Answer: (b)

Volume of cubical vessel = 1331 litre

We know 1 m^3 = 1000 litre

Therefore $1331 \, litre = \frac{1331}{1000} \, m^3 = 1.331 m^3$

$Volume \; of \; vessel = \frac{1331}{1000} m^3$

$Side^3 = \frac{1331}{1000} m^3$

$Side = \frac{11}{10}$

$Side = 1.1 \, m$

Q 91. A spherical ball made of iron has diameter 6cm. If density of iron $8g/cm^3$ the mass of the ball is nearly

(a) 0.9kg   (b) 0.8kg   (c) 0.7kg   (d) 0.62kg

Answer: (a)

Diameter=D=6 cm

Radius = r = 3 cm

Density = 8 g/ cm³

Volume of a sphere $= \frac{4}{3}\pi r^3$

$= \frac{4}{3} \times \frac{22}{7} \times 3 \times 3 \times 3$

$= \frac{2376}{21} \, cm^3 = 113.14 \, cm^3$

Density = Mass ÷ Volume

Mass = Density × Volume

$= 8 \times 113.14 = 905.12 \, grams \, [\, approx.\,]$

Converting grams into kilograms $\frac{905.12}{1000} = 0.9 kg$

Q 92. A hollow sphere of internal and external diameter 4cm and 8cm is melted and recasted into a cone of base diameter 8cm. The height of the cone is

(a) 14cm   (b) 15cm   (c) 28cm   (d) 30cm

Answer: (a)

Internal diameter of hollow sphere $(d) = 4\ cm.$

Internal radius of hollow sphere $(r) = \frac{4}{2} = 2\ cm$

External diameter of hollow sphere $(D) = 8\ cm.$

External radius of hollow sphere $(R) = \frac{8}{2} = 4\ cm.$

Volume of the Hollow sphere $= \frac{4}{3}\pi(R^3 - r^3)$

$= \frac{4}{3}\pi(4^3 - 2^3)$

$= \frac{4}{3}\pi(64 - 8)$

$= \frac{4}{3}\pi(56)\ cm^3$

Diameter of the cone $(d_1) = 8\ cm$

Radius of the cone $(r_1) = \frac{8}{2} = 4\ cm$

Let the height of the cone be h cm.

Volume of the cone $= \frac{1}{3}\pi r_1^2 h$

$= \frac{1}{3}\pi \times 4^2 \times h = \frac{16\pi h}{3}$

Volume of the cone = Volume of the hollow sphere

$\frac{16\pi h}{3} = \frac{4}{3}\pi(56)$

$16h = 4 \times 56$

$h = \frac{4 \times 56}{16}$

$h = \frac{56}{4} = 14\ cm$

Q 93. If $tan\theta = \frac{4}{5}$ then $\frac{1-cos\theta}{1+cos\theta} =$ _____

(a) $\frac{1}{2}$ (b) $\frac{1}{8}$ (c) $\frac{1}{16}$ (d) $-\frac{1}{4}$

Answer: (d)

$tan\theta = \frac{4}{5}$

Opposite side = 4

Adjacent side = 5

Then the value of hypotenuse $= \sqrt{5^2 - 4^2} = \sqrt{25 - 16} = \sqrt{9} = 3$

$cos\theta = \frac{adjacent}{hypotenuse} = \frac{5}{3}$

$\frac{1-cos\theta}{1+cos\theta} = \frac{\left(1-\frac{5}{3}\right)}{1+\frac{5}{3}} = -\frac{1}{4}$

Q94. $2x\, sin60° - 3y\, tan\, 45° = 0$ and $x\, tan\, 60° + \sqrt{2}y\, cosec\, 45° = 5$ then value of x and y respectively are

(a) $\sqrt{3}\ and\ \frac{1}{2}$ (b) $\sqrt{2}\ and\ 1$ (c) $\sqrt{3}\ and\ 1$ (d) None of the above

Answer: (c)

$2x\, sin60° - 3y\, tan\, 45° = 0$

$2x\left(\frac{\sqrt{3}}{2}\right) - 3y(1) = 0$

$\sqrt{3}x - 3y = 0$ .... (1)

$x\, tan\, 60° + \sqrt{2}y\, cosec\, 45° = 5$

$x(\sqrt{3}) + \sqrt{2}y\sqrt{2} = 5$

$\sqrt{3}x + 2y = 5$ .... (2)

By solving the equation 1 and 2 we get

$-5y = -5$

$y = 1$

Put y = 1 in equation 1

$\sqrt{3}x - 3(1) = 0$

$\sqrt{3}x = 3$

$x = \frac{3}{\sqrt{3}}$

$x = \sqrt{3}$

$\therefore x = \sqrt{3}\ and\ y = 1$

Q 95. Maximum and Minimum value of $5sinX + 3cosX$ respectively are

(a) -8 and +8   (b) 2 and 8   (c) $-\sqrt{34}\ and\ \sqrt{34}$ (d) None of these

Answer: (c)

Given $5sinX + 3cosX$

$a = 5$

$b = 3$

Formula to find Maximum value $= +\sqrt{a^2 + b^2}$

$= +\sqrt{5^2 + 3^2} = +\sqrt{25 + 9} = +\sqrt{34}$

Minimum Value $= -\sqrt{a^2 + b^2}$

$= -\sqrt{5^2 + 3^2} = -\sqrt{25 + 9} = -\sqrt{34}$

Minimum and Maximum values are $-\sqrt{34}\ and\ \sqrt{34}$

Q 96. Mean of 5 number is 22. If one number is excluded, mean become 19. The excluded number is

(a) 68   (b) 34   (c) 17   (d) 20

Answer: (b)

The mean of 5 numbers = 22

Sum of all 5 numbers = $5 \times 22 = 110$

If one number is excluded, numbers remained = 4

The mean of 4 numbers = 19

Sum of these 4 numbers = $4 \times 19 = 76$

Excluded number = Sum of 5 numbers - Sum of 4 numbers

$\Rightarrow 110 - 76$

$= 34$

Hence, 34 is the excluded number.

Q 97. Mean mark of 60 students of a class are 63 and that of 40 other students are 60. The mean mark of all together are

(a) 61.8   (b) 61.5   (c) 62   (d) None of the above

Answer: (a)

Mean of marks of 60 students of a class = 63

Mean of marks of 40 other students of the class = 60

Total number of students = 100

$Mean = \frac{Sum\ of\ all\ marks}{Number\ of\ students}$

$63 = \frac{Sum\ of\ all\ marks}{60}$

Sum of all marks = 3780

For 40 students,

$60 = \frac{Sum\ of\ all\ marks}{40}$

Sum of all marks = 2400

$Mean\ of\ 100\ students\ = \frac{2400 + 3780}{100} = 61.8$

Q 98. The median of 7, 11, 23, 36,42, 50, 61, 73, 110 and 120 is

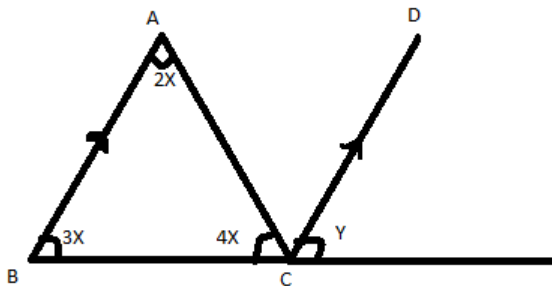(a) 28.4   (b) 46   (c) 60   (d) 55.5

Answer: (b)

First arrange the given numbers in to ascending order 7, 11, 23, 36, 42, 50, 61, 73, 110 and 120

There are 10 observations given so

Median $= \frac{(5^{th}+6^{th})\ term}{2} = \frac{42+50}{2} = \frac{92}{2} = 46$

Median = 46

Q 99. In the given figure, $CD||AB$, find y

(a) 79°   (b) 60°   (c) 74°   (d) 77°

Answer: (b)

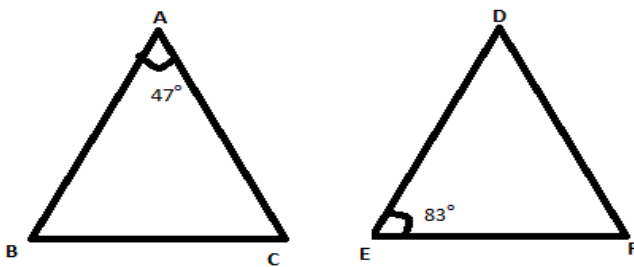$2x + 3x + 4x = 180$

$9x = 180$

$x = 20$

Then $4x + 2x + y = 180$

$6x + y = 180$

$6(20) + y = 180$

$120 + y = 180$

$y = 60°$

Q 100. If ΔABC and ΔDEF are similar triangle in which $\angle A = 47°$ and $\angle E = 83°$ and then $\angle C$ is

(a) 50°   (b) 70°   (c) 60°   (d) 80°

Answer: (b)

ABC is similar to DEF

Then...$\angle A = \angle D = 47°$

...$\angle B = ...\angle E = 63°$

...$\angle E = ...\angle F$

Then according to angle sum property

$\angle A + \angle B + \angle C = 180°$

$47° + 63° + \angle C = 180°$

$120° + \angle C = 180°$
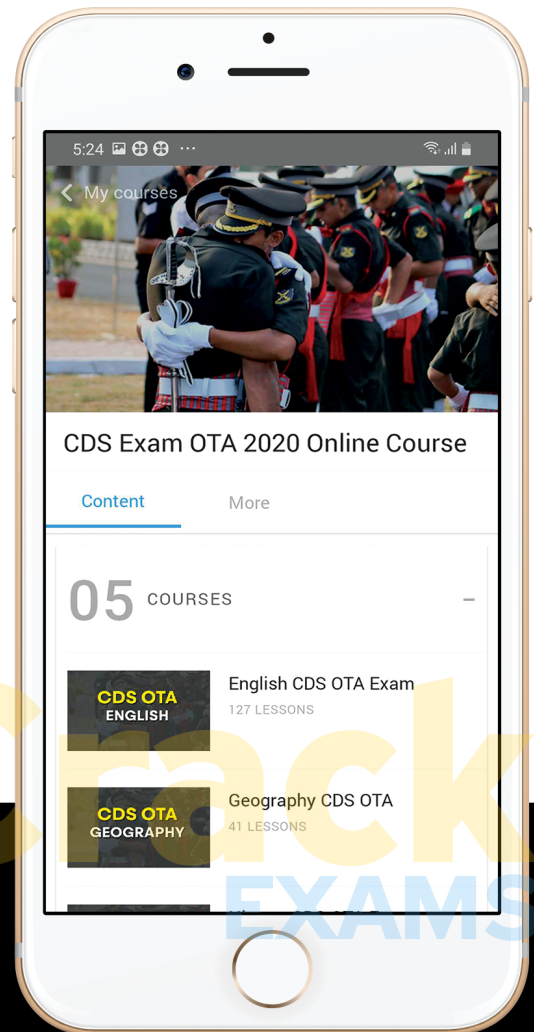
$\angle C = 60°$

So, the value of $\angle C = 70°$

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