CSIR- NET 2022 General Aptitude MOCK

1.Find the probability of choosing a team of 11 students from 8 boys and 8 girls if it is given that the number of boys should always be greater the number of girls.

A. 1/3

B. 2/3

C. 4/9

D. 1/2

2.Five chair number 1 to 5 are placed around a round table. Starting from chair number 3, a person keeps going around the table anticlockwise. After crossing 19 chairs, the person will reach the chair number?

A. 2

B. 3

C. 5

D. 1

3.Find the smallest number which on adding 31 is exactly divisible by 34, 48 and 58.

A. 23655

B. 23636

C. 23633

D. 23542

4.In a certain code language 'TCS' is coded as 'VAU' and 'GOOGLE' is coded as 'IMQENC' ; then 'GRADEUP' can be coded as

A. ITCBGWR

B. EPYBCSN

C. IPCBGSR

D. ITCFGWR

5.A Car X takes 2hrs more than car Y to travel a distance of 600km. Due to a failure in car Y the average speed of car Y becomes 3/4th of the original speed and it takes 1hr more than car X to cover the same distance. Calculate the original speed of car Y?

A. 70 kmph   B. 88 kmph

C. 66 kmph   D. 56 kmph

6.Divide Rs.21236/- between P and Q, so that P's share at the end of 5 years may equal to Q's share at the end of 7 years, compound interest being 6% p.a.

A. Rs.11200, Rs. 15000

B. Rs.11000, Rs. 12000

C. Rs.11236, Rs. 10000

D. Rs.10236, Rs. 9000

7.O is the point on PR in the following triangle ∠ POQ = ∠ROQ
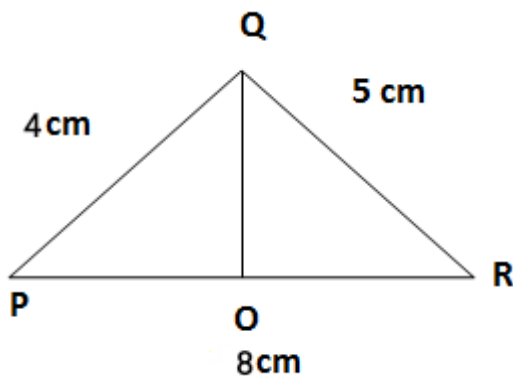
The value of QO (in cm) is

A. 2

B. 5

C. 3

D. 4

8.If in a concave mirror an object is placed between Radius of curvature and focus the image will be formed at?

A. Between radius of curvature and focus

B. Beyond radius of curvature

C. At focus

D. Between pole and focus

9.How many different colour of shirt can be made from orange, blue, green, white and red?

A. 31

B. 32

C. 28

D. 20

10. A force of 10 N acts on a block of mass 10 kg kept on a flat surface. If the coefficient of friction is 0.2, what is the frictional force acting on the body? Take g= 10 m/s^2.

A. 20 N

B. 2 N

C. 10 N

D. None of the above

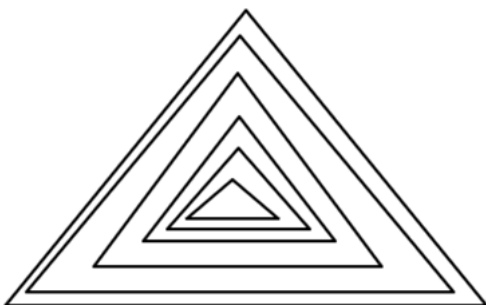11. If June 1, 2021 was Tuesday, which day was it in June 1, 2012?

A. Monday

B. Sunday

C. Thursday

D. Friday

12. Suppose there are X gloves of different colours in a box. If you take out one glove at a time, what is the maximum number of gloves that you have to take out before a matching pair is found? Assume X is an even number.
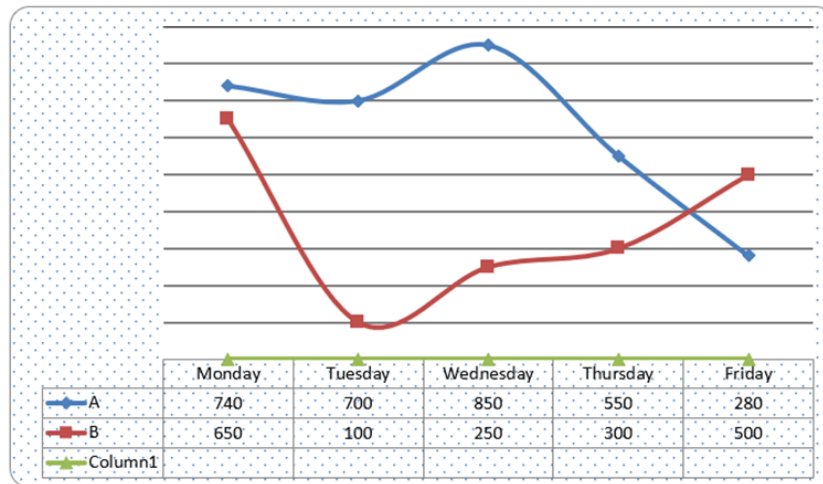
A. X/2

B. X - 1

C. X + 1

D. X

13. How many triangles are there in the following figures?

A. 4

B. 8

C. 6

D. 10

14. Distance travelled by two vehicles (in km) in five days is given below:

	Monday	Tuesday	Wednesday	Thursday	Friday
A	740	700	850	550	280
B	650	100	250	300	500
Column1					

The average distance travel (in km) by:

A. A is greater than that of B

B. A is less than that of B

C. A is equal to or less than that of B

D. B is equal to or less than that of A

15. A motorist, after driving a distance of 90 km on the 2nd day, finds that the ratio of the distance travelled by him on the 1st two days is 3 : 5. If he travels a distance of 46 km on the 3rd day, then the ratio of distance travelled on the 3rd day and the 1st day?

A. 52 : 63

B. 44 : 48

C. 46 : 54

D. 46 : 52

16. The table given below shows the number of various animals in four different national parks in a country.

National Parks	Tigers	Elephants	Other animals
Jim Corbett national park	270	1125	3105
Kaziranga national park	180	820	2200
Gir national park	210	1240	2150
Pench national park	175	925	1900

Total number of animals in Kaziranga national park is what percent more or less than total number of animals in Gir national parks?

A. $11\frac{1}{9}$ %

B. $17\frac{1}{2}$ %

C. $15\frac{1}{7}$ %

D. $16\frac{2}{3}$ %

17. If P = 7326515 × 7326525, Q = 7326514 × 7326526 and R = 7326513 × 7326527, then which one is largest?

A. P

B. Q

C. R

D. All are same

18. Find the missing number.

```
 3       9          1       6
 7   2   2          5   7   3
 4       1          4       8


 9       8          4       5
 2   1   7          8   ?   1
 6       3          2       3
```

A. 8

B. 5

C. 3

D. 1

19. How many digits are there in 7^{12} when it is expressed in the decimal form?

A. 11

B. 10

C. 8

D. 9

20. Pooja's only brother Anil is the husband of Vijay's mother Sushila. How is Pooja's mother Neha related to Vijay?

A. Maternal grandmother

B. Mother-in-law

C. Paternal Aunt

D. Paternal grandmother

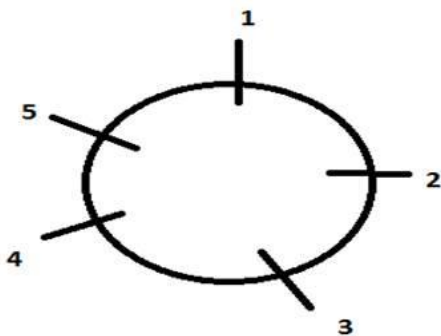## ANSWERS

1. Ans. D.

Required Probability $= \dfrac{^8C_6\,^8C_5 + ^8C_7\,^8C_4 + ^8C_8\,^8C_3}{^{16}C_{11}} = \dfrac{28 \times 56 + 8 \times 70 + 1 \times 56}{4368}$

$= \dfrac{1568 + 560 + 56}{4368} = \dfrac{2184}{4368}$
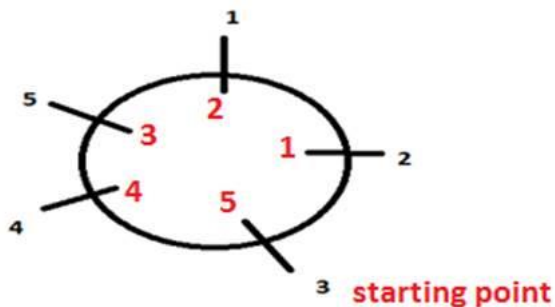
$= \dfrac{1}{2}$

Hence, Option D is correct.

2. Ans. B.

Given

Starting from chair number 3 moving in anti-clockwise

After crossing 19 chairs which means it goes 20 tables

$\dfrac{20}{5} = 4$ Rounds [The black digit is the chair no.]

After moving 4 rounds it will goes in chair number 3.

And for 20th position, it doesn't matter for the chair position whether it is clock or anti clockwise.

Therefore, after crossing 19 tables, the person will reach the chair number 3.

Hence, option B is the correct answer.

3. Ans. C.

First we find the least common multiple (L.C.M) of 34, 48 and 58

Therefore, LCM of 34, 48 and 58 = 2 × 2 × 2 × 2 × 3 × 17 × 29 = 23664

Therefore, the required number = 23664 – 31 = 23633

Hence option C is correct.

4. Ans. C.

Given, TCS is coded as VAU. The coding pattern is as follows

$T \xrightarrow{+2} V$

$C \xrightarrow{-2} A$

$S \xrightarrow{+2} U$

Given, GOOGLE is coded as IMQENC. The coding pattern is as follows

$G \xrightarrow{+2} I$

$O \xrightarrow{-2} M$

$O \xrightarrow{+2} Q$

$G \xrightarrow{-2} E$

$L \xrightarrow{+2} N$

$E \xrightarrow{-2} C$

$G \xrightarrow{+2} I$

$R \xrightarrow{-2} P$

A $\xrightarrow{+2}$ C

D $\xrightarrow{-2}$ B

E $\xrightarrow{+2}$ G

U $\xrightarrow{-2}$ S

P $\xrightarrow{+2}$ R

Hence, option C is the correct answer.

5. Ans. C.

Time taken by car X = Time taken by car Y + 2hr (given)

$T_X = T_Y + 2hr$ ....(1)

$\frac{600}{S_X} = \frac{600}{S_Y} + 2$

Now due to failure,

$T_X = T_Y' - 1hr$ (T_Y' is the new time taken by car Y)

$\frac{600}{S_X} = \frac{600}{\frac{3}{4}S_Y} - 1$ ....(2)

Equating eq (1) and (2)

$\frac{600}{S_Y} + 2 = \frac{600}{\frac{3}{4}S_Y} - 1$

$\frac{600}{S_Y} + 3 = \frac{600}{S_Y} * \frac{4}{3}$

$\frac{600}{S_Y} \left(\frac{4}{3} - 1 \right) = 3$

$S_y = 66.67$ kmph

6. Ans. C.

$$21236$$

$$P \qquad\qquad Q$$

$P \times \left[1 + \dfrac{6}{100}\right]^5 = Q \times \left[1 + \dfrac{6}{100}\right]^7$

$P \times \left[\dfrac{53}{50}\right]^5 = Q \times \left[\dfrac{53}{50}\right]^7$

$\dfrac{P}{Q} = \dfrac{2809}{2500}$

5309 units = 21236

1 unit = 4

Therefore,

P : Q

2809 × 4 : 2500 × 4

11236 : 10000

Hence option C is correct.

7. Ans. B.

In ΔPOQ and ΔROQ

∠POQ = ∠ROQ (Given)

∠ Q = ∠ Q (common)

By Angle – Angle Concept
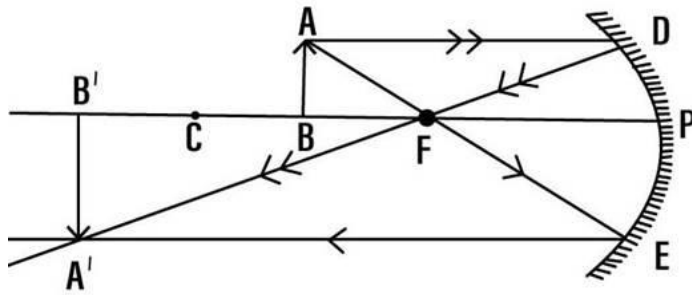
Δ POQ is similar to ΔROQ

QO/QR=PQ/PO

QO/5=4/4

QO = 5 cm

Answer

The value of QO is 5cm

8. Ans. B.

R = radius of curvature

F = focus

P = pole

AB = object

A'B' = Image

9. Ans. A.

Combination formula

$^nC_r = \dfrac{n!}{r!(n-r)!}$

^nC_r = number of combination

n = total number of objects in the set

r = number of choosing objects from the set

Orange, blue, green, white and red

Total five different colour

We can use 1, 2, 3, 4 and 5 colour

It does not matter which colour is used

So, total combinations possible

= $^5C_5 + {^5C_4} + {^5C_3} + {^5C_2} + {^5C_1}$

= $\dfrac{5!}{5!} + \dfrac{5!}{4! \times 1!} + \dfrac{5!}{3! \times 2!} + \dfrac{5!}{2! \times 3!} + \dfrac{5!}{1! \times 4!}$

= 1 + 5 + 10 + 10 + 5

= 31

Answer

There are 31 different colours of shirts can be made.

10. Ans. C.

We know that the maximum value of static friction on a body= $\mu*N$

Here, μ is the coefficient of friction and N is the normal reaction.

Normal reaction on a body kept on flat surface= mg= 10*10= 100 N

Maximum value of static friction= 0.2*100= 20 N

Since the object is in rest.

Static frictional force is always equal to or less than the applied force.

Therefore, friction force acting on the body= Force applied on the body= 10 N.

Hence the correct option is (C)

11. Ans. D.

In a year, number of weeks = 52 extra day = 1

From 2012 to 2021, there are 10 years.

So number of extra days = 10(1) = 10

While 2012 is a leap year,

Having one more extra day apart from the normal extra day.

Thus, number of extra days = 10 + 1 = 11

Out of these 11 extra days, 7 days form a week and so 4 day remains.

Hence, June 1, 2012 is 4 day less then June 1, 2021 i.e., it is Friday.

Answer

June 1, 2012 is Friday

Hence, option D is the correct answer.

12. Ans. D.

Suppose we take four different colours of gloves i.e. Green, Blue, Red and Yellow

First we take out green color gloves

Then Blue color gloves

Then Red color gloves

At last yellow color gloves

If all four colors of gloves are taken out then fifth one will be again any of the given four color gloves, and then so on…

It means if we have four colors of different gloves then in fifth time the color of gloves started matching.

So, here we can conclude that the maximum number of gloves that you have to take out before a matching pair is found is **X** number of gloves.

Hence option D is correct.

13. Ans. C.
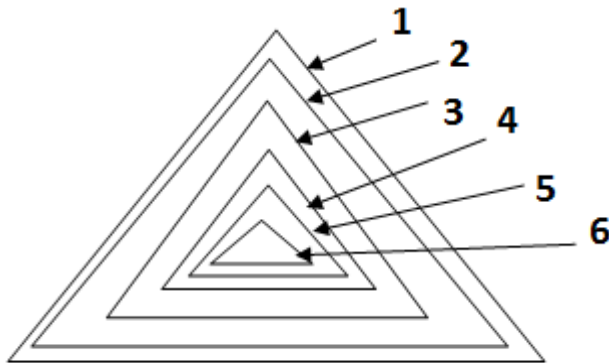
Answer

When we count it is clear that

There are 6 triangles in the given figure.

Hence, option C is the correct answer.

14. Ans. A.

Average distance travelled by A = $\frac{740 + 700 + 850 + 550 + 280}{5} = \frac{3120}{5} = 624$

Average distance travelled by B = $\frac{650 + 100 + 250 + 300 + 500}{5} = \frac{1800}{5} = 360$

The average distance travelled by A is greater than that of B.

Hence option A is correct.

15. Ans. C.

Distance covered on the first day = $\frac{3}{5} \times 90 = 54$ km

Required Ratio = 46 : 54

Hence option C is correct.

16. Ans. A.

Total number of animals in Kaziranga national park

= 180 + 820 + 2200

= 3200

Total number of animals in Gir national park

= 210 + 1240 + 2150

= 3600

Required Percentage = $\frac{3600-3200}{3600} \times 100\% = \frac{100}{9}\% = 11\frac{1}{9}$ %

Hence option A is correct.

17. Ans. A.

We know,

$(a^2 – b^2) = (a - B) \times (a + B)$

P = 7326515 × 7326525 = (7326520- 5) × (7326520+ 5)

Q = 7326514 × 7326526 = (7326520 - 6) × (7326520 + 6)

R = 7326513 × 7326527 = (7326520 - 7) × (7326520 + 7)

Hence, P = (7326520 - 5) × (7326520 + 5) is the largest among P, Q and R.

So, option A is correct.

18. Ans. B.

Central Element = Sum of the left column element – Sum of the right column element

Thus,

x = 4 + 8 + 2 – (5 + 1 + 3)

x = 5

Missing number = 5

Hence, option B is the correct answer.

19. Ans. A.

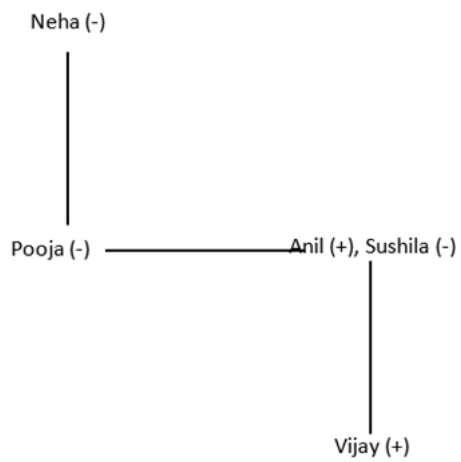Approximation method could be used

$7^{12} = (7^2)^6 = (49)^6$

We take simplest value

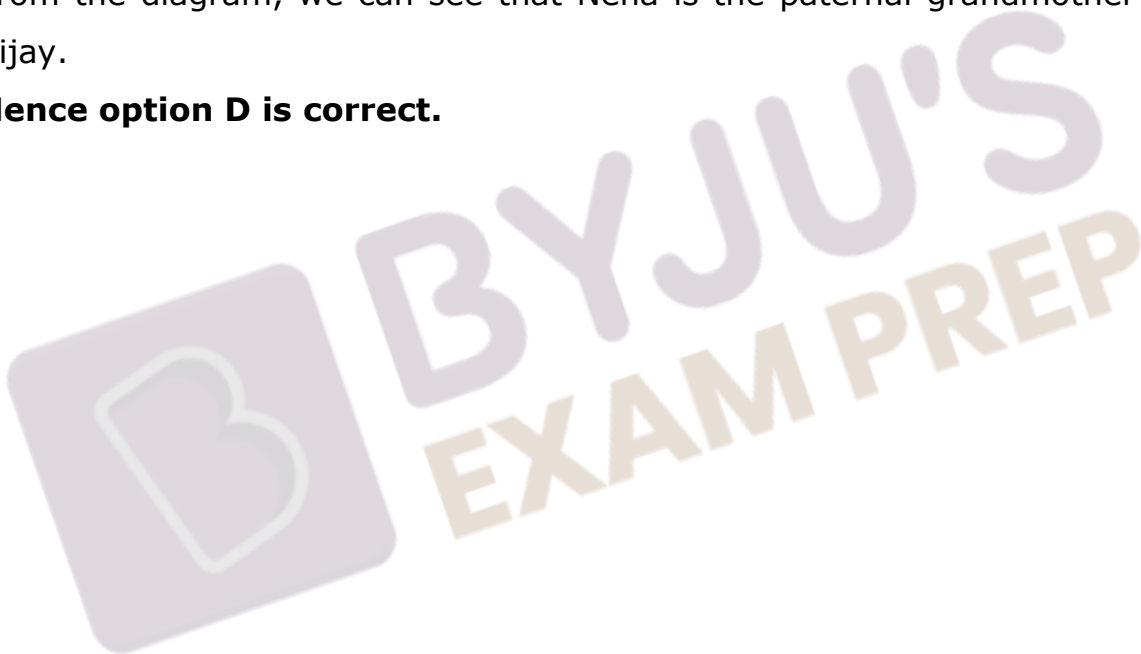$50^6 = 5^6 \times 1000000 = 15625000000$, which is 11 digits.

Answer

11 digits are there in 7^{12}

20. Ans. D.

```
                    Neha (-)
                       |
                       |
                       |
                       |
                       |
                       |
                       |
   Pooja (-) —————————— Anil (+), Sushila (-)
                       |
                       |
                       |
                       |
                     Vijay (+)
```

From the diagram, we can see that Neha is the paternal grandmother of Vijay.

Hence option D is correct.

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