

# CAT 1991



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# CAT 1991

## Quant

### Instructions

For the following questions answer them individually

### Question 1

Select the set in which the statements are logically related.

- A. Different hues are obtained from primary colours.
- B. A rainbow consists of several hues.
- C. Blue and red can give different hues.
- D. Red is a primary color.
- E. Blue can give different hues.
- F. Red can give different hues.

A ACE

B AEF

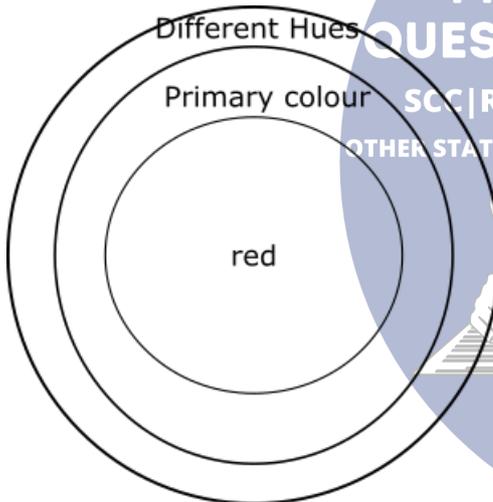
C ADF

D CDF

Answer: C

### Explanation:

From the below given Venn diagram, we can see that F is the conclusion of ADF



All the other options are not logically related.

In ACE : CE are reiterated, A is unrelated to CE

In AEF : All three statements are facts.

In CDF: C and F are reiterated.

### Question 2

Is it more profitable for Company M to produce Q?

I. Product R sells at a price four times that of Q

II. One unit of Q requires 2 units of labour, while one unit of R requires 5 units of labour. There is a no other constraint on production.

A The question can be answered with the help of statement I alone.

B The question can be answered with the help of statement II, alone.

C Both, statement I and statement II are needed to answer the question

D The question cannot be answered even with the help of both the statements.

Answer: C

**Explanation:**

Taking only 1st statement into consideration, nothing certain can be said about product Q

Similarly with the only 2nd statement, we have only 1 information about product Q and R.

But considering both statements together we can say with sufficient information that product Q will be more beneficial than product R

**Question 3**

**A train started from Station A, developed engine trouble and reached Station B, 40 minutes late. What is the distance between Stations A and B?**

**I. The engine trouble developed after travelling 40 km from Station A and the speed reduced to 1/4th of the original speed.**

**II. The engine trouble developed after travelling 40 km from station A in two hours and the speed reduced to 1/4th of the original speed.**

A The question can be answered with the help of statement I alone.

B The question can be answered with the help of statement II, alone.

C Both, statement I and statement II are needed to answer the question

D The question cannot be answered even with the help of both the statements.

Answer: B

**Explanation:**

Using first statement alone, we won't be able to find distance as insufficient data is there.

Now using second statement alone, we can find distance d as follows:

velocity before engine failure =  $\frac{40}{2} = 20$  km/h and after engine failure = 5 km/hr

And we know total time exceeds 45 min.

$$\text{Hence } 2 + \frac{d}{5} = 60 + \frac{40+d}{20}$$

$$\text{or } d = \frac{40}{9} \text{ km.}$$

**Question 4**

**What is the value of prime number x?**

**I.  $x^2 + x$  is a two-digit number greater than 50**

**II.  $x^3$  is a three digit number.**

A The question can be answered with the help of statement I alone.

B The question can be answered with the help of statement II, alone.

C Both, statement I and statement II are needed to answer the question

D The question cannot be answered even with the help of both the statements.

Answer: A

**Explanation:**

Considering 1st statement alone,  $x^2 + x$  is greater than 50, a two digit number and x is a prime number, then it has to be 7.

On the other hand, we cannot uniquely determine the value of x using statement B alone. Option a) is the correct answer.

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### Question 5

The average of three unequal quotations for a particular share is Rs.110. If all are quoted in integral values of rupee, does the highest quotation exceed Rs. 129?

I. The lowest quotation Rs. 100.

II. One of the quotations is Rs. 115.

- A The question can be answered with the help of statement I alone.
- B The question can be answered with the help of statement II, alone.
- C Both, statement I and statement II are needed to answer the question
- D The question cannot be answered even with the help of both the statements.

Answer: A

### Explanation:

As Avg. of 3 quotations is 110, so the sum of them will be 330

Now considering 1st statement alone, if the lowest quotation is 100, then highest can not exceed 129 because then the sum of all three will exceed from 330.

So we can get the answer by considering the first statement only.

### Question 6

How many people ( from the group surveyed ) read both Indian Express and Times of India?

I. Out of total of 200 readers, 100 read Indian Express, 120 read Times of India and 50 read Hindu.

II. Out of a total of 200 readers, 100 read Indian Express, 120 reads Times of India and 50 read neither.

- A The question can be answered with the help of statement I alone.
- B The question can be answered with the help of statement II, alone.
- C Both, statement I and statement II are needed to answer the question.
- D The question cannot be answered even with the help of both the statements.

Answer: B

### Explanation:

Considering first statement only, given information will not suffice to answer that how many people read both Indian express and Times of India as data regarding intersection of all and data regarding number of people reading other 2 newspapers is not given  
Now if we consider only second statement then we can answer about people reading both Indian express and Times of India as follows:

Total readers = 200 = 100 (indian express) + 120 (Times of india) + 50 (Reading none) - Reading both.

So Reading both newspapers = 270-200 = 70

### Question 7

X says to Y, 'I am 3 times as old as you were 3 years ago'. How old is X?

I. Y's age 17 years from now is same as X.s present age.

II. X's age nine years from now is 3 times Y.s present age.

- A The question can be answered with the help of statement I alone.
- B The question can be answered with the help of statement II, alone.
- C Both, statement I and statement II are needed to answer the question
- D The question cannot be answered even with the help of both the statements.

Answer: A

### Explanation:

Given information  $X=3(Y-3)$

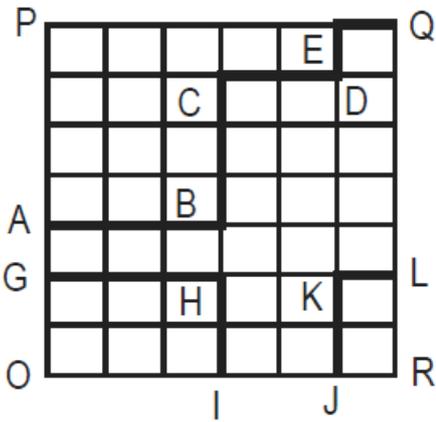
Now considering first statement alone, we will have following equation:

$$Y+17 = X$$

On solving two eq. we can find the value of X.

Hence answer will be A.

### Question 8



What is the area under the line GHI-JKL in the given quadrilateral OPQR, knowing that all the small spaces are squares of the same area?

- I. Length ABCDEQ is greater than or equal to 60.
- II. Area OPQR is less than or equal to 1512.

- A The question can be answered with the help of statement I alone.
- B The question can be answered with the help of statement II, alone.
- C Both, statement I and statement II are needed to answer the question.
- D The question cannot be answered even with the help of both the statements.

Answer: C

#### Explanation:

Let the side of the smallest square be  $x$ .

According to statement 1,  $10x \geq 60$

$$x \geq 6$$

According to statement 2,  $7x * 6x \leq 1512$

$$x \leq 6$$

From both the statements  $x = 6$  and the answer can be determined.

### Question 9

What is the radius of the circle?

- I. Ratio of its area to circumference is  $> 7$ .
- II. Diameter of the circle is  $\leq 32$ .

- A The question can be answered with the help of statement I alone.
- B The question can be answered with the help of statement II, alone.
- C Both, statement I and statement II are needed to answer the question
- D The question cannot be answered even with the help of both the statements.

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**Answer: D**

**Explanation:**

Considering the first statement only, we will get radius  $> 14$ . Hence, we can't find the value of radius with this information only. Now considering the second statement only, we will get radius  $\leq 16$ . Hence, we can't find the value of radius with this information only. Now considering both statements simultaneously, we can't find an absolute value of radius. Hence, answer will be D

**Question 10**

**What is the time difference between New York and London?**

- I. The departure time at New York is exactly 9.00 a.m local time and the arrival time at London is at 10.00 a.m. local time.**
- II. The flight time is 5 hours.**

- A** The question can be answered with the help of statement I alone.
- B** The question can be answered with the help of statement II, alone.
- C** Both, statement I and statement II are needed to answer the question
- D** The question cannot be answered even with the help of both the statements.

**Answer: C**

**Explanation:**

Considering first and second statement alone, we can't say about time difference as information will not be sufficient. Now considering both statements together, we can say that if journey duration is of 5 hours and flight departure time is 9:00 a.m., arrival time according to new york will be 2:00 p.m. but it is given that in London, arrival time is 10:00 a.m. Hence, the time difference will be of 4 hours between New York and London

**Question 11**

**Mr. Murthy takes the morning train to his office from station A to station B, and his colleague Mr. Rahman joins him on the way. There are three stations C, D and E on the way not necessarily in that sequence. What is the sequence of stations?**

- I. Mr. Rahman boards the train at D.**
- II. Mr. Thomas, who travels between C & D has two segments of journey in common with Mr. Murthy but none with Mr. Rahman.**

- A** The question can be answered with the help of statement I alone.
- B** The question can be answered with the help of statement II, alone.
- C** Both, statement I and statement II are needed to answer the question
- D** The question cannot be answered even with the help of both the statements.

**Answer: C**

**Explanation:**

Considering first statement and second statement alone, information will not suffice to find the sequence of stations, But if we consider both statements together we can tell about the sequence of stations as between A and B, Mr. Thomas travels with Mr. Murthy but not with Mr. Rahman. That means Mr. Thomas must have departed from station C and arrived at station D. And it is also given that between C and D there are two segments. Hence, E lies between C and D, and Mr. Rahman departed from station D.

**Question 12**

**A function can sometimes reflect on itself, i.e. if  $y = f(x)$ , then  $x = f(y)$ . Both of them retain the same structure and form. Which of the following functions has this property?**

A  $y = \frac{2x+3}{3x+4}$

B  $y = \frac{2x+3}{3x-2}$

C  $y = \frac{3x+4}{4x-5}$

D None of the above

**Answer: B**

**Explanation:**

Putting y as x and x as y in given options, only options B satisfies the function property as follows.

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

$$\text{or } 3xy - 2x = 2y+3$$

$$\text{or } y(3x-2) = 2x+3$$

$$\text{or } y = \frac{2x+3}{3x-2}$$

**Question 13**

What is the value of k for which the following system of equations has no solution:

$$2x-8y = 3 \text{ and } kx + 4y = 10$$

A -2

B 1

C -1

D 2

**Answer: C**

**Explanation:**

On solving both equations, we will get  $x = \frac{23}{2+2k}$   
now for having no solutions to system  $2+2k$  should be 0.  
Hence  $k=-1$

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**Question 14**

How many 3 - digit even number can you form such that if one of the digits is 5, the following digit must be 7?

A 5

B 405

C 365

D 495

**Answer: C**

**Explanation:**

For a number to be even, its unit digit should be 0,2,4,6,8

Case 1: One of the digit is 5

Hence according to question, 5 can't come in middle and at unit's place, so numbers will be 570,572,574,576,578.

Case 2: No digit is 5

Hence the hundreds place can be filled in 8 ways (except 0,5) and tens place can be filled in 9 ways (except 5).

Number of ways =  $8 * 9 * 5 = 360$

Hence total number of ways =  $360 + 5 = 365$

#### Question 15

Alord got an order from a garment manufacturer for 480 Denim Shirts. He brought 12 sewing machines and appointed some expert tailors to do the job. However, many didn't report to duty. As a result, each of those who did, had to stitch 32 more shirts than originally planned by Alord, with equal distribution of work. How many tailors had been appointed earlier and how many had not reported for work?

A 12,4

B 10,3

C 10,4

D None of these

Answer: C

#### Explanation:

Suppose he appointed  $x$  persons and  $y$  of them didn't come. Hence work done by each of them increases by 32.

$$\text{So } \frac{480}{x-y} - \frac{480}{x} = 32$$

Now we can check options by putting in the above eq.

$x=10$  and  $y=4$  will be our answer

#### Question 16

Iqbal dealt some cards to Mushtaq and himself from a full pack of playing cards and laid the rest aside. Iqbal then said to Mushtaq. "If you give me a certain number of your cards, I will have four times as many cards as you will have. If I give you the same number of cards, I will have thrice as many cards as you will have". Of the given choices, which could represent the number of cards with Iqbal?

A 9

B 31

C 12

D 35

Answer: B

#### Explanation:

Let's say Iqbal has  $x$  cards initially and Mushtaq has  $y$  number of cards initially.

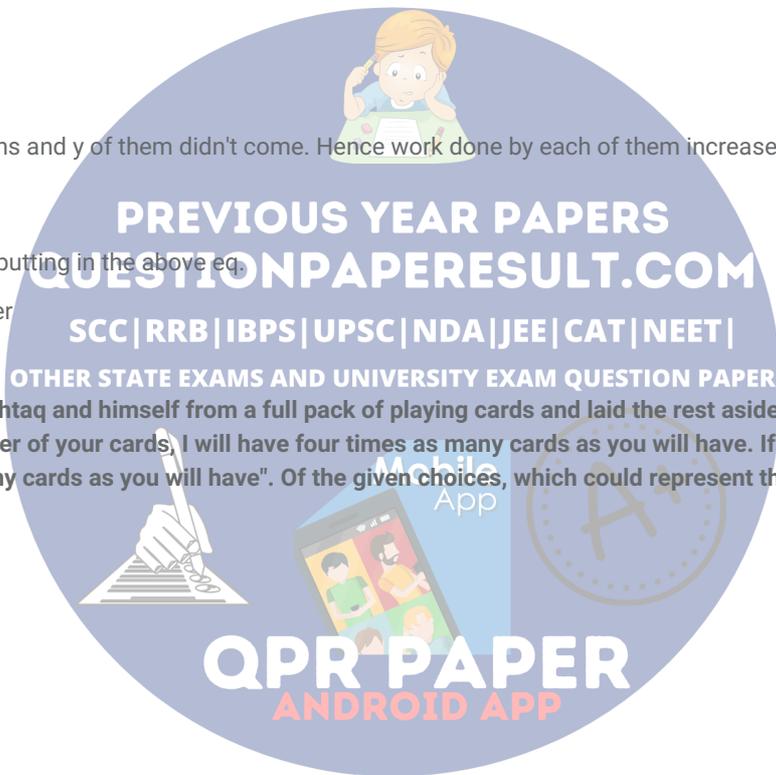
So first Mushtaq gave  $t$  cards to Iqbal, hence  $(x+t) = 4(y-t)$

Now second time, Iqbal gave  $t$  cards to Mushtaq, hence  $x-t = 3(y+t)$

Solving above two equations we will get  $x=31t$  and  $y=9t$

And we know  $x+y < 52$  hence  $40t < 52$

because  $t$  should be a whole number it will be 1 here and  $x=31$  and  $y=9$



Question 17

Fifty college teachers are surveyed as to their possession of colour TV, VCR and tape recorder. Of them, 22 own colour TV, 15 own VCR and 14 own tape recorders. Nine of these college teachers own exactly two items out of colour TV, VCR and tape recorder; and, one college teacher owns all three. How many of the 50 teachers own none of the three, colour TV, VCR or tape recorder?

- A 4
- B 9
- C 10
- D 11

Answer: C

**Explanation:**

Number of people owning exactly 2 articles = 9

Number of people owning exactly 3 articles = 1

Applying AUBUC formula, we get

$$\text{AUBUC} = 22 + 15 + 14 - 9 - 2 \times (1) = 40$$

Number of people who do not own any article =  $50 - 40 = 10$

Question 18

Three times the first of three consecutive odd integers is 3 more than twice the third. What is the third integer?

- A 15
- B 9
- C 11
- D 5

Answer: A

**Explanation:**

Suppose consecutive odd integers are:  $(a-2)$ ,  $a$ ,  $(a+2)$

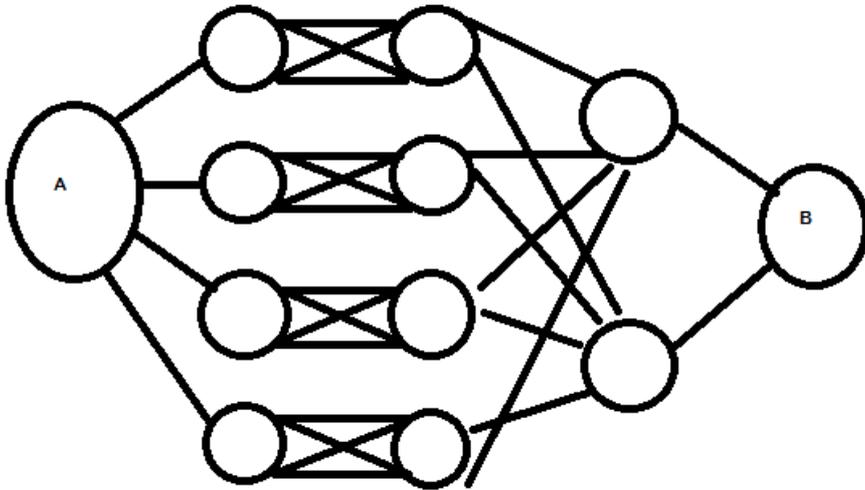
$$\text{Hence, } 3a - 6 = 2(a + 2) + 3 \Rightarrow a = 13$$

$$a + 2 = 15$$

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Question 19

What is the total number of ways to reach A to B in the network given, such that no node is included twice and one can only move from left to right?



A 24

B 32

C 48

D 60

Answer: B

Explanation:

4 first level nodes are connected to A => 4 ways.

Each of these first level nodes are connected to 4 second level nodes by four connections => 4 ways

Each of these second level nodes are connected to 2 third level nodes => 2 ways.

Each of these third level nodes are connected to B by 1 route => 1 way

=>  $4 * 4 * 2 * 1 = 32$  ways.

Question 20

Let the consecutive vertices of a square S be A,B,C & D. Let E,F & G be the mid-points of the sides AB, BC & AD respectively of the square. Then the ratio of the area of the quadrilateral EFDG to that of the square S is nearest to

A 1/2

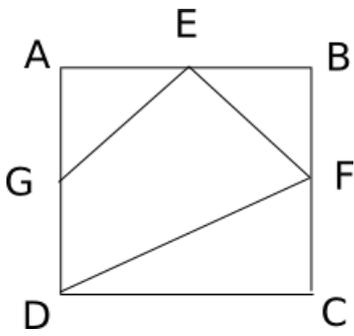
B 1/3

C 1/4

D 1/8

Answer: A

Explanation:



Let the side of the square be 1 cm

So, area of triangle AGE =  $\frac{1}{2} * \frac{1}{2} * \frac{1}{2} = \frac{1}{8}$

Similarly, area of triangle EBF =  $\frac{1}{8}$

Area of triangle DFC =  $\frac{1}{2} * 1 * \frac{1}{2} = \frac{1}{4}$

Area of the square =  $1 * 1 = 1$

So, area of the quadrilateral =  $1 - (\frac{1}{8} + \frac{1}{8} + \frac{1}{4}) = 1 - \frac{1}{2} = \frac{1}{2}$

Option a) is the correct answer.

**Question 21**

$2^{73} - 2^{72} - 2^{71}$  is the same as

A  $2^{69}$

B  $2^{70}$

C  $2^{71}$

D  $2^{72}$

**Answer: C**

**Explanation:**

$$2^{71}(2^2 - 2^1 - 1)$$

$$2^{71}(4 - 2 - 1)$$

$$2^{71}$$

**Question 22**

The number of integers n satisfying  $-n+2 \geq 0$  and  $2n \geq 4$  is

A 0

B 1

C 2

D 3

**Answer: B**

**Explanation:**

$$-n+2 \geq 0$$

$$\text{or } n \leq 2$$

$$\text{and } 2n \geq 4$$

$$\text{or } n \geq 2$$

So we can take only one value of n i.e. 2

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**Question 23**

The sum of two integers is 10 and the sum of their reciprocals is  $\frac{5}{12}$ . Then the larger of these integers is

- A 2
- B 4
- C 6
- D 8

**Answer: C**

**Explanation:**

let's say integers are x and y

$$\text{so } x+y = 10 \Rightarrow y = 10 - x$$

$$\text{and } \frac{1}{x} + \frac{1}{y} = \frac{5}{12}$$

$$\frac{1}{x} + \frac{1}{10-x} = \frac{5}{12}$$

$$\Rightarrow (10 - x + x) \cdot 12 = 5x(10-x)$$

$$\Rightarrow 120 = 50x - 5x^2$$

$$\Rightarrow 24 = 10x - x^2$$

$$\Rightarrow x = 4, 6$$

$$\Rightarrow y = 6 \text{ or } 4$$

The bigger of the two numbers is 6.

**Question 24**

A circle is inscribed in a given square and another circle is circumscribed about the square. What is the ratio of the area of the inscribed circle to that of the circumscribed circle?

- A 2 : 3
- B 3 : 4
- C 1 : 4
- D 1 : 2

**Answer: D**

**Explanation:**

As we know that area of the circle is directly proportional to the square of its radius.

$$\text{Hence } \frac{A_{ic}}{A_{cc}} = \frac{x^2}{(\frac{x}{\sqrt{2}})^2}$$

Where  $x$  is side of square (say),  $ic$  is inscribed circle with radius  $\frac{x}{2}$ ,  $cc$  is circumscribed circle with radius  $\frac{x}{\sqrt{2}}$

So ratio will be 1:2

**Question 25**

If  $y = f(x)$  and  $f(x) = \frac{(1-x)}{(1+x)}$ , which of the following is true?

- A  $f(2x) = f(x) - 1$
- B  $x = f(2y) - 1$
- C  $f(1/x) = f(x)$

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D  $x = f(y)$

Answer: D

**Explanation:**

Among all options only D satisfies the given equations as follows:

$$f(y) = \frac{1-y}{1+y}$$

and for x:

$$y + xy = 1 - x$$

$$x(1 + y) = 1 - y$$

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

Hence  $x = f(y)$

**Instructions**

There were a hundred schools in a town. Of these, the number of schools having a play - ground was 30, and these schools had neither a library nor a laboratory. The number of schools having a laboratory alone was twice the number of those having a library only. The number of schools having a laboratory as well as a library was one-fourth the number of those having a laboratory alone. The number of schools having either a laboratory or a library or both was 35.

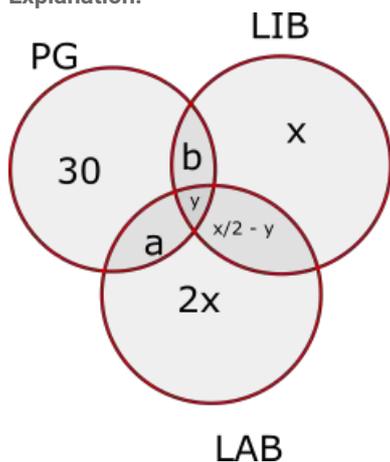
**Question 26**

How many schools had none of the three viz., laboratory, library or play - ground?

- A 20
- B 5
- C 30
- D 35

Answer: D

**Explanation:**



The diagram for this question has been shown:

Total number of schools having either or LAB or LIB or both =  $a+b+x/2 - y + y + 3x = 7x/2 + a + b = 35$

Here  $a = b = y = 0$

$$7x/2 = 35$$

$$x = 10$$

Total number of schools having at least one of PG, LIB or LAB =  $30+2x+x+x/2 = 30+3x+x/2 = 30+30+5 = 65$

Number of schools having neither of the three =  $100-65 = 35$

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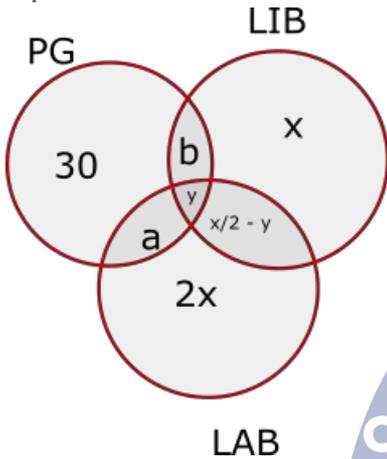
Question 27

What was the ratio of schools having laboratory those having library?

- A 1 : 2
- B 5 : 3
- C 2 : 1
- D 2 : 3

Answer: B

Explanation:



The diagram for this question has been shown.

Total number of schools having either or LAB or LIB or both =  $a + b + \frac{x}{2} - y + y + 3x = \frac{7x}{2} + a + b = 35$

It has been given that the schools having playground don't have a Library or Laboratory.

Hence  $a = b = y = 0$

$$\frac{7x}{2} = 35$$

$$x = 10$$

$$\text{Required ratio} = 25:15 = 5:3$$

Instructions

For the following questions answer them individually

Question 28

A player rolls a die and receives the same number of rupees as the number of dots on the face that turns up. What should the player pay for each roll if he wants to make a profit of one rupee per throw of the die in the long run?

- A Rs. 2.50
- B Rs. 2
- C Rs.3.50
- D Rs. 4

Answer: A

Explanation:

The expected money got by the player =  $1 \cdot \frac{1}{6} + 2 \cdot \frac{1}{6} + 3 \cdot \frac{1}{6} + 4 \cdot \frac{1}{6} + 5 \cdot \frac{1}{6} + 6 \cdot \frac{1}{6} = \frac{21}{6} = \text{Rs } 3.5$

So, the player has to pay  $3.5 - 1 = \text{Rs } 2.5$  to get a profit of Re 1 in the long run.

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**Question 29**

Three machines, A, B and C can be used to produce a product. Machine A will take 60 hours to produce a million units. Machine B is twice as fast as Machine A. Machine C will take the same amount of time to produce a million units as A and B running together. How much time will be required to produce a million units if all the three machines are used simultaneously?

- A 12 hours
- B 10 hours
- C 8 hours
- D 6 hour

**Answer: B**

**Explanation:**

As machine B's efficiency is twice as of A's, Hence, it will complete its work in 30 hours.

And C's efficiency is putting A and B together i.e. = 20 hours  $\left(\left(\frac{1}{60} + \frac{1}{30}\right)^{-1}\right)$

Now if all three work together, then it will be completed in x (say) days.

$$\frac{1}{x} = \frac{1}{20} + \frac{1}{30} + \frac{1}{60}$$

or  $x = 10$  hours

**Question 30**

Let  $Y = \text{minimum of } \{(x+2), (3-x)\}$ . What is the maximum value of Y for  $0 \leq x \leq 1$ ?

- A 1.0
- B 1.5
- C 3.1
- D 2.5

**Answer: D**

**Explanation:**

For  $x < 0$ ;  $y = x + 2$

for  $0 < x < \frac{1}{2}$ ;  $y = x + 2$

for  $x > \frac{1}{2}$ ;  $y = 3 - x$

Hence,  $y$  attains its maxima at  $x = \frac{1}{2}$  i.e.  $y = 2.5$

**Question 31**

There are 3 clubs A, B & C in a town with 40, 50 & 60 members respectively. While 10 people are members of all 3 clubs, 70 are members in only one club. How many belong to exactly two clubs?

- A 20
- B 25
- C 50

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D 70

Answer: B

**Explanation:**

We know that  $x + y + z = T$  and  $x + 2y + 3z = R$ , where  
 $x$  = number of members belonging to exactly 1 set = 70  
 $y$  = number of members belonging to exactly 2 sets  
 $z$  = number of members belonging to exactly 3 sets = 10  
 $T$  = Total number of members  
 $R$  = Repeated total of all the members =  $(40+50+60) = 150$   
 Thus we have two equations and two unknowns. Solving this we get  $y = 25$   
 So, 25 people belong to exactly 2 clubs.

**Question 32**

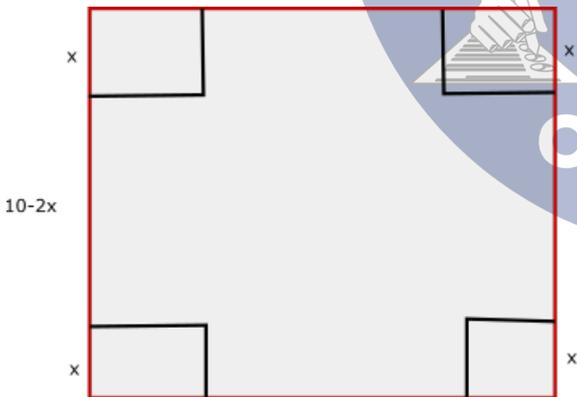
A square piece of cardboard of sides ten inches is taken and four equal squares pieces are removed at the corners, such that the side of this square piece is also an integer value. The sides are then turned up to form an open box. Then the maximum volume such a box can have is

- A 72 cubic inches.
- B 24.074 cubic inches.
- C  $\frac{2000}{27}$  cubic inches
- D 64 cubic inches.

Answer: A

**Explanation:**

Let the side of the square which is cut be  $x$ .



Volume of the cuboid so formed  $= (10 - 2x)^2 * x$   
 Put  $x = 1, 2, 3$  and so on till 5  
 Maximum volume would be at  $x = 2$   
 Volume of the cuboid so formed  $= (10 - 2 * 2)^2 * 2 = 72$

**Question 33**

$x, y$  and  $z$  are three positive integers such that  $x > y > z$ . Which of the following is closest to the product  $xyz$ ?

- A  $(x-1)yz$
- B  $x(y-1)z$

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C  $xy(z-1)$

D  $x(y+1)z$

Answer: A

Explanation:

The expressions in the four options can be expanded as

$xyz-yz$ ;  $xyz-xz$ ;  $xyz-xy$  and  $xyz+xz$

The closest value to  $xyz$  would be  $xyz-yz$ , as  $yz$  is the least value among  $yz$ ,  $xz$  and  $xy$ .

Option a) is the correct answer.

Question 34

What is the greatest power of 5 which can divide  $80!$  exactly?

A 16

B 20

C 19

D None of these

Answer: C

Explanation:

The highest power of 5 in  $80! = [80/5] + [80/5^2] = 16 + 3 = 19$

So, the highest power of 5 which divides  $80!$  exactly = 19

Question 35

A third standard teacher gave a simple multiplication exercise to the kids. But one kid reversed the digits of both the numbers and carried out the multiplication and found that the product was exactly the same as the one expected by the teacher. Only one of the following pairs of numbers will fit in the description of the exercise. Which one is that?

A 14, 22

B 13, 62

C 19, 33

D 42, 28

Answer: B

Explanation:

$13 \times 62 = 806$

$31 \times 26 = 806$

Hence the answer is option b

Question 36

Find the minimum integral value of  $n$  such that the division  $\frac{55n}{124}$  leaves no remainder.

A 124

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B 123

C 31

D 62

Answer: A

**Explanation:**

As 55 and 124 don't have any common factor, and  $n$  has to be a minimum integer, Hence, it should be 124 only. So that given equation won't have a remainder.

**Question 37**

Let  $k$  be a positive integer such that  $k+4$  is divisible by 7. Then the smallest positive integer  $n$ , greater than 2, such that  $k+2n$  is divisible by 7 equals

A 9

B 7

C 5

D 3

Answer: A

**Explanation:**

let's say  $k+4 = 7m$

$k = 7m-4$

Now for  $k+2n$  or  $7m+(2n-4)$  is also multiple of 7.

or  $2n-4$  should be a multiple of 7

So  $2n-4 = 7p$

or  $2n = 7p+4$

For  $p=2; n=9$  ( $p$  cannot be 1 as  $n$  is an integer)

**Question 38**

A calculator has two memory buttons, A and B. Value 1 is initially stored in both memory locations. The following sequence of steps is carried out five times:

add 1 to B

multiply A to B

store the result in A

What is the value stored in memory location A after this procedure?

A 120

B 450

C 720

D 250

Answer: C

**Explanation:**

A calculator has two memory buttons, A and B. Value 1 is initially stored in both memory locations. The following sequence of steps is carried out five times:

add 1 to B

multiply A to B

store the result in A

What is the value stored in memory location A after this procedure?

The value in A and B before the start of the process is 1 and 1 respectively.

In 1st iteration,

After step I,  $A = 1$  and  $B = 2$

After steps II and III,  $A = 1 * 2 = 2$ ,  $B = 2$

In 2nd iteration,

After step I,  $A = 2$  and  $B = 3$

After steps II and III,  $A = 2 * 3 = 6$ ,  $B = 3$

In 3rd iteration,

After step I,  $A = 6$  and  $B = 4$

After steps II and III,  $A = 6 * 4 = 24$ ,  $B = 4$

In 4th iteration,

After step I,  $A = 24$  and  $B = 5$

After steps II and III,  $A = 24 * 5 = 120$ ,  $B = 5$

In 5th iteration,

After step I,  $A = 120$  and  $B = 6$

After steps II and III,  $A = 120 * 6 = 720$ ,  $B = 6$

Hence, option D is the correct answer.

### Question 39

A one rupee coin is placed on a table. The maximum number of similar one rupee coins which can be placed on the table, around it, with each one of them touching it and only two others is

- A 8
- B 6
- C 10
- D 4

Answer: B

### Explanation:

If we join centres of 2 outer circles with the centre circle, it will make an equilateral triangle.

Hence at the centre it will make an angle of  $60^\circ$  so total  $\frac{360^\circ}{60^\circ} = 6$  triangles will be there

Hence, 6 outer circles will be there.

### Question 40

Gopal went to a fruit market with certain amount of money. With this money he can buy either 50 oranges or 40 mangoes. He retains 10% of the money for taxi fare. If he buys 20 mangoes, then the maximum number of oranges he can buy is

- A 25
- B 20
- C 18
- D 6

Answer: B

### Explanation:

Let's say the amount of money Gopal has is  $100x$  rs. With this money he can buy either 50 oranges or 40 mangoes.

$$100x$$

Hence, the cost of 1 orange =  $\frac{100x}{50} = \text{Rs. } 2x$

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$$100x$$

Similarly, the cost of 1 mango =  $\frac{100x}{40} = \text{Rs. } 2.5x$

Taxi fare =  $0.1 \times 100x = 10x$

Remaining money with Gopal =  $90x$

Cost incurred in buying 20 mangoes =  $2.5 \times 20 = 50x$

Hence, the amount of money left with Gopal =  $100x - 10x - 50x = 40x$

$$40x$$

Therefore, we can say that with this much money he can buy a maximum of  $\frac{40x}{2x} = 20$  oranges.

#### Question 41

Every day Neera's husband meets her at the city railway station at 6.00 p.m. and drives her to their residence. One day she left early from the office and reached the railway station at 5.00 p.m. She started walking towards her home, met her husband coming from their residence on the way and they reached home 10 minutes earlier than the usual time. For how long did she walk?

- A 1 hour
- B 50 minutes
- C 1/2 hour
- D 55 minutes

**Answer: D**

#### Explanation:

Since we know that Neera's husband drives at a uniform speed to and from his residence.

If he saved 10 mins overall travel time, he should have driven 5 mins less towards railway station and 5 mins less while driving towards residence.

If he saved 5 minutes in his return journey, he should have started to return 5 minutes before his actual return time.

When the husband met Neera, he should have met her 5 minutes before the actual meeting time i.e. at 5.55 PM.

So, Neera must have walked for 55 minutes from 5 PM.

#### Question 42

In Sivakasi, each boy's quota of match sticks to fill into boxes is not more than 200 per session. If he reduces the number of sticks per box by 25, he can fill 3 more boxes with the total number of sticks assigned to him. Which of the following is the possible number of sticks assigned to each boy?

- A 200
- B 150
- C 125
- D 175

**Answer: B**

#### Explanation:

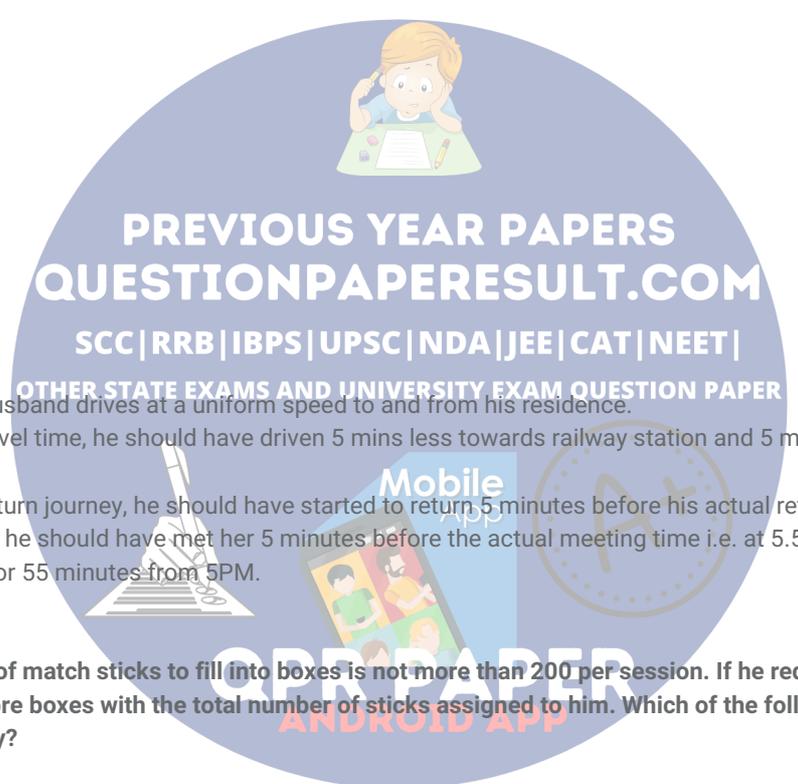
Let the number of sticks assigned to each boy be  $N$ .

Let the number of boxes be  $M$ .

So, number of sticks per box =  $N/M$

Now, if he reduces the number of sticks in each box, the equation becomes  $N/(M+3) = N/M - 25$

So,  $25 = N/M - N/(M+3)$



From the options, if  $N = 150$ , then, we get  $25 = 150 [ 1/M - 1/(M+3) ]$

$$\Rightarrow 1/6 = 1/M - 1/(M+3) \Rightarrow M = 3$$

So, the number of sticks assigned to each boy = 150

**Question 43**

A sum of money compounded annually becomes Rs.625 in two years and Rs.675 in three years. The rate of interest per annum is

- A 7%
- B 8%
- C 6%
- D 5%

**Answer: B**

**Explanation:**

As we know, formulae of compound interest for 2 years will be:

$$P(1 + \frac{r}{100})^2 = 625 \text{ (Where } r \text{ is rate, } P \text{ is principal amount)}$$

For 3 years:

$$P(1 + \frac{r}{100})^3 = 675$$

Dividing above two equations we will get  $r=8\%$



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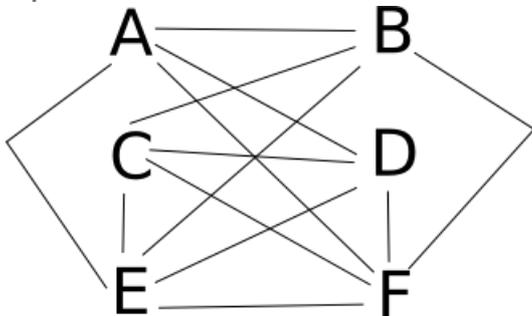
**Question 44**

In a six-node network, two nodes are connected to all the other nodes. Of the remaining four, each is connected to four nodes. What is the total number of links in the network?

- A 13
- B 15
- C 7
- D 26

**Answer: A**

**Explanation:**



Consider the following diagram: In this, the nodes E and F are connected to all the other nodes whereas the other four nodes are connected to four nodes each.

The total number of connections is 13.

**Question 45**

If  $x$  is a positive integer such that  $2x + 12$  is perfectly divisible by  $x$ , then the number of possible values of  $x$  is



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- A 2
- B 5
- C 6
- D 12

Answer: C

**Explanation:**

If  $2x+12$  is perfectly divisible by  $x$ , then 12 must be divisible by  $x$ .  
Hence, there are six possible values of  $x$  : (1,2,3,4,6,12)

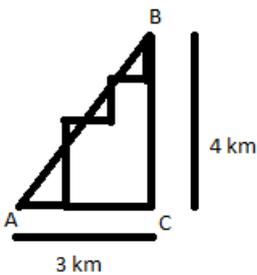
**Question 46**

A man starting at a point walks one km east, then two km north, then one km east, then one km north, then one km east and then one km north to arrive at the destination. What is the shortest distance from the starting point to the destination?

- A  $2\sqrt{2}$  km
- B 7 km
- C  $3\sqrt{2}$  km
- D 5 km

Answer: D

**Explanation:**



In the diagram, A is starting point and B is ending point.

Accordingly,  $AB = \sqrt{(3^2 + 4^2)} = 5$

**Question 47**

An outgoing batch of students wants to gift PA system worth Rs.4200 to their school. If the teachers offer to pay 50% more than the students, and an external benefactor gives three times teachers. contribution, how much should the teachers donate?

- A 600
- B 840
- C 900

D 1200

Answer: C

**Explanation:**

Let's, say students contributed  $x$  rs.

So teachers contributed =  $\frac{3x}{2}$

And external benefactor contributed =  $\frac{9x}{2}$

Summation of all contribution =  $4200 = 7x$

or  $x = 600$

Hence, teachers contributed = 900

**Question 48**

A positive integer is said to be a prime number if it is not divisible by any positive integer other than itself and 1. Let  $p$  be a prime number greater than 5. Then  $(p^2 - 1)$  is

A never divisible by 6

B always divisible by 6, and may or may not be divisible by 12.

C always divisible by 12, and may or may not be divisible by 24.

D always divisible by 24.

Answer: D

**Explanation:**

Let the Prime number be  $6n+1$ .

So  $(p^2 - 1) = 6n(6n+2) = 12n(3n+1)$

For any value of  $n$ ,  $n(3n+1)$  will have a factor of 2

Hence given equation will be always be divisible by 24

**Question 49**

To decide whether a number of  $n$  digits is divisible by 7, we can define a process by which its magnitude is reduced as follows:

$(i_1, i_2, i_3, \dots)$  are the digits of the number, starting from the most significant digit).  $i_1 i_2 \dots i_n \Rightarrow i_1 \cdot 3^{n-1} + i_2 \cdot 3^{n-2} + \dots + i_n \cdot 3^0$ .

e.g.  $259 \Rightarrow 2 \cdot 3^2 + 5 \cdot 3^1 + 9 \cdot 3^0 = 18 + 15 + 9 = 42$

Ultimately the resulting number will be seven after repeating the above process a certain number of times. After how many such stages, does the number 203 reduce to 7?

A 2

B 3

C 4

D 1

Answer: A

**Explanation:**

For 203 :

first step =  $2 \times 3^2 + 0 \times 3^1 + 3 \times 3^0 = 21$

second step =  $2 \times 3^1 + 1 \times 3^0 = 7$

So two steps needed to reduce it to 7

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Question 50

If  $8 + 12 = 2$ ,  $7 + 14 = 3$  then  $10 + 18 = ?$

- A 10
- B 4
- C 6
- D 18

Answer: A

Explanation:

$$8+12=(20=2+0)=2$$

$$7+14=(21=2+1)=3$$

$$10+18=(28=2+8)=10$$

Question 51

What is the distance between the points A(3, 8) and B(-2,-7)?

- A  $5\sqrt{2}$
- B 5
- C  $5\sqrt{10}$
- D  $10\sqrt{2}$

Answer: C

Explanation:

$$\text{Distance between two points} = \sqrt{(3 - (-2))^2 + (8 - (-7))^2} = 5\sqrt{10}$$

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Instructions

The following table gives the national income and the population of a country for the years 1984 – 85 to 1989 – 90. For each of the following questions choose the best alternative:

Year	National Income (in Rs. crore)	Population (in crore)
1984-85	229,225	74
1985-86	261,174	75
1986-87	291,556	77
1987-88	329,934	78.5
1988-89	388,539	80
1989-90	433,500	81.2

Question 52

The increase in the per capita income compared to the previous year is lowest for the year :

- A 1985-86
- B 1986-87
- C 1987-88

D 1989-90

**Answer: B**

**Explanation:**

For increment in 1986-87, denominator is increased by 2 whereas in every other year it is either increased by 1 or 1.5. Since numerator has increased by 30, which is similar to that of other years, we can say lowest increment occur in the year 1986-1987.

**Question 53**

The per capita income is highest for the year :

A 1984-85

B 1985-86

C 1987-88

D 1989-90

**Answer: D**

**Explanation:**

The per capita of each of the following years is given below.

1984-85 is Rs. 3,098

1985-86 is Rs. 3,482

1986-87 is Rs. 3,786

1987-88 is Rs. 4,203

1988-89 is Rs. 4,857

1989-90 is Rs. 5,319

Hence, the per capita income is highest for the year 1989-90

**Question 54**

The difference between the percentage increase in per capita income and the percentage increase in the population compared to the previous year is highest for the year:

A 1985-86

B 1986-87

C 1987-88

D 1988-89

**Answer: D**

**Explanation:**

The per capita of each of the following years is given below.

1984-85 is Rs. 3,098

1985-86 is Rs. 3,482 (increased by 12.42%)

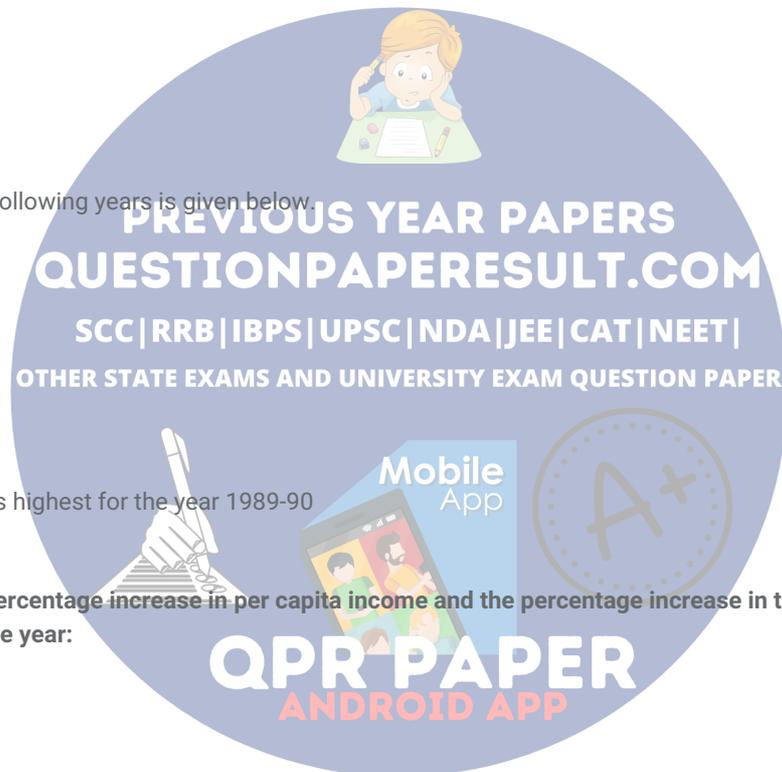
1986-87 is Rs. 3,786 (increased by 8.73%)

1987-88 is Rs. 4,203 (increased by 11.00%)

1988-89 is Rs. 4,857 (increased by 15.55%)

1989-90 is Rs. 5,339 (increased by 9.92%)

The percentage increase in population over the years is fairly constant and varied between 1% and 2%. But the percentage increase in GDP per capita in the year 1988-89 is significantly higher. Hence, the correct answer is 1988-89



**Question 55**

The rate of increase in population was lowest in the year:

- A 1985-86
- B 1987-88
- C 1989-90
- D None of these

**Answer:** A

**Explanation:**

The population increase for the year 1985-86 from the year 1984-85 is just one crore.

In every other year, the population increase was either 1.5 crore or 2 crores.

Note that the denominators for each of the years (ie total population) is fairly same.

Hence, the correct answer is 1985-86

**Question 56**

Increase in the per capita income compared to the previous year among the years given below was highest for the year:

- A 1985-86
- B 1986-87
- C 1987-88
- D 1988-89

**Answer:** D

**Explanation:**

The per capita of each of the following years is given below.

1984-85 is Rs. 3,098

1985-86 is Rs. 3,482 (increased by Rs. 384)

1986-87 is Rs. 3,786 (increased by Rs. 304)

1987-88 is Rs. 4,203 (increased by Rs. 416)

1988-89 is Rs. 4,857 (increased by Rs. 653)

1989-90 is Rs. 5,339 (increased by Rs. 481)

Hence, the increase is highest for the year 1988-89

**Instructions**

Read the following information and answer the questions that follows: Ghosh Babu deposited a certain sum of money in a bank in 1986. The bank calculated interest on the principal at 10 percent simple interest, and credited it to the account once a year. After the 1st year, Ghosh Babu withdrew the entire interest and 20% of the initial amount. After the 2nd year, he withdrew the interest and 50% of the remaining amount. After the 3rd year, he withdrew the interest and 50% of the remaining amount. Finally after the 4th year, Ghosh Babu closed the account and collected the entire balance of Rs. 11,000.

**Question 57**

The initial amount in rupees, deposited by Ghosh Babu was:

- A 25,000

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- B 75,000
- C 50,000
- D None of these

**Answer: C**

**Explanation:**

Let's say the principal amount is P, Rate is R.

$$\text{1st withdrawal} = PR + \frac{P}{5}$$

$$\text{Remaining money} = \frac{4P}{5}$$

$$\text{2nd withdrawal} = \left( \frac{4PR}{5} + \frac{2P}{5} \right)$$

$$\text{Remaining money} = \frac{2P}{5}$$

$$\text{3rd withdrawal} = \frac{2PR}{5} + \frac{P}{5}$$

$$\text{Remaining money} = \frac{P}{5}$$

$$\text{4th withdrawal} = \frac{P}{5} + \frac{PR}{5} = 11000$$

Or P = 50000 (Putting R = 10%)

**Question 58**

The year, at the end of which, Ghosh Babu withdrew the smallest amount was:

- A First
- B Second
- C Third
- D Fourth

**Answer: D**

**Explanation:**

Let's say the principal amount is P, Rate is R (i.e. R = 10%)

$$\text{1st withdrawal} = PR + \frac{P}{5} = \frac{15P}{50}$$

$$\text{2nd withdrawal} = \frac{4PR}{5} + \frac{2P}{5} = \frac{24P}{50}$$

$$\text{3rd withdrawal} = \frac{2PR}{5} + \frac{P}{5} = \frac{12P}{50}$$

$$\text{4th withdrawal} = \frac{PR}{5} + \frac{P}{5} = \frac{11P}{50}$$

Lowest withdrawal was after the fourth year.

**Question 59**

The year, at the end of which, Ghosh Babu collected the maximum interest was:

- A First
- B Second

C Third

D Fourth

Answer: A

Explanation:

Let's say the principal amount is P, Rate is R (i.e. R = 10%)

$$1\text{st withdrawal} = PR + \frac{P}{5} = \frac{15P}{50}$$

$$2\text{nd withdrawal} = \frac{4PR}{5} + \frac{2P}{5} = \frac{24P}{50}$$

$$3\text{rd withdrawal} = \frac{2PR}{5} + \frac{P}{5} = \frac{12P}{50}$$

$$4\text{th withdrawal} = \frac{PR}{5} + \frac{P}{5} = \frac{11P}{50}$$

Maximum Interest was after the first year (i.e. PR)

Question 60

The year, at the end of which, Ghosh Babu withdrew the maximum amount was:

A First

B Second

C Third

D Fourth

Answer: B

Explanation:

Let's say the principal amount is P, Rate is R (i.e. R = 10%)

$$1\text{st withdrawal} = PR + \frac{P}{5} = \frac{15P}{50}$$

$$2\text{nd withdrawal} = \frac{4PR}{5} + \frac{2P}{5} = \frac{24P}{50}$$

$$3\text{rd withdrawal} = \frac{2PR}{5} + \frac{P}{5} = \frac{12P}{50}$$

$$4\text{th withdrawal} = \frac{PR}{5} + \frac{P}{5} = \frac{11P}{50}$$

Hence, Maximum withdrawal was after second year.

Question 61

The total interest, in rupees, collected by Ghosh Babu was:

A 12,000

B 20,000

C 4,000

D 11,000

Answer: A

Explanation:

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Let's say the principal amount is P, Rate is R (i.e. R = 10%)

$$\text{1st Interest} = PR$$

$$\text{2nd Interest} = \frac{4PR}{5}$$

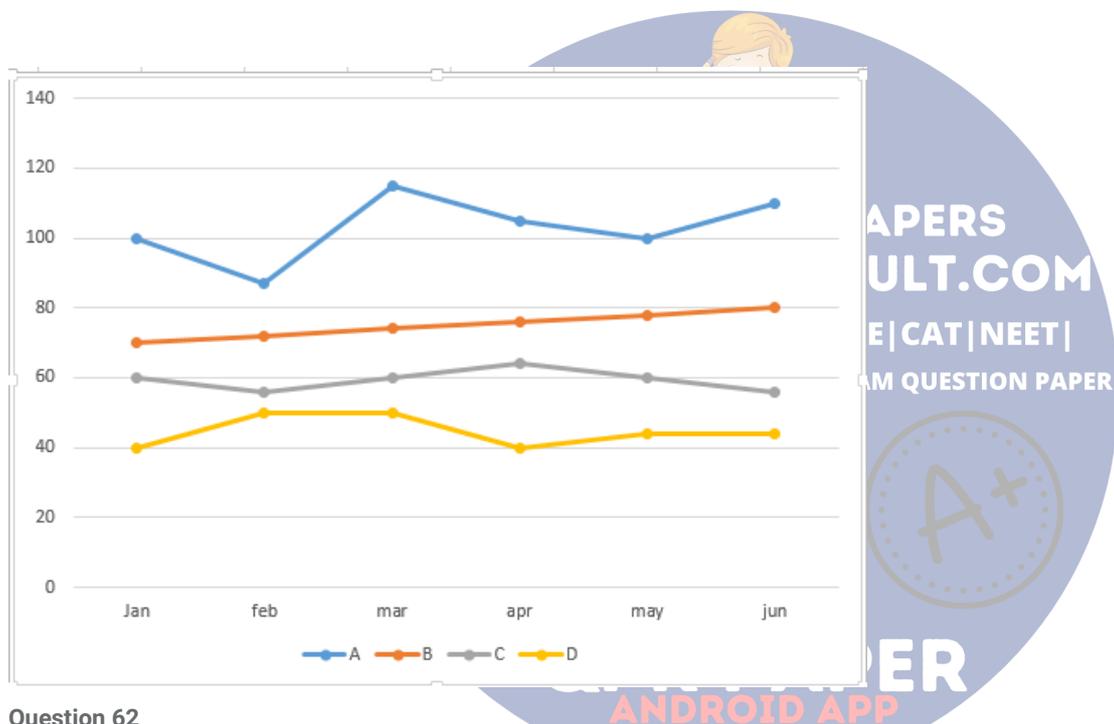
$$\text{3rd Interest} = \frac{2PR}{5}$$

$$\text{4th Interest} = \frac{PR}{5}$$

$$\text{Total interest} = \frac{12PR}{5} = 12000$$

### Instructions

The graph below shows the end of the month market values of 4 shares for the period from January to June. Answer the following questions based on this graph.



### Question 62

Which share showed the greatest percentage increase in market value in any month during the entire period?

- A A
- B B
- C C
- D D

Answer: A

### Explanation:

For having the greatest percentage change, the slope of the line should be the highest. From the graph, we can see that slope is highest for A between Feb and March. So A is the correct answer.

### Question 63

In which month was the greatest absolute change in market value for any share recorded?

- A March
- B April
- C May
- D June

**Answer: A**

**Explanation:**

To answer this question, let us calculate the highest increase in market value of each share.

For share A, the highest increase in market value is from Feb to March and equals  $110 - 90 = 20$

For share B, the market value increases constantly over all the months and is equal to  $75 - 70 = 5$

For share C, the highest increase in market value is from Feb to March and equals  $60 - 55 = 5$

For share D, the highest increase in market value is from Jan to Feb and equals  $50 - 40 = 10$

Hence, the correct answer is March and the required share is share A

**Question 64**

**In which month was the greatest percentage increase in market value for any share recorded?**

- A February
- B March
- C April
- D January

**Answer: A**

**Explanation:**

To answer this question, let us calculate the highest percentage increase in market value of each share.

For share A, the highest percentage increase in market value is from Feb to March and equals  $110/90 - 1 = 22.22\%$

For share B, the highest percentage increase in market value is from Jan to Feb and equals  $75/70 - 1 = 7.14\%$

For share C, the highest percentage increase in market value is from Feb to March and equals  $60/55 - 1 = 9.09\%$

For share D, the highest percentage increase in market value is from Jan to Feb and equals  $50/40 - 1 = 25\%$

Hence, the required answer is February and the required share is share D

**Question 65**

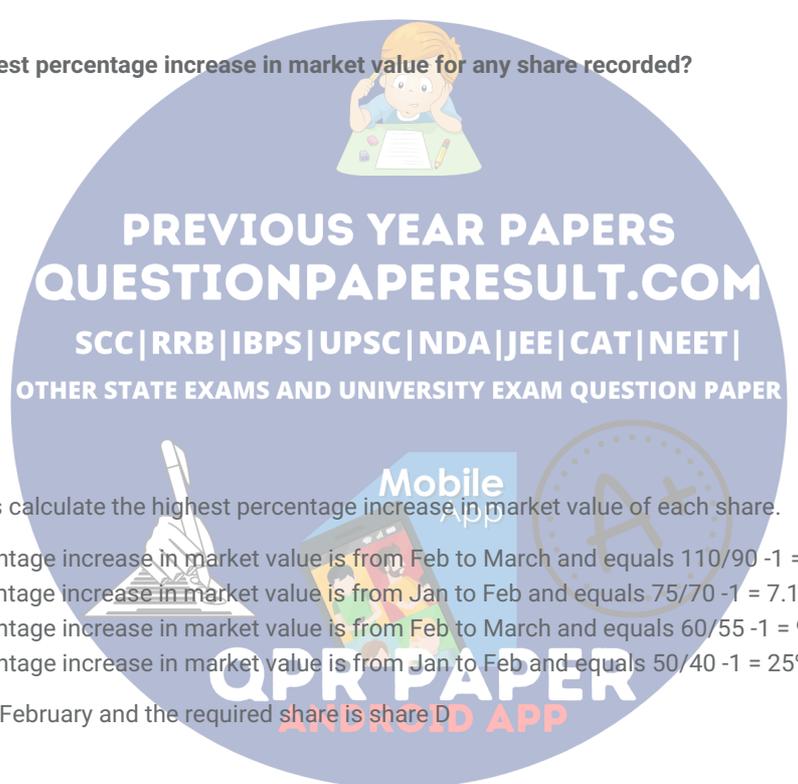
**Ram gives Shyam a share of C and a share of D and takes a share of A in return. At which month-end would the Ram's loss from this transaction, be the most?**

- A June
- B March
- C April
- D February

**Answer: D**

**Explanation:**

Loss from the transaction from Ram's standpoint is Sum of share prices of C and D - Share price of A.



So, loss from the transaction at the end of January is  $(40+60) - 100 = 0$   
So, loss from the transaction at the end of February is  $(50+55) - 90 = 15$   
So, loss from the transaction at the end of March is  $(60+50) - 110 = 0$   
So, loss from the transaction at the end of April is  $(65+40) - 105 = 0$   
So, loss from the transaction at the end of May is  $(60+45) - 100 = 5$   
So, loss from the transaction at the end of June is  $(55+45) - 110 = 0$

So, the correct answer is February.

#### Question 66

Ram gives Shyam a share of C and a share of D and takes a share of A in return. What is the maximum loss suffered by Ram from this transaction?

- A 15
- B 10
- C 5
- D 0

Answer: A

#### Explanation:

Loss from the transaction from Ram's standpoint is Sum of share prices of C and D - Share price of A.

So, loss from the transaction at the end of January is  $(40+60) - 100 = 0$   
So, loss from the transaction at the end of February is  $(50+55) - 90 = 15$   
So, loss from the transaction at the end of March is  $(60+50) - 110 = 0$   
So, loss from the transaction at the end of April is  $(65+40) - 105 = 0$   
So, loss from the transaction at the end of May is  $(60+45) - 100 = 5$   
So, loss from the transaction at the end of June is  $(55+45) - 110 = 0$

So, the correct answer is 15

#### Instructions

Use the following information: Prakash has to decide whether or not to test a batch of 1000 widgets before sending them to the buyer. In case he decides to test, he has two options:

- a) Use test I ;
- b) Use test II.

Test I cost Rs. 2 per widget. However, the test is not perfect. It sends 20% of the bad ones to the buyer as good. Test II costs Rs. 3 per widget. It brings out all the bad ones. A defective widget identified before sending can be corrected at a cost of Rs. 25 per widget. All defective widgets are identified at the buyer's end and penalty of Rs. 50 per defective widget has to be paid by Prakash.

#### Question 67

Prakash should not test if the number of bad widgets in the lot is:

- A less than 100
- B more than 200
- C between 120 & 190
- D Cannot be found out.

Answer: A

#### Explanation:

We should consider three possible cases as 1. when he is using test 1

2. When he is using test 2

3. When he is using no test

Now we will choose a method where the total expenditure will be least.

So for option A, let's consider that number of defective pieces are 50.

Hence, while using test 1:

$$\text{Cost of testing} = 1000 \times 2 = 2000$$

$$\text{Correcting 80\% of pieces} = 40 \times 25 = 1000$$

$$\text{Penalty for 20\% of pieces} = 10 \times 50 = 500$$

$$\text{Total} = 3500$$

For test 2:

$$\text{Cost of testing} = 1000 \times 3 = 3000$$

$$\text{Correcting all 50 pieces} = 50 \times 25 = 1250$$

$$\text{Total} = 4250$$

For no test:

$$\text{Penalty for all 50 pieces} = 50 \times 50 = 2500$$

Hence cost is least when he is using no test while number of defective pieces is less than 100.

### Question 68

If there are 120 defective widgets in the lot, Prakash:

A should either use Test I or not test.

B should either use Test II or not test.

C should use Test I or Test II.

D should use Test I only.

**Answer: D**

#### Explanation:

When there are 120 widgets defective:

Using 1st test:

$$\text{Cost of testing} = 1000 \times 2 = 2000$$

$$\text{Cost of correcting 80\% pieces} = 96 \times 25 = 2400$$

$$\text{Cost of penalty on 20\% pieces} = 24 \times 50 = 1200$$

$$\text{Total cost} = 5600$$

Using 2nd test:

$$\text{Cost of testing} = 1000 \times 3 = 3000$$

$$\text{Cost of correcting all 120 pieces} = 120 \times 25 = 3000$$

$$\text{Total cost} = 6000$$

Using no test:

$$\text{Total cost} = 120 \times 50 = 6000$$

Hence, he should use 1st test only.

### Question 69

If the number of defective widgets in the lot is between 200 and 400, Prakash:

A may use Test I or Test II

B should use Test I only.



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C should use Test II only

D cannot decide.

**Answer: C**

**Explanation:**

Let's say defective pieces are 300

Using test 1

Cost of testing =  $1000 \times 2 = 2000$

Cost of correcting 80% pieces =  $240 \times 25 = 6000$

Cost of penalty on 20% pieces =  $60 \times 50 = 3000$

Total cost = 11000

Using test 2

Cost of testing =  $1000 \times 3 = 3000$

Cost of correcting all 300 pieces =  $300 \times 25 = 7500$

Total cost = 10500

Using no test:

Cost of penalty on all pieces =  $300 \times 50 = 15000$

Hence, he should use 2nd test.

**Question 70**

If Prakash is told that the lot has 160 defective widgets, he should:

A use Test I only

B use Test II only.

C do no testing.

D either use Test I or do not test.

**Answer: A**

**Explanation:**

For 160 defective pieces:

Using 1st test:

Cost of testing =  $1000 \times 2 = 2000$

Cost correcting 80% pieces =  $128 \times 25 = 3200$

Cost of penalty on 20% pieces =  $32 \times 50 = 1600$

Total = 6800

Using 2nd test:

Cost of testing =  $1000 \times 3 = 3000$

Cost of correcting all pieces =  $160 \times 25 = 4000$

Total = 7000

Using no test:

Cost of penalty on all pieces =  $160 \times 50 = 8000$

Hence, he should use first test only.

**Question 71**

If there are 200 defective widgets in the lot, Prakash:

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- A may use either Test I or Test II
- B should use Test I or not use any test
- C should use Test II or not use any test.
- D cannot decide.

**Answer: A**

**Explanation:**

When there are 200 defective pieces:

Using test 1

Cost of testing= 2000

Cost of correcting 80% pieces = 4000

Cost of penalty on 20% pieces = 2000

Total = 8000

Using test 2

Cost of testing = 3000

Cost of correcting all pieces = 5000

Total = 8000

Using no test

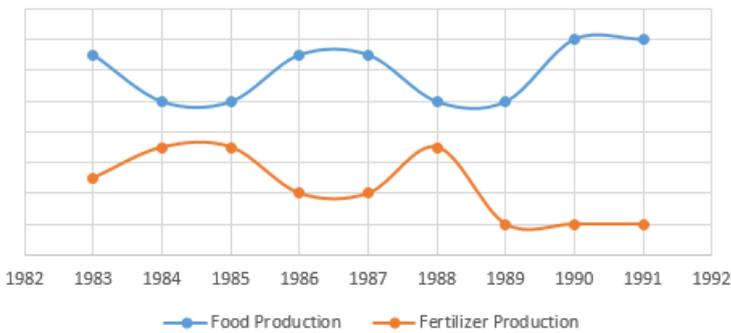
Cost of penalty on all pieces= 10000

Hence he can use either 1st test or second test.

**Instructions**

Study the following graph and answer questions that follow. The x-axis denotes the years from 1983 to 1991

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**Question 72**

The sum of food and fertilizer production has shown a constant value for how many years?

- A None of the years
- B 2
- C 4
- D 5

**Answer: D**

**Explanation:**

In order to find the number of years for which the sum is same, we need to determine the change in production of food and fertilizer. If there is no effective change, then the sum of their productions is same.

Change in 1984 => +1 - 1.5 = -0.5

Change in 1985 => 0

Change in 1986 => -1.5 + 1.5 = 0

Change in 1987 => 0

Change in 1988 => +1.5 - 1.5 = 0

Change in 1989 => -2.5 + 0 = -2.5

Change in 1990 => 0 + 1.5 = 1.5

Change in 1991 => 0

The change is 0 in 5 years. Hence, the answer is option D.

### Question 73

If in 1988, the sum of the food and fertilizer production was 170 million tonnes, the value of food production must have been (approximately, in million tonnes) .

- A 90
- B 70
- C 100
- D Insufficient data

Answer: C

### Explanation:

From the graph, in the year 1988, the ratio of food production to fertilizer production is 5:3.5 i.e 10:7

Let the food production be 10X and the fertilizer production be 7X

Hence, the total is  $10X+7X = 17X$  which equals 170

So,  $X = 10$  and the total food production equals  $10*10 = 100$

### Question 74

From its apparent behaviour, the food production in year 1992 can be expected to .

- A go up
- B go down
- C remain the same as previous year.
- D nothing can be said.

Answer: D

### Explanation:

Just by looking at the graphs of the previous year's it is difficult to guess how the food production in the year 1992 will be. This is especially true as we don't have any information about the fertilizer production in the year 1992.

Hence, the correct answer is option (d)

### Question 75

Going according to previous trends, one can say that the Fertilizer Production has shown an anomalous behavior in which year?

- A 1985

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- B 1984
- C 1991
- D 1989

**Answer: D**

**Explanation:**

The fertilizer and food production has been inversely proportional over the years. ie when food production increased, fertilizer production fell and vice versa. But as we can see in 1988-89, when food production remained constant, the fertilizer production fell steeply and in 89-90 when food production increased steeply, the fertilizer production stayed constant. So, 1989 is the year of the anomaly.

**Question 76**

A scholar observed that if the production of fertilizers in 1989 had been the same as that in 1988, then the total fertilizer production for all the given years would have been 450 million tonnes. Using this information, and knowing that the food production has been plotted on the same scale, one may say that the food production in 1983 was (approximately, in million tonnes) .

- A 80
- B 130
- C 105
- D Cannot be determined

**Answer: B**

**Explanation:**

Let each unit in the scale be equal to X

So, fertilizer production in 1983 is 2.5X

So, fertilizer production in 1984 is 3.5X

So, fertilizer production in 1985 is 3.5X

So, fertilizer production in 1986 is 2X

So, fertilizer production in 1987 is 2X

So, fertilizer production in 1988 is 3.5X

Assuming fertilizer production in 1989 is same as that of 1988 it equals 3.5X

So, fertilizer production in 1990 is X

So, fertilizer production in 1991 is X

Hence, the total is 22.5X

But this equals 450 million tonnes. Hence, X = 20 million tonnes

Therefore, food production in 1983 = 6.5X equals 130 million tonnes

## Verbal

**Instructions**

For the following questions answer them individually

**Question 77**

**Choose the statement that expresses the idea most correctly.**

- A The best part of the programme is the dances.
- B The best part of the programme are the dances.
- C The best part of the programme are the dance.

D The best parts of the programme is the dances.

**Answer: A**

**Explanation:**

The verb is/are refers to the noun "best part". As the phrase "best part" is singular, 'is' must be used here. Hence, option A is correct.

**Question 78**

**Choose the statement that expresses the idea most correctly.**

- A The professor, as well as the students, was pleased with their results.
- B The professor, as well as the students, were pleased with their results.
- C The professor as well as the students was pleased with their results.
- D The professor as well as the students were pleased with their results.

**Answer: A**

**Explanation:**

The usage of the phrase "as well as" is preceded by a comma.

In a sentence where "as well as" is used, the verb must agree with the noun before the "as well as" phrase. Here, the verb was/were refers to the noun 'professor'. As professor is singular, the correct verb to be used here is 'was'.

Hence, option A is correct.

**Question 79**

**Choose the statement that expresses the idea most correctly.**

- A He was unwilling to testify, he was afraid of the defendant.
- B Because he was afraid of the defendant, he was unwilling to testify.
- C He was unwilling to testify: he was afraid of the defendant.
- D Because he was afraid of the defendant he was unwilling to testify.

**Answer: B**

**Explanation:**

Option A is wrong because two independent clauses are not joined by a conjunction.

In option C, the sentence after colon is an independent clause. But, the sentence after colon must be a dependent clause. So, option C is incorrect.

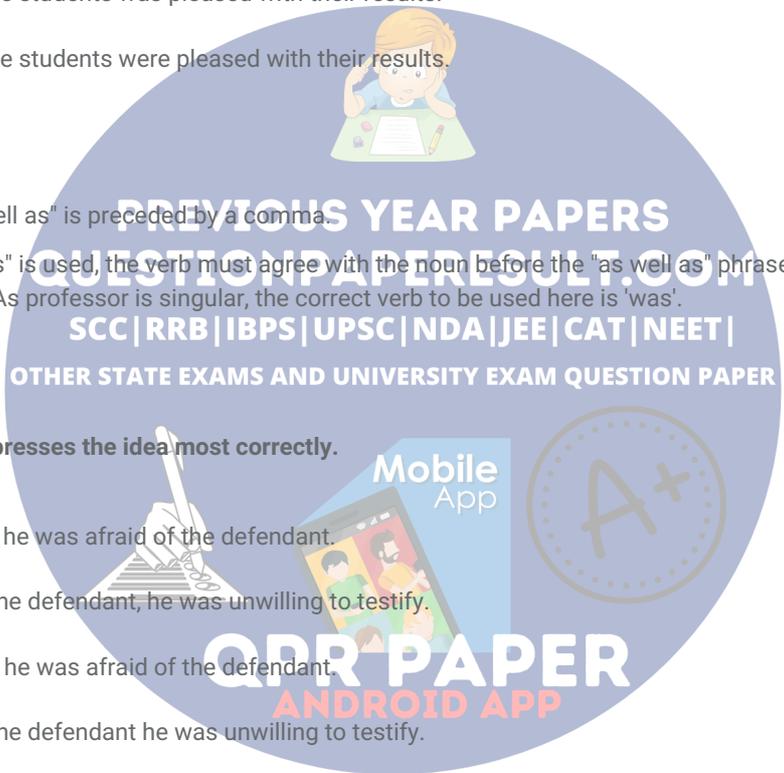
The sentence in option D must have a comma after the completion of the dependent clause. Hence it is incorrect.

Option B is the correct answer.

**Question 80**

**Choose the statement that expresses the idea most correctly.**

- A When you have good health, one should feel fortunate.
- B When you have good health, you should feel fortunate.
- C When one have good health, you should feel fortunate.



D When one has good health, he should feel fortunate.

**Answer: B**

**Explanation:**

If "one" is used to refer a person in the dependent clause, the same word must also be used in the independent clause. Options A, C and D violate this rule.

Option B is the correct answer.

**Question 81**

**Choose the statement that expresses the idea most correctly.**

A Either you or he have to be here.

B Either you or he has to be here.

C Neither you nor he have to be here.

D Neither you nor they has to be here.

**Answer: B**

**Explanation:**

"Either ... or" and "Neither ... nor" are followed by the verb that agrees with the noun nearest to it.

In sentences A, C and D, the verbs do not agree with the noun nearest to it. Hence, option B is the correct answer.

**Question 82**

**Choose the statement that expresses the idea most correctly.**

A Children begin by loving their parents; as they grow older they judge them; sometimes they forgive them.

B Children begin by loving their parents, as they grow older they judge them, sometimes they forgive them.

C Children begin by loving their parents; as they grow older they judge them, sometimes they forgive them.

D Children begin by loving their parents, as they grow older they judge them; sometimes they forgive them.

**Answer: A**

**Explanation:**

There are three independent clauses in the sentence. Independent clauses can be joined by a conjunction or by using a semicolon.

Only option A satisfies this rule.

**Question 83**

**Choose the statement that expresses the idea most correctly.**

A Gopal and Ramesh have not finished his work.

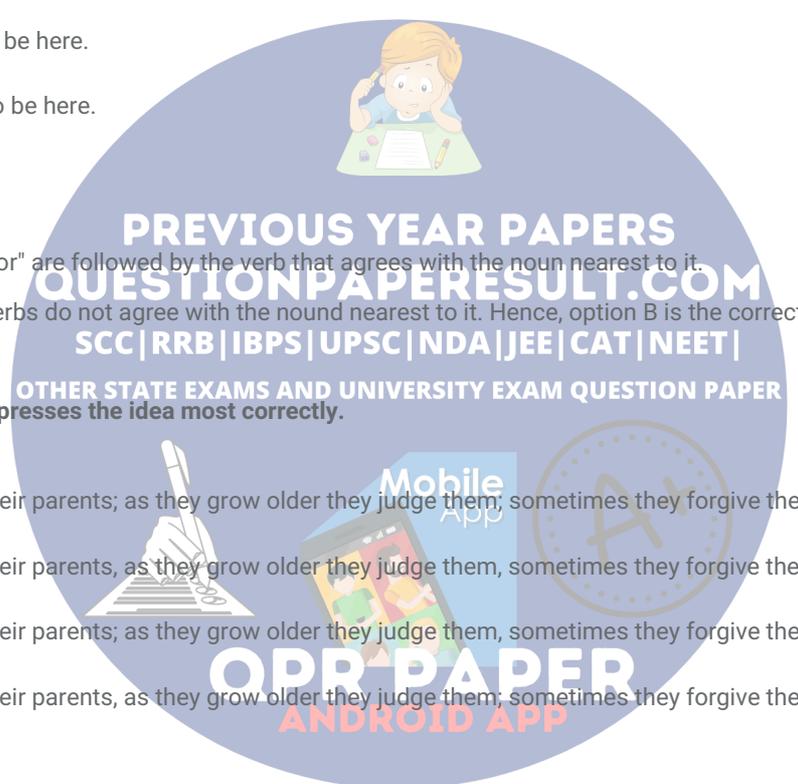
B Gopal and Ramesh has not finished his work.

C Neither Gopal nor Ramesh have finished their work.

D Neither Gopal nor Ramesh has finished his work.

**Answer: D**

**Explanation:**



In the first two sentences, "their" must replace "his" as there are 2 persons.

"Either ... or" and "Neither .... nor" are followed by the verb that agrees with the noun nearest to it. "Ramesh" is the nearest noun to the verb and therefore, the correct verb is "has". Option D is the correct answer.

**Question 84**

**Choose the statement that expresses the idea most correctly.**

- A The fact that Raghu was a good student he had many offers for good jobs.
- B The fact that Raghu was a good student resulted in his having many offers for good jobs.
- C The fact Raghu was a good student resulted in him having offers for good jobs.
- D The fact that Raghu was a good student resulted in him having many offers for good jobs.

**Answer: B**

**Explanation:**

Option A contains two independent clauses without a semicolon or a conjunction.

"The fact that ..." is the correct usage. Hence, option C is wrong.

"Resulted in his having ...." is the correct usage. Option B is the correct answer.

**Question 85**

**Choose the statement that expresses the idea most correctly.**

- A The people of this company, have always been aware, of the needs for products of better quality and lower price.
- B The people of this company, have always been aware of the need for products of better quality and lower price.
- C The people of this company have always been aware of the need for products of better quality and lower price.
- D The people of this company, have always been aware of the need for products of better quality, and lower price.

**Answer: C**

**Explanation:**

A comma is not required after the phrase "The people of this company". Only option C satisfies this.

**Question 86**

**Choose the statement that expresses the idea most correctly.**

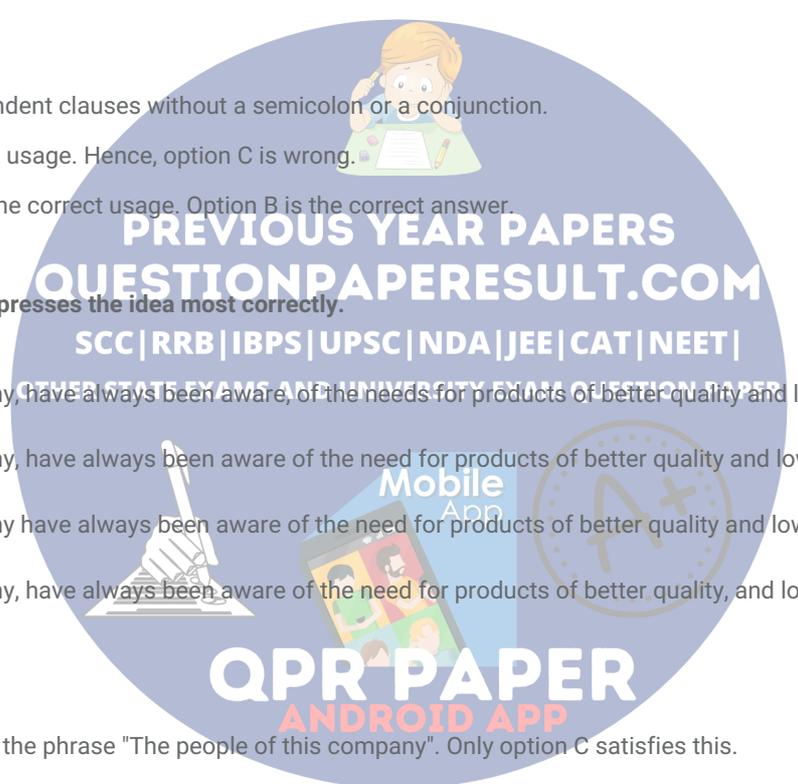
- A The Dean finally agreed to see me. To talk about my financial problems.
- B The Dean finally agreed to see me, to talk about my financial problems.
- C The Dean, finally agreed to see me to talk about my financial problems.
- D The Dean finally agreed to see me to talk about my financial problems.

**Answer: D**

**Explanation:**

This sentence has only one clause. Therefore, a comma is not required.

Option D is the correct answer.



**Question 87**

**Choose the statement that expresses the idea most correctly.**

- A We invited only the people who he said were his friends.
- B We invited only the people whom he said were his friends.
- C We invited only the people whom he said was his friends.
- D We invited only the person whom he said were his friends.

**Answer: A**

**Explanation:**

The word who/whom refers to the "people". In this context, "who" is the correct usage.

It is essential to understand the use of pronouns here. 'Who' and 'Whom' are relative pronouns. However, they are associated differently with personal and possessive pronouns. Whenever the subject is represented via personal pronouns (like he/she/it etc.), 'who' is utilized in the sentence. If the main subject can be replaced by a possessive pronoun (like him/her/his/their etc. ), we use 'whom' in the sentence. You can ask simple questions to understand this concept. For example:

You can ask: "Who took my pencil?"

You say: "He/She took it" (personal pronouns)

You do not say: "Him/Her took it" (possessive pronouns)

You can ask: "Whom did you meet yesterday?"

You say: "I met him/her yesterday" (possessive pronouns)

You do not say: "I met he/she yesterday" (personal pronouns)

Hence, sentences wherein 'whom' is followed by/used alongside 'he' is incorrect. Luckily, all the options, except Option A, have this usage and can be easily discarded.

**Question 88**

**Choose the option which contains a mistake.**

- A A feasibility survey has now
- B been completed in India to establish
- C a network of felicitate contacts
- D between small and medium enterprises.

**Answer: C**

**Explanation:**

The word "felicitate" in the third sentence is used as a verb. But, the word that describes a noun "contacts", must be an adjective.

The word used must be "felicitated".

**Question 89**

**Choose the option which contains a mistake.**

- A Privatization generally represents
- B an ideological response

C to the perceived problem

D in the public sector.

**Answer: C**

**Explanation:**

"To the perceived problems" is the correct phrase to be used in the sentence since there are multiple problems. Option c) is the correct answer.

**Question 90**

**Choose the option which contains a mistake.**

A The Indian government's choice

B of the EEC as a partner

C stem from the fact

D that the community is the most important market for India.

**Answer: C**

**Explanation:**

"The Indian Government's choice" is a singular noun and should have the singular verb "stems".

Hence, the sentence in option C is wrong.

**Question 91**

**Choose the option which contains a mistake.**

A A person who earns a

B few thousand rupees

C and decides to save

D many of it must be a miser.

**Answer: D**

**Explanation:**

The quantifier "many" cannot modify a number. The correct quantifier to be used is "most".

**Question 92**

**Choose the option which contains a mistake.**

A Had you been in my

B position, you were definitely

C shown your displeasure

D at the turn of events.

**Answer: B**

**Explanation:**

This is an unreal past condition. So, the verb used must be in the form of past participle.

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The correct phrase to be used is "you would have definitely".

**Question 93**

Choose the option which contains a mistake.

- A I definitely disagree
- B with the position that
- C requires that money
- D is a key motivator.

**Answer: C**

**Explanation:**

The usage of the word "requires" is wrong here. It must be replaced by "assumes".

**Question 94**

Choose the option which contains a mistake.

- A This has slowed the progress
- B of reforms in many countries
- C because the choice of either of the extreme
- D positions inevitably invite criticism.

**Answer: D**

**Explanation:**

The verb "invite" does not agree with the singular noun "choice". Hence, the correct usage of the verb is "invites".

**Question 95**

Choose the option which contains a mistake.

- A Gavaskar was a great batsman who
- B having played more than 100
- C test matches, he then decided
- D to call it a day.

**Answer: C**

**Explanation:**

The words "he then" are not required here. The correct sentence is "Gavaskar was a great batsman who having played more than 100 test matches, decided to call it a day".

**Question 96**

Choose the option which contains a mistake.

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- A When we sold of all our
- B furniture, crockery and
- C other household goods.
- D the room looked bare.

**Answer: A**

**Explanation:**

"Sold of" must be replaced by "sold off". The remaining sentences are correct.

Option a) is the correct answer.

**Question 97**

**Choose the option which contains a mistake.**

- A In the history of mankind
- B it has always been
- C minority which have been
- D able to change the world.

**Answer: C**

**Explanation:**

'Minority' should take the verb 'has been'. On the other hand, the word 'minorities' take the verb 'have been'. Option c) is the correct answer.

**Question 98**

**Choose the option which contains a mistake.**

- A Management education is
- B becoming highly sought after
- C by aspiring ambitious students
- D because of high demand in the job market.

**Answer: C**

**Explanation:**

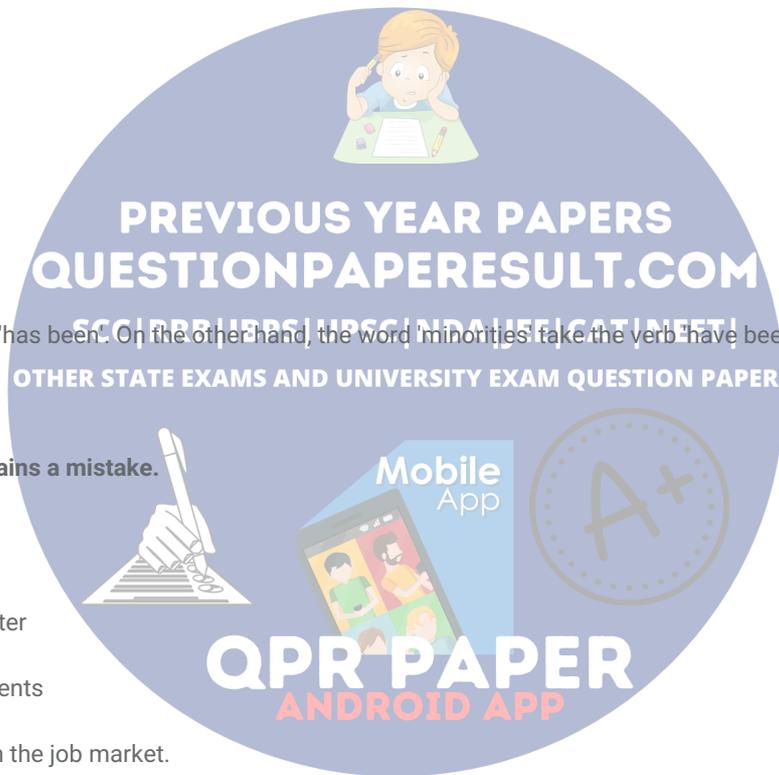
The use of the word "ambitious" is redundant since the word 'aspiring' has already been used. Only one of the two words has to be used in the third sentence. Option c) is the correct answer.

**Question 99**

**Select the correct sequence of the four sentences given below.**

- A. And that the pursuit of money by whatever design within the law is always benign.
- B. And it holds broadly that the greater the amount of money, the greater the intelligence.
- C. This is the institutional truth of Wall Street, this you will be required to believe.
- D. The institutional truth of the financial world holds that association with money implies intelligence.

A ACBD



- B CDBA
- C DBAC
- D DCAB

**Answer: C**

**Explanation:**

D introduces the paragraph. B elaborates on the idea mentioned in D. So, B follows D. This is then followed by A, which continues the idea of D-B. C is the concluding sentence. The correct order of sentences is DBAC. Option c) is the correct answer.

**Question 100**

Select the correct sequence of the four sentences given below.

- A. Then think of by how much our advertising could increase the sales level.
- B. Advertising effectiveness can be best grasped intuitively on a per capita basis.
- C. Overall effectiveness is easily calculated by considering the number of buyers and the cost of advertising.
- D. Think of how much of our brand the average individual is buying now.

- A DCAB
- B DACB
- C BCDA
- D ABCD

**Answer: C**

**Explanation:**

B is the best opening sentence - it introduces the topic of the paragraph, advertising. This is followed by C which talks about the overall effectiveness and then by D which talks about individual effectiveness. The last sentence is A. Option c) is the correct answer.

**Question 101**

Select the correct sequence of the four sentences given below.

- A. The age of pragmatism is here, whether we like it or not.
- B. The staple rhetoric that was for so long dished out also belongs to the bipolar world of yesterday.
- C. The old equations, based on the cold war and on non-alignment no longer holds good.
- D. But contrary to much of what is being said and written, it is a multipolar rather than unipolar world that appears to be emerging out of recent events.

- A ABCD
- B ACBD
- C ADBC
- D ADCB

**Answer: C**

**Explanation:**

A is the best opening sentence. It introduces the topic of the paragraph - the age of pragmatism. This is followed by D, which talks about an observation that is against expectations. This is further explained in B. So, B follows D. The concluding sentence is C. So, the order of sentences is ADBC. Option c) is the correct answer.

**Question 102**

Select the correct sequence of the four sentences given below.

- A. Past research has uncovered the fact that cognitive age is inversely related to life satisfaction among the elderly.
- B. A person may feel young or old irrespective of chronological age.
- C. That is, the younger an elderly person feels, the more likely she or he is to be satisfied with life in general.
- D. Cognitive age is a psychological construct that refers to one's subjective assessment of one's age.

- A BDAC
- B DBAC
- C DCAB
- D ABCD

**Answer: B**

**Explanation:**

The opening sentence is D. It introduces the topic of the paragraph - cognitive age. This is followed by B which continues the idea of cognitive age. Next is A, which talks about a past research finding. A is then followed by C, which explains the result in sentence A. The correct order of sentences is DBAC. Option b) is the correct answer.

**Question 103**

Select the correct sequence of the four sentences given below.

- A. It was a fascinating tempting green, like the hue of the great green grasshopper.
- B. Her teeth were very white and her voice had a cruel and at the same time a coaxing sound.
- C. While she was uncorking the bottle I noticed how green her eyeballs were.
- D. I saw, too, how small her hands were, which showed that she did not use them much.

- A ACBD
- B BACD
- C CADB
- D BADC

**Answer: C**

**Explanation:**

The opening sentence of the paragraph is C - it introduces the person being talked about in the paragraph. This is followed by sentence A. It continues talking about the 'eyeballs' mentioned in C. From the options, we see that the only possibility is option c).

**Question 104**

Select the correct sequence of the four sentences given below.

- A. By intelligence we mean a style of life, a way of behaving in various situations, and particularly in new, strange and perplexing situations.
- B. When we talk about intelligence, we do not mean the ability to get a good score on a certain kind of test, or even the ability to do well at school.
- C. The true test of intelligence is not how to do, but how we behave when we don't know what to do.
- D. These are at best only indicators of something large, deeper and far more important.

- A BDAC
- B CDBA
- C ABCD
- D CABD

**Answer: A**



**Explanation:**

The best opening sentence is B. It introduces the topic of the paragraph - intelligence. This is followed by D. The word 'these' in sentence D refers to the tests in sentence B. Next is sentence A, which talks about what intelligence actually means. The concluding sentence is C. The correct order of sentences is BDAC.

**Question 105**

Select the correct sequence of the four sentences given below.

A. In formal speech, syllables are likely to be more deliberately sounded than in informal speech.

B. Yet dictionary editors have no choice but to deal with each word as an individual entity.

C. The pronunciation of words is influenced by the situation.

D. Further, the pronunciation of a word is affected by its position in the sentence and by the meaning it carries.

A ACBD

B ACDB

C ABCD

D CADB

**Answer: D**

**Explanation:**

C is the opening sentence of the paragraph. It introduces the topic of the paragraph - punctuation. This is followed by sentence A. It continues the idea mentioned in C and talks about how the punctuation is affected in formal speech. This is followed by D which talks about a different situation in which punctuation is affected. The concluding sentence is B. So, the correct order of sentences is CADB.

**Instructions**

Q30 to 35 : Each of these questions contains a sentence followed by four choices. Select from among these choices the one which most logically completes the idea contained in the given sentence.

**Question 106**

Particularly today, when so many difficult and complex problems face the human species, the development of broad

A and powerful shoulders is necessary.

B plans of action are not possible.

C moral values are required.

D and powerful thinking is desperately needed.

**Answer: D**

**Explanation:**

To solve such difficult and complex problems, broad and powerful thinking is needed.

Moral values cannot guarantee solution to complex problems.

Broad shoulders cannot tackle problem pertaining to human species.

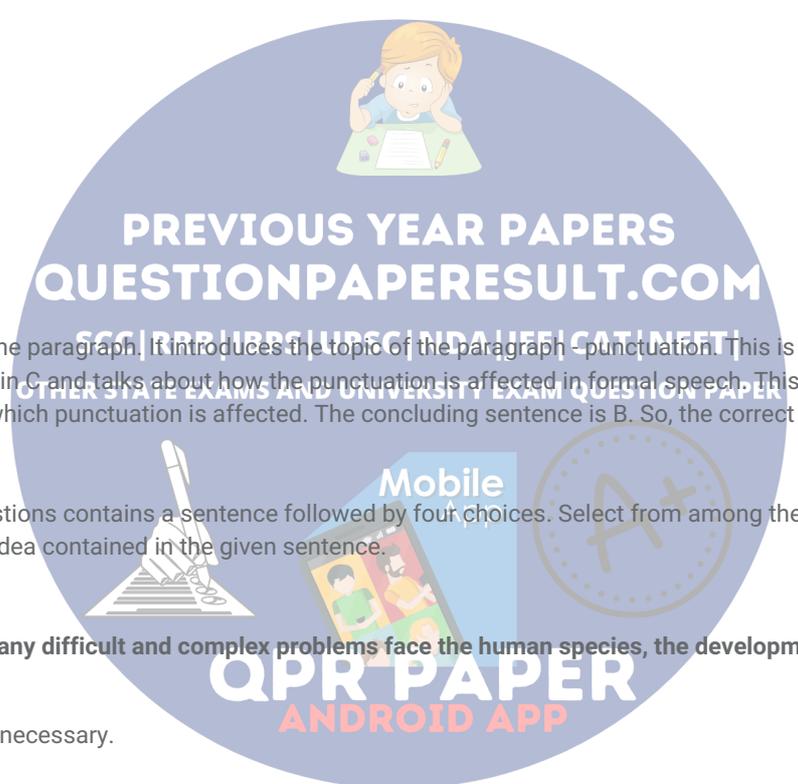
Option B is negative and is not suitable.

Hence, option D is the correct answer.

**Question 107**

In the European Community countries there has been talk of an energy tax to raise funds

A by burdening the rich who can afford higher taxes.



- B to penalise heavy users of energy.
- C by raising the price of energy-intensive implements.
- D to search for alternative sources of energy.

**Answer: D**

**Explanation:**

As the sentence in the question talks about energy tax to raise funds, it must be for some activity which will help them come out of the energy constraints. Thus, Option D is the best fit as the concluding part.

**Question 108**

**"Look before you leap", reflects an attitude expressed in such a saying as**

- A "Forewarned is forearmed"
- B "A stitch in time saves nine"
- C "No risk no gain"
- D "Fools rush where the angels fear to tread"

**Answer: A**

**Explanation:**

The idiom "look before you leap" means "to consider the possible consequences before committing to an action". The idiom "forewarned is forearmed" means knowing possible difficulties and dangers earlier will give one a tactical advantage. Both these idioms have a common attitude that being prepared for a possible danger is to ones advantage. Thus, option A is the right choice.

**Question 109**

**This is the ancient kingdom of Sumeria and you are its venerated ruler. The fate of Sumeria's economy and of your royal subjects**

- A is written in their horoscopes.
- B is as unknown as the name of your kingdom.
- C is entirely in your hands.
- D is allocated according to their needs.

**Answer: C**

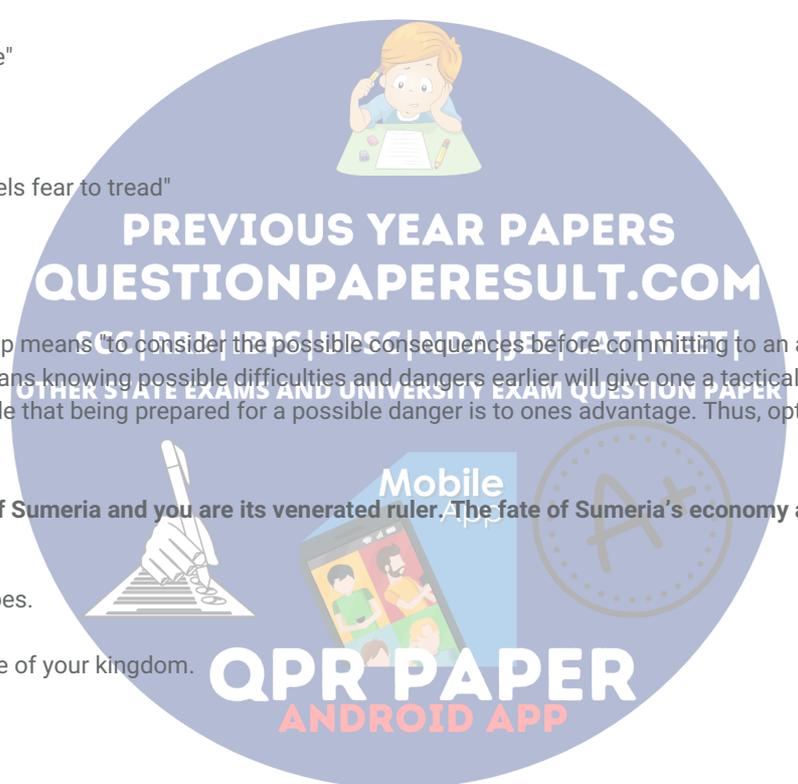
**Explanation:**

From the context we can infer that the speaker is talking to the King of Sumeria. As the King the duty to protect his subjects and ensure the economic prosperity of the kingdom will be the duty of the King. Thus, option C which reflects the same is the best choice among the options.

**Question 110**

**Furthermore, to be radical means to be ready and willing to break with the predominant cultural, political and social beliefs and values in order to**

- A investigate the essential realities that they conceal.
- B investigate the root cause of malaise in a society.
- C shape a new economic order.



D Re-construct the system in terms of new realities.

**Answer: D**

**Explanation:**

The sentence talks about breaking with the predominant cultural, political and social beliefs and values. In order to reconstruct something, the thing should first be broken. Thus, D logically follows the sentence.

Sentence A is incorrect as it is vague.

B is also incorrect as there is no talks of malaise in the society in the sentence.

C can also be eliminated for the same reason as B.

**Question 111**

**Entrepreneurs are never satisfied with the status quo, they are intent on shaping the future, rather than being shaped by it. As one Chief Executive once said**

A The future is the sum total of actions in the present and past..

B If you are not alert, before you realize it the future is on you..

C I do not want our competitors making decisions for us..

D It is a sound business policy to anticipate change than being swamped by it..

**Answer: B**

**Explanation:**

The given sentence talks about how entrepreneurs are never satisfied and they are always looking for something more innovative to shape the future. The quote used by the executive should be in line with this idea. C is completely unrelated to this while A distorts the meaning. Among B and D, the former one is a better choice because D talks about the business aspects which is nowhere implied in the given sentence. Hence B is the correct answer.

**Instructions**

For the following questions answer them individually

**Question 112**

**Select the set in which the statements are logically related.**

- A. No attendants are qualified.
- B. Some nurses are qualified.
- C. Some nurses are not qualified.
- D. All nurses are attendants.
- E. All attendants are qualified.
- F. Some attendants are qualified.

A ABF

B CDF

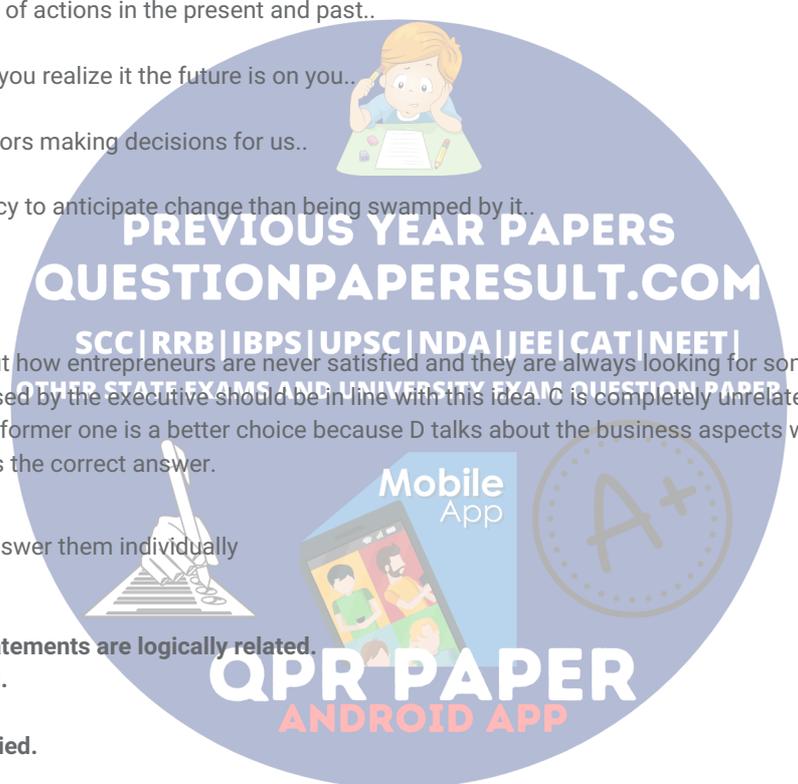
C BDF

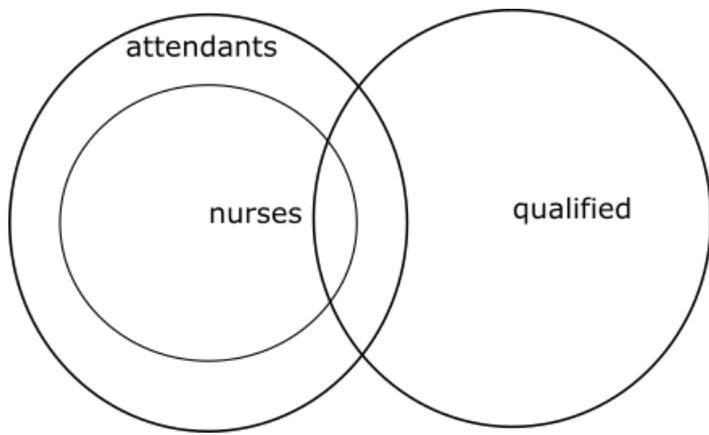
D BDE

**Answer: C**

**Explanation:**

Sequence BDF is the most appropriate since if some nurses are qualified and if all nurses are attendants, then some attendants will also be qualified. This can be seen from the following figure:





Question 113

Select the set in which the statements are logically related.

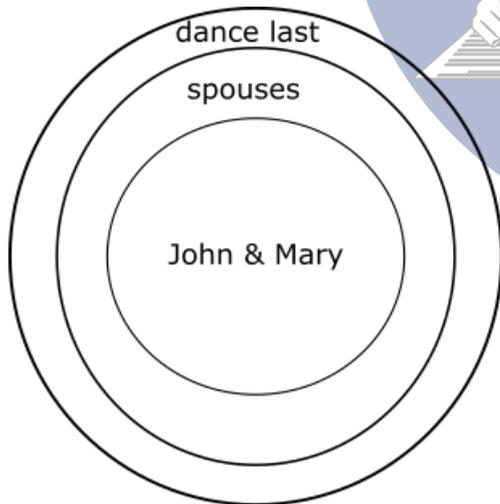
- A. Mary is John's wife.
- B. Mary and John danced together.
- C. Mary wears John's ring.
- D. Husband and wives danced the last waltz.
- E. John loves Mary.
- F. John danced last with Mary.

- A ADF
- B ABD
- C ACE
- D AEF

Answer: A

Explanation:

AD will give the following figure which will have F as the conclusion.



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Question 114

Select the set in which the statements are logically related.

- A. All roses are fragrant.
- B. All roses are majestic.
- C. All roses are plants.
- D. All plants need air.
- E. All roses need air.
- F. All plants need water.

A ABC

B BCD

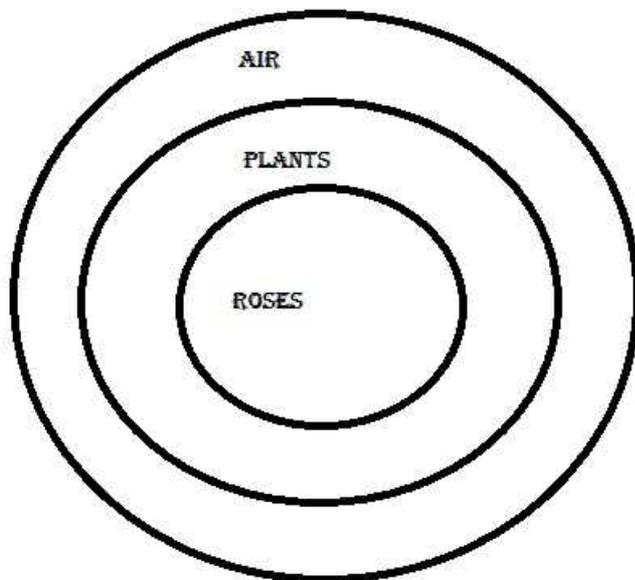
C CDE

D CEF

Answer: C

**Explanation:**

Based on the Venn diagram shown below, option C is the correct option. ie "All roses are plants" and "All plants need air" implies "All roses need air".



Question 115

Select the set in which the statements are logically related.

- A. Laxman is a man.
- B. Meera is Laxman's wife.
- C. Some women are islands.
- D. No man is an island.
- E. Meera is not an island.
- F. Laxman is not an island.

A ADE

B ABE

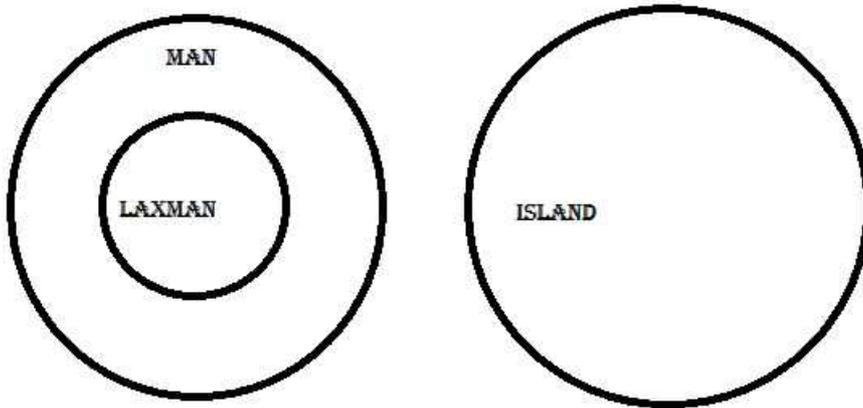
C ADF

D CDE

Answer: C

**Explanation:**

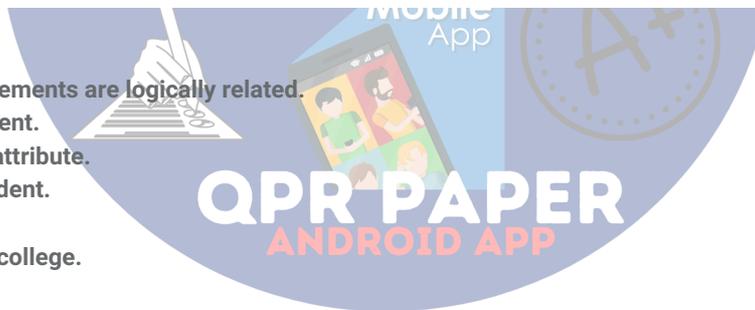
Based on the Venn diagram below, Option C is the correct option. ie "Laxman is a man" and "No man is an island" imply that "Laxman is not an Island"



**Question 116**

Select the set in which the statements are logically related.

- A. College students are intelligent.
- B. Intelligence is a collegian's attribute.
- C. Ram's sister is a college student.
- D. Ram goes to college.
- E. All intelligent persons go to college.
- F. Ram is an intelligent person.



A ADF

B BCD

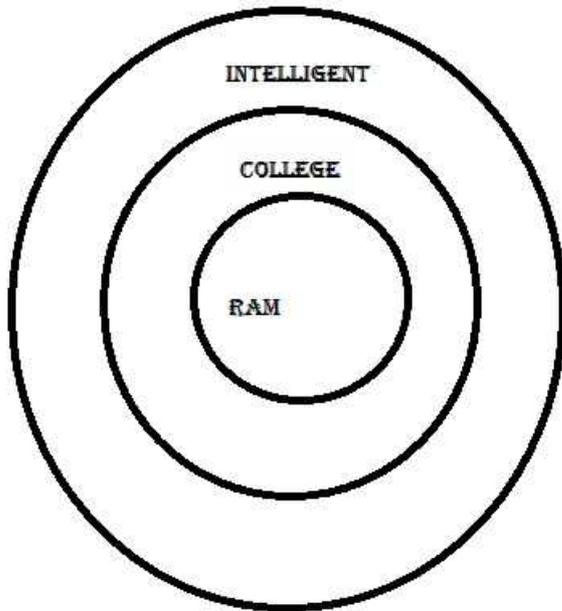
C ABF

D ABD

Answer: A

**Explanation:**

Based on the Venn diagram below, option A is correct ie If "All college students are intelligent" and "Ram goes to college" are true then it holds that " Ram is an intelligent person".



Question 117

Select the set in which the statements are logically related.

- A. Smoking causes cancer.
- B. All cigarettes are hazardous to health.
- C. Smoking doesn't cause cancer sometimes.
- D. One brand of cigarettes is cham - cham.
- E. Brand X causes cancer.
- F. Cham-cham is bad for health.

A ABE

B BDF

C ABD

D ABC

Answer: B

**Explanation:**

Based on the Venn Diagram below, If all cigarettes are injurious to health and if Cham cham is a cigarette, then it implies that Cham cham is injurious to health.

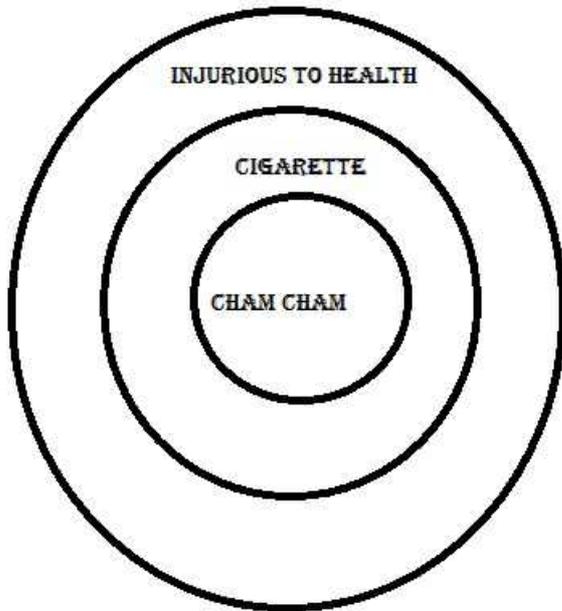
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Question 118

Select the set in which the statements are logically related.

A. All good bridge players play good chess.

B. Many good chess players are not bridge players.

C. Goren is a good bridge player.

D. Goren plays chess well.

E. Spassky plays chess well.

F. Spassky plays bridge badly.

A ABD

B BEF

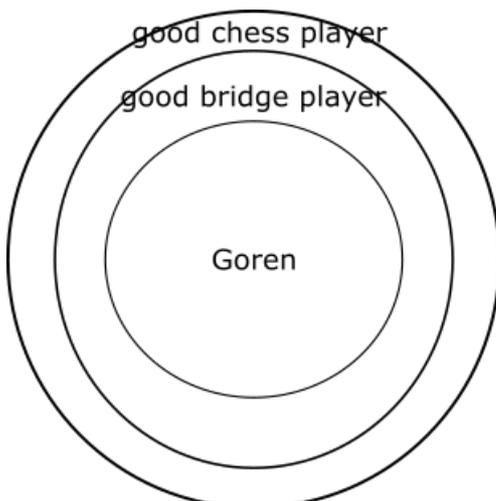
C ACE

D ACD

Answer: D

Explanation:

AC will have the following figure which will have D as the conclusion.



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Question 119

Select the set in which the statements are logically related.

- A. All snakes are reptiles.
- B. All reptiles are not snakes.
- C. All reptiles are cold blooded.
- D. All snakes lay eggs.
- E. All reptiles lay eggs.
- F. Snakes are cold blooded.

A ADE

B BDE

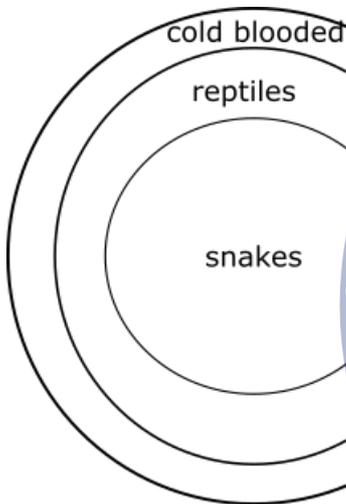
C ABE

D ACF

Answer: D

Explanation:

ACF will give the following Venn diagram which will give F as the correct conclusion for the premise AC.



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Question 120

Select the set in which the statements are logically related.

- A. All leaves are green.
- B. All leaves have chlorophyll.
- C. Chlorophyll is green.
- D. All plants have leaves.
- E. All plants have chlorophyll.
- F. Only leaves have chlorophyll.

A BDE

B BEF

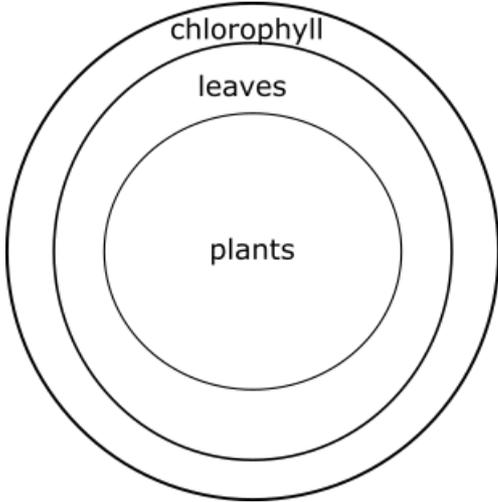
C BDF

D AEF

Answer: A

Explanation:

BDE will give the following Venn diagram which will give E as the conclusion for the premise BD.



From statements B and D we can infer E.

BEF is contradictory pair.

F is a false assumption in the pair BDF.

**Question 121**

Select the set in which the statements are logically related.

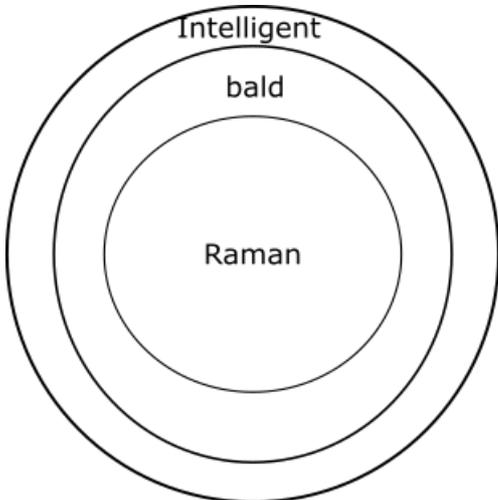
- A. Some men are bald.
- B. Bald people are intelligent.
- C. Raman is a man.
- D. Raman is bald.
- E. Raman is intelligent.
- F. All men are intelligent.

- A ABF
- B BDE
- C BCD
- D BEF

Answer: B

**Explanation:**

BD from the following Venn diagram has E as the conclusion.



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Question 122

Select the set in which the statements are logically related.

- A. No barbarian is gentleman.
- B. Some gentlemen are barbarians.
- C. Some gentlemen are rude.
- D. No gentlemen are rude.
- E. Some barbarians are not rude.
- F. All barbarians are rude.

A ABE

B BCE

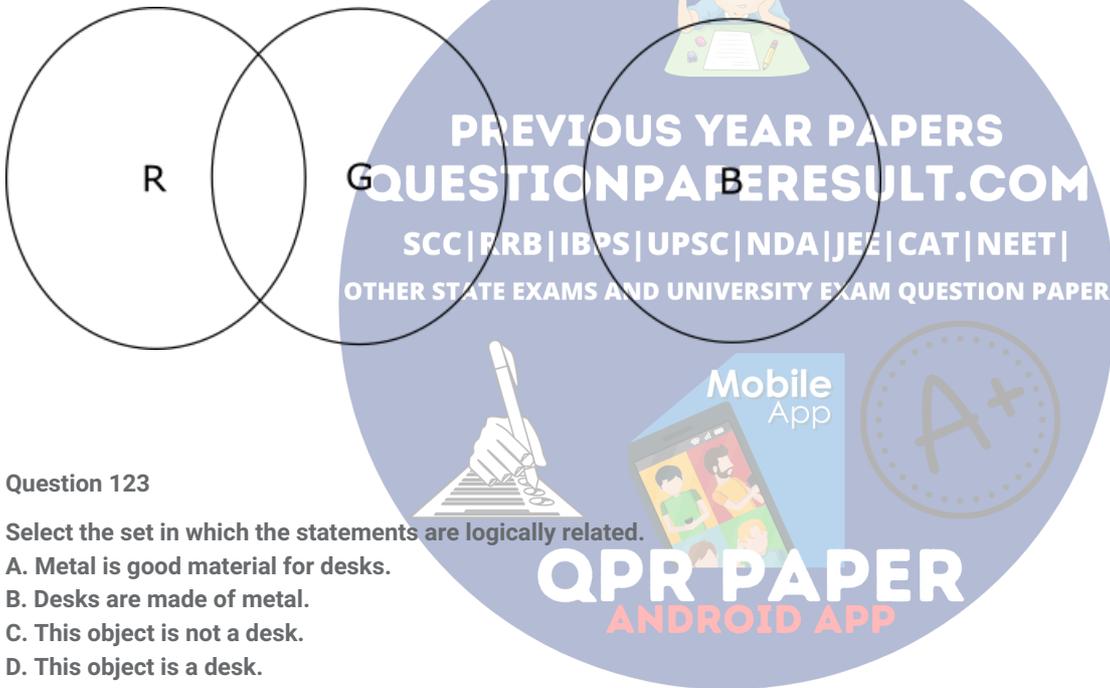
C ADF

D BDE

Answer: D

Explanation:

BD from the following figure gives E as the conclusion.



Question 123

Select the set in which the statements are logically related.

- A. Metal is good material for desks.
- B. Desks are made of metal.
- C. This object is not a desk.
- D. This object is a desk.
- E. This object is not made of metal.
- F. This is made of metal.

A ADF

B BCE

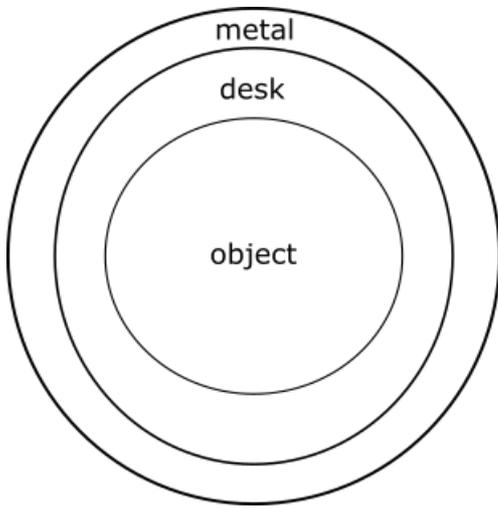
C ABD

D BDF

Answer: D

Explanation:

BDF has the below given Venn diagram from which we can see that F is the conclusion for the premise BD.



Question 124

Select the set in which the statements are logically related.

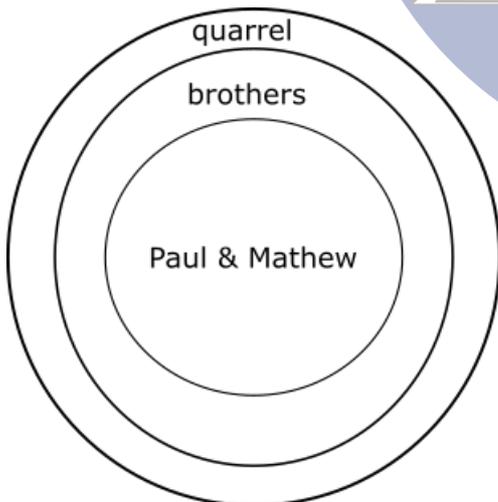
- A. Mathew and Paul are brothers.
- B. Siblings are known to quarrel often.
- C. Mathew and Paul don't quarrel.
- D. All those who quarrel are siblings.
- E. Paul and Mathew quarrel often.
- F. Mathew and Paul cannot be siblings.

- A BDE
- B ADF
- C CDE
- D ABE

Answer: D

Explanation:

The premise AB gives E as the conclusion which can be seen from the following figure:



Question 125

Select the set in which the statements are logically related.

- A. Painting and music is art.
- B. Art is symptom of culture.
- C. Culture and art are complementary.
- D. Music is a form of art.
- E. Painting is a form of art.
- F. Music shows culture.

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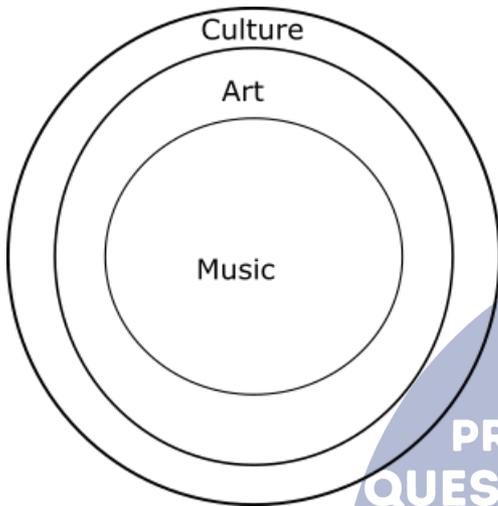
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- A BDF
- B AEF
- C ACE
- D CEF

Answer: A

**Explanation:**

The premise BD gives F as the conclusion which can be seen from the following Venn diagram:



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**Question 126**

Select the set in which the statements are logically related.

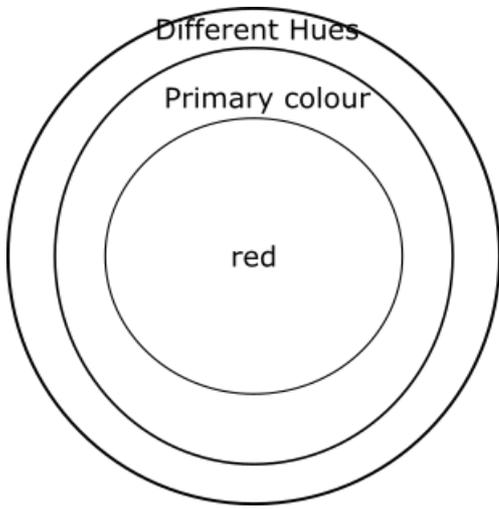
- A. Different hues are obtained from primary colours.
- B. A rainbow consists of several hues.
- C. Blue and red can give different hues.
- D. Red is a primary color.
- E. Blue can give different hues.
- F. Red can give different hues.

- A ACE
- B AEF
- C ADF
- D CDF

Answer: C

**Explanation:**

From the below given Venn diagram, we can see that F is the conclusion of ADF



All the other options are not logically related.

In ACE : CE are reiterated, A is unrelated to CE

In AEF : All three statements are facts.

In CDF: C and F are reiterated.

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