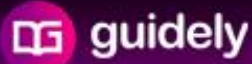


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Logical Reasoning

1. An assertion (A) and a reason (R) are given below.

Assertion (A): When lightning strikes, the sound is heard a little after the flash is seen.

Reason (R): The velocity of light is greater than that of the sound.

Choose the correct option.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) Both A and R are false.

Answer: A)

2. Complete the series.

19, 25, 21, 30, 23, 35, 25, ?

- a) 40
- b) 27
- c) 37
- d) 45

Answer: A)

The series is divided into two parts:

Numbers at odd position – 19, 21, 23, 25

Numbers at even position – 25, 30, 35, **40**

3. In a certain code language, '+' represents 'x', '-' represents '+', 'x' represents '÷' and '÷' represents '-'. What is the answer to the following question?

What is the answer to the following question?

$$14 - 16 + 14 \times 7 \div 3 = ?$$

- a) 34
- b) 46
- c) 43
- d) 40

Answer: C)

+	-	×	÷
×	+	÷	-

Given equation: $14 - 16 + 14 \times 7 \div 3 = ?$

After changing the symbols:

$$= 14 + 16 \times 14 \div 7 - 3$$

$$= 14 + 32 - 3$$

$$= 46 - 3$$

$$= \mathbf{43}$$

4. Select the option that is related to the third term in the same way as the second term is related to the first term.

GIM : TRN :: CGK : ?

- a) PTX
- b) XPT
- c) XTP

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d) PXT

Answer: C)

Letters are coded by its reverse letter.

5. In a certain code, TOUCH is written as 15. How will LEFT be written in that code?

- a) 12
- b) 15
- c) 16
- d) 18

Answer: A)

Number of letters in TOUCH is 5 and $(5 \times 3) = 15$

So, Number of letters in LEFT is 4 and $(4 \times 3) = 12$

6. An assertion (A) and a reason (R) are given below.

Assertion (A): 26th January is celebrated as the Republic day.

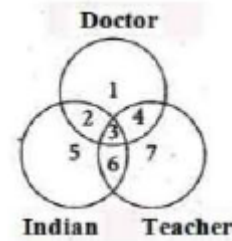
Reason (R): The Indian Constitution came into force with effect on 26th January, 1950.

Choose the correct option.

- a) Both A and R are true and R is the correct explanation of A.
- b) Both A and R are true but R is not the correct explanation of A.
- c) A is true, but R is false.
- d) Both A and R are false.

Answer: A)

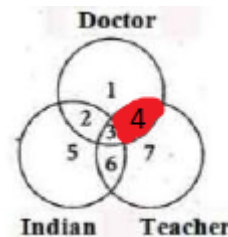
7. In the following diagram, there are three circles. Study the diagram carefully and answer the given question.



How many Teachers are Doctors but not Indians?

- a) 3
- b) 4
- c) 6
- d) 7

Answer: B)



8. Seven friends O, P, Q, R, S, T and U are watching a movie sitting in a row facing north. S is sitting at one extreme end. Q is sitting second to the right of S. P is sitting between O and Q. U is not sitting at any extreme end. R is sitting to the left of T. Who is sitting at the extreme left end?

- a) R
- b) O
- c) T
- d) S

Answer: D)

SUQPORT

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9. Select the option that is related to the third term in the same way as the second term is related to the first term.

Lamb : Frisk :: Mouse : ?

- a) Strut
- b) Leap
- c) Scamper
- d) Swoop

Answer: C)

The movement of a lamb is known as frisk.

The movement of a mouse is known as scamper.

10. Which one of the following letter clusters does NOT belong to the group?

- a) FF
- b) GH
- c) KA
- d) DH

Answer: B)

- a) FF → 6 + 6 = 12
- b) GH → 7 + 8 = 15**
- c) KA → 11 + 1 = 12
- d) DH → 4 + 8 = 12

11. The statements below are followed by two conclusions labelled I and II. Assuming that the information in the statements is true, even if it appears to be at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statements.

Statements:

Some R are T

No T is K

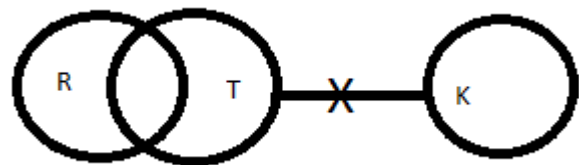
Conclusion:

I. Some T are not R

II. Some T are R

- a) Only conclusion II follows.
- b) Neither conclusion I nor conclusion II follows.
- c) Only conclusion I follows.
- d) Both conclusions follow.

Answer: A)



- I. Some T are not R - False
- II. Some T are R - True

12. Select the option that will correctly replace the question mark (?) in the given pattern.

15	14	23
7	6	5
66	50	?

- a) 17
- b) 45
- c) 23
- d) 34

Answer: D)

1st row: $(15 + 23) \div 2 = 14$

2nd row: $(7 + 5) \div 2 = 6$

3rd row: $(66 + ?) \div 2 = 50$

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$$66 + ? = 100$$

$$? = 100 - 66$$

$$? = 34$$

13. Select the option that is related to the third number in the same way as the second number is related to the first number.

$$18 : 378 :: 12 : ?$$

- a) 167
- b) 180
- c) 118
- d) 360

Answer: B)

$$18 \times (18 + 3) = 378$$

$$12 \times (12 + 3) = 180$$

14. Choose the odd number out of the given options.

- a) 39
- b) 65
- c) 53
- d) 117

Answer: C)

All numbers except '53' are divisible by 13.

15. In a certain code, FILTER is written as LIFRET.

How will CLEVER be written in that code?

- a) ELCREV
- b) ELCERV
- c) ELRCEV
- d) EECRLV

Answer: A)

F I L T E R
X X
L I F R E T

Similarly,

C L E V E R
X X
E L C R E V

16. Choose the odd one out of the given options.

- a) Fox
- b) Tiger
- c) Turtles
- d) Lion

Answer: C)

- a) Fox - Mammal
- b) Tiger - Mammal
- c) Turtles - Reptile**
- d) Lion - Mammal

17. Select the correct option that will fill in the blank and complete the series.

MLA, NKD, PIG, SFJ, ?

- a) VPM
- b) VMP
- c) WMB
- d) WBM

Answer: D)

$$M + 1 = N; N + 2 = P; P + 3 = S; S + 4 = W$$

$$L - 1 = K; K - 2 = I; I - 3 = F; F - 4 = B$$

$$A + 3 = D; D + 3 = G; G + 3 = J; J + 3 = M$$

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18. Select the option that is related to the third term in the same way as the second term is related to the first term.

UAE : Dirham :: Iran : ?

- a) Dinar
- b) Rial
- c) Euro
- d) Pound

Answer: B)

Dirham is the currency of UAE.

Rial is the currency of Iran.

19. Find the wrong term in the given series.

3, 6, 9, 12, 15, 18, 21, 24, 28, 30

- a) 12
- b) 18
- c) 28
- d) 24

Answer: C)

Instead of '28', it will be '27'.

The series is multiplication table of 3.

20. If CIRCLE is written as DJSDMF, then SQUARE is written as _____.

- a) TSSBVF
- b) TVSBSF
- c) TSVBSF
- d) TSVSBF

Answer: C)

$$C + 1 = D \quad S + 1 = T$$

$$I + 1 = J \quad Q + 1 = R$$

$$R + 1 = S \quad U + 1 = V$$

$$C + 1 = D \quad A + 1 = B$$

$$L + 1 = M \quad R + 1 = S$$

$$E + 1 = F \quad E + 1 = F$$

21. Select the correct order of the given words as they would appear when arranged in dictionary order.

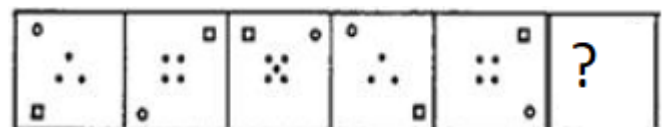
1. Voluntary
2. Vision
3. Venom
4. Various
5. Violent

- a) 3, 4, 2, 5, 1
- b) 4, 2, 5, 3, 1
- c) 4, 3, 2, 5, 1
- d) 4, 3, 5, 2, 1

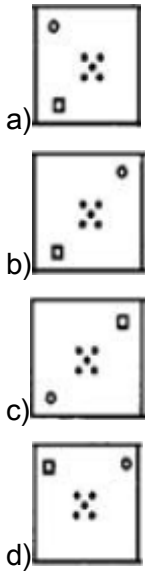
Answer: D)

4. Various
3. Venom
5. Violent
2. Vision
1. Voluntary

22. Select the correct option that will complete the series given below.

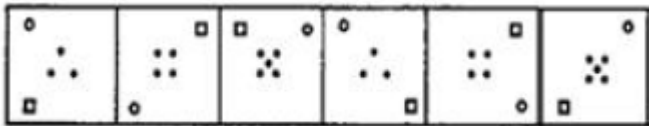


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- a)
- b)
- c)
- d)

Answer: B)



23. Which two signs need to be interchanged to make the given equation correct?

$$100 \div 10 \times 100 - 10 + 100 = 910$$

- a) + and ×
- b) + and -
- c) × and ÷
- d) - and ÷

Answer: B)

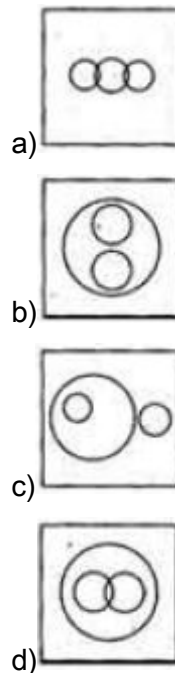
b) + and -

$$\begin{aligned} &100 \div 10 \times 100 + 10 - 100 \\ &= 1000 + 10 - 100 \\ &= 1010 - 100 \\ &= 910 \end{aligned}$$

24. Select the Venn diagram that best represents the given set of classes.

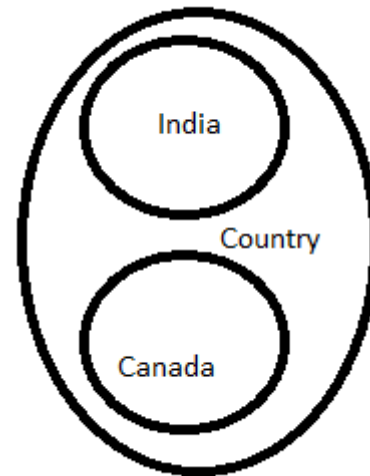
India, Canada, Country

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- a)
- b)
- c)
- d)

Answer: B)



25. '625' is related to '5' in the same way '9' is related to '_____'.
a) 27
b) 729
c) 6561
d) 5941

Answer: C)

$$5^4 = 625$$

$$9^4 = 6561$$

Answer: C)

$$5^4 = 625$$

$$9^4 = 6561$$

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26. In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement:

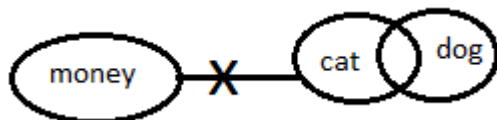
No money is cat

Some dog are cat

Conclusions:

- I. Some dog are money
- II. Some money are not dog
- a) Only conclusion I follows
- b) Only conclusion II follows
- c) Both I and II follow
- d) Either I or II follows

Answer: D)



- I. Some dog are money - False
 - II. Some money are not dog - False
- But I and II forms a complementary pair.
So, Either I or II follows.

27. If man is called fish, fish is called bird, bird is called snake, snake is called lion, lion is called tiger, tiger is called peacock, then the National animal of India is called _____.

- a) Lion
- b) Tiger

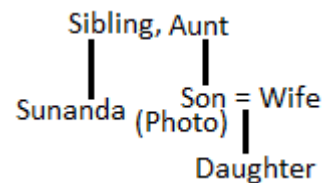
- c) Snake
 - d) Peacock
- Answer: D)

The National animal of India is 'Tiger' and tiger is called peacock.

28. Pointing to a photograph, Sunanda said "he is the father of the lady who is my aunt's daughter-in-law's husband's daughter". How is the man in the photo related to Sunanda?

- a) Brother
- b) Uncle
- c) Nephew
- d) Father

Answer: A)



The man in the photo is brother of Sunanda.

29. A statement and two arguments given below.

Statement:

Should an organization like UNO be dissolved?

Conclusions:

- I. Yes. With cold war coming to an end, such organizations have no role to play.
- II. No. In the absence of such organizations there may be a world war.

Choose the correct option.

- a) Only argument I is strong.
- b) Only argument II is strong.

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c) Both arguments I and II are strong.

d) Neither argument I nor II is strong.

Answer: B)

30. In the question given below a statement is followed by three courses of action numbered I, II and III. You have to assume everything in the statement to be correct, then decide which of the three given courses of action logically follows.

Statement:

Number of dropouts from the municipal schools have significantly increased after withdrawal of mid-day meal scheme.

Courses of action:

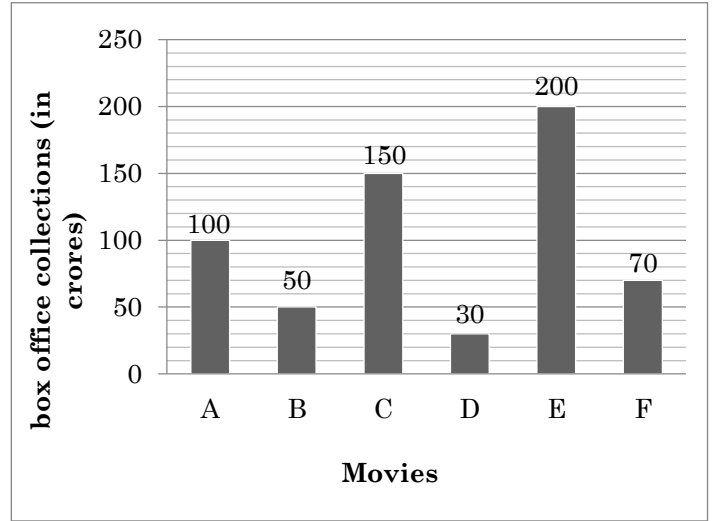
- I. The government should reconsider its decision of withdrawal of mid-day meal scheme.
- II. The government should close down some of the municipal schools.
- III. The government should carry out a detailed study to find out the reasons for school dropouts.

- a) None follows.
- b) Only I follows.
- c) Only I and III follows.
- d) Only II follows.

Answer: C)

Mathematics

Direction (1-4): The bar graph shows box office collections (in crores) of 6 different movies (A, B, C, D, E, F) of a certain company. Study the diagram and answer the following questions.



1. Which movie grossed the second highest box office collections?

- a) E
- b) C
- c) B
- d) D

Answer: (B)

Order according to box office collection $E > C > A > F > B > D$

So, Movie C gain second highest box office collection.

2. By what percent collections of movie D were lower than that of movie B?

- a) 66.67
- b) 40
- c) 20
- d) 60

Answer: (B)

Required % = $(50 - 30)/50 \times 100 = 40\%$

3. Collection of movie C is equal to the combine collections of which movies?

- a) F, A and D

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b) B, D and F

c) B and D

d) A, B and F

Answer: (B)

Collection of movie C = 150

Collection of movie (B+D+F) = 50 + 30 + 70 = 150

So, collection of movie C = collection of movie (B + D + F)

4. If the producer gets 60% of the box office collections, how much (in crores) did the producer of the movies A and E gets?

a) 120

b) 60

c) 180

d) 300

Answer: (C)

Amount the producer gets = $\frac{60}{100} \times (100 + 200) = 180$ crore

5. Solve: $\frac{3}{4} + [3/4 + \frac{3}{4} \div (3/4 + 3/4)]$

a) +2.5

b) $3/4$

c) 2

d) $3/2$

Answer: (C)

Given, $3/4 + [3/4 + 3/4 \div (3/4 + 3/4)]$

= $3/4 + [3/4 + \frac{3}{4} \times 4/6]$

= $3/4 + [3/4 + 1/2] = \frac{3}{4} + 5/4$

= $8/4 = 2$

6. A sum of Rs. x was divided between A, B, C and D in the ratio $1/3 : 1/5 : 1/6 : 1/9$. If the difference

between the shares of B and D is Rs. 832, then the value of x is:

a) Rs. 7,592

b) Rs. 7,488

c) Rs. 7,696

d) Rs. 7,384

Answer: (A)

Ratio of sum of A, B, C and D = $1/3 : 1/5 : 1/6 : 1/9 = 90/3 : 90/5 : 90/6 : 90/9 = 30 : 18 : 15 : 10$

According to the question

Difference between the shares of B and D is Rs. 832
= $18 - 10 = 8$ unit

8 unit = 832

1 unit = 104

Total sum = $30 + 18 + 15 + 10 = 73$ unit = $104 \times 73 = 7592$

7. If (-5) is the root of the equation $2x^2 + px - p = 0$ and $p(kx^2 + x) = 0$. Find $p - k$.

a) 8 cm

b) 7.8 cm

c) 8.2 cm

d) 5.2 cm

Answer: (C)

Given $2x^2 + px - 10 = 0$

root = -5

So, $x = -5$

$\Rightarrow 2(-5)^2 + p(-5) - 10 = 0$

$\Rightarrow 50 - 5p - 10 = 0$

$\Rightarrow 40 = 5p$

$p = 8$

Now $P(kx^2 + x) = 0$

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By putting values

$$\therefore 8[k(25) + 5] = 0$$

$$\Rightarrow 2.5k = -5$$

$$\Rightarrow k = -1/5 = -0.2$$

$$\Rightarrow p - k = 8 - (-0.2) = 8.2$$

8. If the number $384yx$ is divisible by 90, then find $y - x$?

- a) 4
- b) 3
- c) 8
- d) 1

Answer: (B)

Given number = $384yx$.

For a number divisible by 10 last digit should be 0.

$$\therefore x = 0$$

Now for divisibility by 9 Sum of digit should be divisible by 9.

$$\Rightarrow 3 + 8 + 4 + y + 0 = 15 + y$$

Therefore $y = 3$ (to divisibility of 9 total should be 18)

$$\Rightarrow y - x = 3 - 0 = 3$$

9. Diagonal of a square is $10\sqrt{2}$ cm. The sides of rectangles are in ratio 5: 2. If the area of square and rectangle is equal then find the largest side of rectangle.

- a) 10 cm
- b) $5\sqrt{10}$ cm
- c) $3\sqrt{10}$ cm
- d) $2\sqrt{10}$ cm

Answer: (B)

Diagonal = $\sqrt{200}$ cm

Let 'x' be the side of square

$$\text{Then, } \sqrt{2} \times x = \sqrt{2} \times 10$$

$$x = 10 \text{ cm}$$

$$\text{Area} = 10 \times 10 = 100 \text{ cm}^2$$

Let the length = $5a$.

Breadth = $2a$

$$\text{Area} = 5a \times 2a = 10a^2$$

$$\Rightarrow 10a^2 = 100$$

$$a = \sqrt{10} \text{ cm}$$

$$\text{Length} = 5\sqrt{10} \text{ cm}$$

10. The compound interest on a certain sum at 10% p.a. for $2 \frac{1}{3}$ years is Rs. 1,201.60, interest compounded yearly. The sum is

- a) Rs. 4,500
- b) Rs. 4,200
- c) Rs. 5,400
- d) Rs. 4,800

Answer: (D)

As we know,

$$A = P(1 + r/100)^t$$

$$\text{Rate for first 2 years} = 10\%$$

$$\text{Rate for } 1/3 \text{ year} = 10/3 \%$$

$$\text{CI} = \text{Rs. } 1201.60$$

$$1201.60 + P = P \times (11/10) \times (11/10) \times (31/30)$$

$$= 1201.60 = 3751P/3000 - P$$

$$= (3751 - 3000P)/3000 = 1201.60$$

$$= 751P/3000 = 1201.60$$

$$= P = 1201.60 \times 3000/751$$

$$\therefore P = 4800$$

11. Two angles of an triangle are in ratio 1 : 2 and third angle is equal to the sum of other two. Find the smallest angle of the triangle.

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- a) 30°
- b) 45°
- c) 60°
- d) 55°

Answer: (A)

Let the first angles = x, second 2x and third = x+2x = 3x.

$$\therefore x + 2x + 3x = 180^\circ$$

$$6x = 180^\circ$$

$$x = 30^\circ$$

Smallest angle = x = 30°

12. The H.C.F of two numbers 19 : 17 is 11. Find the values.

- a) 95, 85
- b) 117, 109
- c) 209, 187
- d) 133, 119

Answer: (C)

Numbers are in ratio = 19 : 17

H.C.F = 11

$$\Rightarrow \text{First number} = 19 \times 11 = 209$$

$$\text{Second number} = 17 \times 11 = 187$$

13. Solve: $\sin^2(270 - a) + \sin^2(90 - a) + \sin^2 \pi/2$
 $\sin^2(270-a)$

- a) 1
- b) $\sin^2 \pi/2$
- c) $\sin^2 a$
- d) $\sin^2(90 - a)$

Answer: (D)

$$\sin^2(270-a) + \sin^2(90 - a) + \sin^2 \pi/2 = \sin^2(270 - a)$$

$$= \sin^2(180+90 - a) + \sin^2(90 - a) + 1. \sin^2(180 + 90 - a)$$

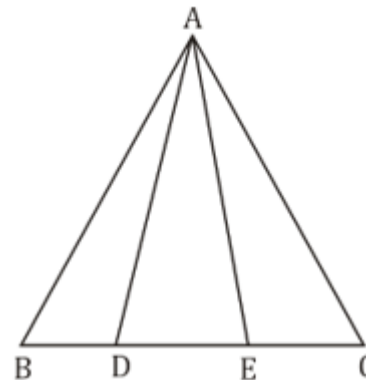
$$= -\sin^2(90 - a) + \sin^2(90 - a) + \sin^2(90 - a)$$

$$= \sin^2(90 - a)$$

14. Area of a $\Delta ABC = 39\text{cm}^2$ D and E are the point on BC such that $BD = DE = EC$. Find the area of ΔADC .

- a) 13 cm^2
- b) 26 cm^2
- c) 29 cm^2
- d) 20 cm^2

Answer: (B)



$$\text{Area}(\Delta ABC) = 39 \text{ cm}^2$$

Using the similarity property

$$\text{ar}(\Delta ABD) = \text{ar}(\Delta ADE) = \text{ar}(\Delta AEC)$$

$$\therefore \text{ar}(\Delta ADC) = 2/3 \times 39 = 26 \text{ cm}^2$$

15. There is a tree on the opposite side of the river and makes an angle of 60° with opposite horizontally and when we step backward with 36 m then the angle becomes 30°. Find the breadth of river?

- a) 15 m
- b) 18 m
- c) 12 m

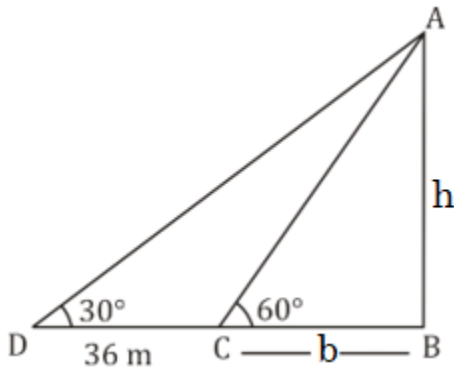
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d) 24 m

Answer: (B)

Let the breadth of river = b

and height of tree = h



$$\therefore \tan 60^\circ = h/b$$

$$\sqrt{3} b = h \dots (i)$$

$$\therefore \tan 30^\circ = h/(b+36)$$

$$(b+36)/\sqrt{3} = h \dots (ii)$$

From (i) and (ii)

$$\therefore \sqrt{3} b = (b+36)/\sqrt{3}$$

$$3b = b + 36$$

$$b = 18 \text{ m.}$$

16. If outer radius and inner radius of a hemisphere shaped bowl is 4 cm and 1 cm respectively. Find the total surface area?

a) $25\pi \text{ cm}^2$

b) $36\pi \text{ cm}^2$

c) $49\pi \text{ cm}^2$

d) $42\pi \text{ cm}^2$

Answer: (C)

$$R = 4 \text{ cm}$$

$$r = 1 \text{ cm}$$

$$\text{Total surface area} = 2\pi (R^2+r^2) + \pi(R^2 - r^2)$$

$$= 2 \times 22/7(16+1) + 22/7(16 - 1)$$

$$= 34\pi + 15\pi = 49\pi \text{ cm}^2$$

17. A $\frac{3}{4}$ filled tank became $\frac{1}{2}$ filled after draining 32 liter. Find the capacity of tank?

a) 108 liter

b) 112 liter

c) 120 liter

d) 128 liter

Answer: (D)

Let the capacity of tank = x.

$$\therefore 3x/4 - x/2 = 32$$

$$x/4 = 32$$

$$x = 32 \times 4 = 128 \text{ liter}$$

18. A jet ski goes upstream at a speed of 48 km/hr and comes back the same distance at 80 km/hr. Find the average speed (in km/hr) for the total journey.

a) 64

b) 62

c) 66

d) 60

Answer: (D)

$$\text{Average speed} = (2 \times \text{upstream} \times \text{downstream}) / (\text{upstream} + \text{downstream})$$

$$= (2 \times 48 \times 80) / (24+40) = 60 \text{ km/hr}$$

19. Ramesh is 25% more efficient than Mayank and Mayank is 20% less efficient than Sanjay. If wages of a work done by all three is Rs. 980, then find the share of the Mayank.

a) Rs 560

b) Rs 350

c) Rs 510

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d) Rs 280

Answer: (D)

Let the efficiency of Rajesh = 100

Efficiency of Mayank = $100 \times 80/100 = 80$

Efficiency of Ramesh = $80 \times 125/100 = 100$

\therefore R: M: S = 100: 80: 100 = 5 : 4: 5

So, Mayank's share = $4/14 \times 980 = 280$

20. The product of any two even consecutive numbers should be divisible by

- a) 8
- b) 12
- c) 16
- d) 24

Answer: (A)

Product of any two even consecutive numbers is divisible by 8

21. Selling price of 9 articles is equal to cost price of 15 article. Find the profit / loss%

- a) $33 \frac{2}{3}$ % profit
- b) $66 \frac{2}{3}$ % profit
- c) 25% profit
- d) 20% profit

Answer: (B)

$9 \times S.P = 15 \times C.P$

$S.P/C.P = 15/9 = 5/3$

Profit % = $2/3 \times 100 = 66 \frac{2}{3}$ %

22. The value of $3.8 + (8.2 \div 4.1 \times 2) - 4 \times 3 \div 1.2$

- a) -2.2
- b) 1.2
- c) 2.2

d) -1.2

Answer: (A)

$= 3.8 + (8.2 \div 4.1 \times 2) - 4 \times 3 \div 1.2$

$= 3.8 + (2 \times 2) - 4 \times 3/1.2$

$= 3.8 + 4 - 10$

$= 7.8 - 10$

$= -2.2$

23. If an 11-digit number $5y5884805x6$ is divisible by 72, then the value of $\sqrt{(xy)}$ is:

- a) $\sqrt{7}$
- b) 3
- c) $2\sqrt{7}$
- d) 7

Answer: (D)

11 digit numbers $5y5884805x6$ is divisible by 72, so we can say number also divisible by both 8 and 9

Divisibility law of 8 = A number divisible by 8 if its last three digit is divisible by 8

Divisibility law of 9 = A number is divisible by 9 if sum of its digit is divisible by 9

$= 5y5884805x6$ is divisible by 8 if $x = 7$

$= 5y588480576$ is divisible by 9 if $y = 7$

$= \sqrt{(xy)} = \sqrt{(7 \times 7)} = 7$

24. What is the value of $[(\sin 59^\circ \cos 31^\circ + \cos 59^\circ \sin 31^\circ) \div (\cos 20^\circ \cos 25^\circ - \sin 20^\circ \sin 25^\circ)]?$

- a) $1/\sqrt{2}$
- b) $2\sqrt{2}$
- c) $\sqrt{3}$
- d) $\sqrt{2}$

Answer: (D)

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$$(\sin 59^\circ \cos 31^\circ + \cos 59^\circ \sin 31^\circ) / (\cos 20^\circ \cos 25^\circ - \sin 20^\circ \sin 25^\circ)$$

$$\sin(A+B) = \sin A \cos B + \cos A \sin B$$

$$\cos(A+B) = \cos A \cos B - \sin A \sin B$$

$$(\sin(59 + 31)) / (\cos(20 + 25)) = \sin 90^\circ / \cos 45^\circ = \sqrt{2}$$

25. The ratio of boys and girls in a group is 7 : 6.

If 4 more boys join the group and 3 girls leave the group, then the ratio of boys to girls becomes 4 : 3.

What is the total number of boys and girls initially in the group?

a) 104

b) 91

c) 78

d) 117

Answer: (A)

The ratio of boys and girls in a group is = $7x : 6x$

According to the question

$$(7x + 4) / (6x - 3) = 4/3$$

$$= 3(7x + 4) = 4(6x - 3)$$

$$= 21x + 12 = 24x - 12$$

$$= 24x - 21x = 12 + 12$$

$$= 3x = 24$$

$$= x = 24/3 = 8$$

∴ Number of boys and girls in the group were = $7x +$

$$6x = 13x = 13 \times 8 = 104$$

26. If 5 divided the integer n, the remainder is 2.

What will be remainder if $7n$ is divided by 5?

a) 3

b) 4

c) 1

d) 2

Answer: (B)

Let $n = 7$, then condition satisfied.

$$\text{Hence, } 7n = 7 \times 7 = 49$$

Now, $49 \div 5$, then remainder is 4.

27. Solve the following expression.

$$11 + 11 \times 11 - 11 \div 11$$

a) 121

b) 22

c) 11

d) 131

Answer: (D)

$$11 + 11 \times 11 - 11 \div 11$$

$$= 11 + 121 - 1$$

$$= 131$$

28. If the variance of a series is 1444. Find the Standard deviation of that series.

a) 1400

b) 1050

c) 38

d) 45

Answer: (C)

$$\text{Variance} = 1444$$

$$\text{Standard deviation} = \sqrt{1444} = 38$$

29. What will be the total cost of Polishing the curved surface of a wooden cylinder, if its radius is 18 cm and height is 14 cm. cost of polishing is Rs.25 per cm^2 .

a) Rs.22000

b) Rs.44000

c) Rs.17600

d) Rs.39600

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Answer: (D)

Curved surface area of Cylinder = $2\pi rh = 2 \times 22/7 \times 18 \times 14$

Cost of polishing = $1584 \times 25 = \text{Rs.}39600$

30. What will be the difference in compound interest on a sum of Rs. 7,800 at 8% for 1 year, when the interest is paid yearly and half-yearly?

- a) Rs. 29.18
- b) Rs. 19.46
- c) Rs. 12.48
- d) Rs. 24.72

Answer: (C)

Interest rate for 1 year when interest compounded yearly = 8%

Interest rate for 1 year when interest compounded half-yearly = $8/2 = 4\%$

Total interest rate for at the end of the year when interest compounded half-yearly

$$4 + 4 + (4 \times 4)/100 = 8 + 0.16 = 8.16\%$$

Hence, Difference of rate = $8.16 - 8 = 0.16\%$

Now, 0.16% of 7800

$$= 7800 \times 16/10000$$

$$= 12.48$$

General Knowledge

1) Which state got GI tag for Rasgulla in the year 2017?

- a) Bihar
- b) Karnataka
- c) West-Bengal
- d) Uttar Pradesh

Answer: D

On 14 November 2017, the GI Registry of India granted West Bengal the GI status for Banglar Rasogolla.

2) When was Hampi included in UNESCO World Heritage Sites?

- a) 1986
- b) 1985
- c) 1988
- d) 1991

Answer: A

In 1986, Hampi was declared a World Heritage site by UNESCO.

3) The Kakori Conspiracy, which was a train robbery took place between Kakori and Lucknow in which year?

- a) 1919
- b) 1925
- c) 1929
- d) 1931

Answer: B

The Kakori Conspiracy was a train robbery that took place between Kakori and, near Lucknow, on 9 August 1925 during the Indian Independence Movement against the British Indian Government. The robbery was organised by Hindustan Republican Association (HRA). The robbery was conceived by Ram Prasad Bismil and Ashfaquallah Khan who belonged to the HRA.

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4) Where is the Konark Sun Temple located?

- a) Odisha
- b) Andhra Pradesh
- c) Kerala
- d) Madhya Pradesh

Answer: A

Konark Sun Temple is located in the eastern State of Odisha near the sacred city of Puri. It is dedicated to the sun God or Surya.

5) Where is the Gateway of India?

- a) Chennai, Tamil Nadu
- b) Mumbai, Maharashtra
- c) Thiruvananthpuram, Kerala
- d) Bhopal, Madhya Pradesh

Answer: B

The Gateway of India is an arch-monument built in the early twentieth century in the city of Mumbai, in the Indian state of Maharashtra. It was erected to commemorate the landing in December 1911 at Apollo Bunder, Mumbai of King-Emperor George V and Queen-Empress Mary, the first British monarch to visit India.

6) When was Gurunank Dev born?

- a) 29 December 1461
- b) 21 August 1468
- c) 29 November 1469
- d) 29 March 1465

Answer: C

Guru Nanak, also referred to as Baba Nanak, was the founder of Sikhism and is the first of the ten Sikh Gurus. He was born on 29 November 1469.

7) What is bone to bone connection tissue called?

- a) Cartilage
- b) Ligaments
- c) Blood
- d) Blood vessels

Answer: B

Ligament is a short band of tough, flexible fibrous connective tissue which connects two bones or cartilages or holds together a joint. It is a membranous fold that supports an organ and keeps it in position.

8) Where is Ajanta and Ellora caves located?

- a) Madhya Pradesh
- b) Maharashtra
- c) Kerala
- d) Jharkhand

Answer: B

Ellora and the Ajanta Caves is a UNESCO World Heritage Site located in the Aurangabad district of Maharashtra.

9) What is the capital of Italy?

- a) Manama
- b) Brasilia
- c) Sofia

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d) Rome

Answer: D

Rome is the capital city and a special comune of Italy, as well as the capital of the Lazio region. The city has been a major human settlement for almost three millennia.

10) The loudness of the sound is measured in terms of _____?

- a) Metres
- b) Decibel
- c) Pitch
- d) Hertz

Answer: B

Loudness of sound is measured in decibels (dB). This is actually a measure of intensity, which relates to how much energy the pressure wave has. Decibels are a relative measurement. They relate the intensity of a pressure wave to a normal or standard pressure.

11) Which organ has finger like outgrowths which are called as 'Villi'?

- a) Small intestine
- b) Large intestine
- c) Gall-Bladder
- d) Stomach

Answer: A

Villi, the singular of which is villus, are finger-like projections in the small intestine. The primary function of the villi in the small intestine is to increase

the absorption of nutrients from food passing through the small intestine.

12) When was WTO established?

- a) January 1, 1995
- b) January 1, 1991
- c) January 1, 1993
- d) January 1, 1998

Answer: A

The World Trade Organization is an intergovernmental organization that is concerned with the regulation of international trade between nations. It was established on 1 January 1995.

13) When was the first census taken in India?

- a) between 1865 and 1872
- b) between 1864 and 1877
- c) between 1868 and 1875
- d) between 1866 and 1872

Answer: A

A systematic and modern population census, in its present form was conducted non synchronously between 1865 and 1872 in different parts of the country.

14) Which among the following Governor-General founded the Asiatic society of Bengal with William Jones in 1784?

- a) Sir John Shore
- b) Warren Hastings
- c) Lord Amherst

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d) Lord Auckland

Answer: B

Warren Hastings founded the Asiatic society of Bengal with William Jones in 1784. The Asiatic Society was founded by civil servant Sir William Jones on 15 January 1784 in a meeting presided over by Sir William Jones, Justice of the Supreme Court of Judicature at Fort William at the Fort William in Calcutta, then capital of the British Raj, to enhance and further the cause of Oriental research.

15) Sariska National Park is in which Indian state?

- a) Gujarat
- b) Rajasthan
- c) Madhya Pradesh
- d) Uttarakhand

Answer: B

Sariska Tiger Reserve is a tiger reserve in Alwar district, Rajasthan, India. It was given the status of a tiger reserve making it a part of India's Project Tiger in 1978 and the wildlife sanctuary was declared a national park in 1990.

16) Who has the power of converting a "bill" into an "act"?

- a) Prime Minister
- b) President
- c) Home Minister
- d) Chief Justice

Answer: B

In the case of a Money Bill or a Bill passed at a joint sitting of the Houses, the Lok Sabha Secretariat obtains assent of the President. The Bill becomes an Act only after the President has given assent to it.

17) "Bahurupi Gandhi" has been authored by whom?

- a) Anu Bandopadhyaya
- b) Indira Goswami
- c) Nalini Priyadarshni
- d) Meghna Pant

Answer: A

"Bahurupi Gandhi" has been authored by Anu Bandopadhyaya.

18) Who is 16th Loksabha Speaker?

- a) Meira Kumar
- b) Somnath Chatterjee
- c) Sumitra Mahajan
- d) Om Birla

Answer: C

Sumitra Mahajan was elected as 16th Lok Sabha Speaker on 6 June 2014 and M Thambidurai was elected as Deputy Speaker on 13 August 2014.

19) Study of Animals is known as _____?

- a) Endocrinology
- b) Agrology
- c) Botany
- d) Zoology

Answer: D

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Zoology is the branch of biology devoted to the study of animal life. It covers areas ranging from the structure of organisms to the subcellular unit of life.

20) The Gulf of Kutch is located in which Indian state?

- a) Goa
- b) Uttar Pradesh
- c) Gujarat
- d) Himachal Pradesh

Answer: C

The Gulf of Kutch is situated in Saurashtra in the western State of Gujarat in India. The region is an arid peninsula.

21) Which of the following book was written by Arundhati Roy?

- a) The Ministry of Utmost Happiness.
- b) From Possession to Freedom
- c) Whispers of Time
- d) Making of New India

Answer: A

The Ministry of Utmost Happiness is the second novel by Indian writer Arundhati Roy, published in 2017, twenty years after her debut, The God of Small Things.

22) What is the name of the process that converts sugar to alcohol?

- a) Sedimentation
- b) Filtration

- c) Sedimentation
- d) Alcoholic fermentation

Answer: D

Alcoholic fermentation is a complex biochemical process during which yeasts convert sugars to ethanol, carbon dioxide, and other metabolic byproducts that contribute to the chemical composition and sensorial properties of the fermented foodstuffs.

23) What is the minimum age to become a Panchayat member?

- a) 25 years
- b) 30 years
- c) 21 years
- d) 35 years

Answer: C

The minimum age limit for a person to be a member of the Panchayat Samiti is 21 years. It is the local government body at the tahsil level in the India.

24) Jal Kranti Abhiyan was started in which year?

- a) 2014
- b) 2017
- c) 2012
- d) 2015

Answer: D

Jal Kranti Abhiyan was launched on June 05, 2015 to consolidate water conservation and management in the country through a holistic and integrated

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approach involving all stakeholders making it a mass movement.

25) Asia's first nuclear reactor was established in _____.

- a) Mumbai
- b) Gandhinagar
- c) Indore
- d) Chennai

Answer: A

Apsara is the oldest of India's research reactors established in Mumbai. The reactor was designed by the Bhabha Atomic Research Center (BARC) and built with assistance from the United Kingdom.

26) Who among the following has won Booker prize in 2020?

- a) Anna Burns
- b) Douglas Stuart
- c) Paul Beatty
- d) Marlon James

Answer: B

Douglas Stuart has won the Booker Prize for Shuggie Bain, his debut novel about a boy in 1980s Glasgow trying to support his mother as she struggles with addiction and poverty.

27) What is the full form of NIC?

- a) National Informatics Centre
- b) National Information Centre
- c) Nation Informative Centre

d) National Information Code

Answer: A

The National Informatics Centre is an attached office under the Ministry of Electronics and Information Technology in the Indian government. The NIC provides infrastructure to help support the delivery of government IT services and the delivery of some of the initiatives of Digital India.

28) Emperor Nader Shah invaded India in _____.

- a) March 1739
- b) March 1735
- c) March 1744
- d) March 1741

Answer: A

Emperor Nader Shah, the Shah of Persia and the founder of the Afsharid dynasty of Persia, invaded Northern India, eventually attacking Delhi in March 1739.

29) Which among the following is the deepest point on Earth?

- a) Puerto Rico Trench
- b) Tonga Trench
- c) Mariana Trench
- d) Kermadec Trench

Answer: C

Mariana Trench located in the western Pacific Ocean, is considered to be the deepest part of the Earth's surface.

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30) Who is the Father of White Revolution in India?

- a) Nirpakh Tutej
- b) Verghese Kurien
- c) M.S. Swaminathan
- d) Vishal Tewari

Answer: B

Verghese Kurien is known as the "Father of the White Revolution" in India. His Operation Flood made dairy farming India's largest self-sustaining industry and the largest rural employment sector providing a third of all rural income.

31) Vande Mataram was first sung in which Indian national Congress?

- a) 1896, Kolkata
- b) 1888, Allahabad
- c) 1916, Lucknow
- d) 1889, Bombay

Answer: A

The song Vande Mataram, composed in Sanskrit by Bankimchandra Chatterji, was a source of inspiration to the people in their struggle for freedom. The first political occasion when it was sung was the 1896 session of the Indian National Congress in Kolkata.

32) What is the chemical formula of Sugar?

- a) CH_3COOH
- b) $\text{C}_6\text{H}_{12}\text{O}_6$
- c) CHCl_3
- d) $\text{C}_2\text{H}_5\text{OH}$

Answer: B

Glucose is a simple sugar with six carbon atoms and one aldehyde group. This monosaccharide has a chemical formula $\text{C}_6\text{H}_{12}\text{O}_6$. It is also known as dextrose.

33) The Moplah Rebellion of 1921 took place in_____.

- a) Kerala
- b) Gujarat
- c) Karnataka
- d) Odisha

Answer: A

The Moplah Rebellion in 1921-1922 happened in Malabar region of Kerala, India. The rebellion was primarily a peasant revolt against oppressive authorities. There were a series of clashes between the Mappila peasantry and their landlords, supported by the British, throughout the 19th and early 20th centuries.

34) How many nuclear reactors are there in India till November,2020?

- a) 22
- b) 20
- c) 25
- d) 32

Answer: A

India has 22 nuclear reactors in operation in 7 nuclear power plants, with a total installed capacity of 6,780 MW.

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35) Who among the following is the Father of Physics?

- a) Isaac Newton
- b) Aristotle
- c) Albert Einstein
- d) Ronald Fisher

Answer: A

Isaac Newton is the Father of Physics. He developed the three laws of motion which form the basic principles of modern physics.

36) Which mission envisaged the establishment of a constituent assembly to frame the constitution as well as an interim government?

- a) Wavell plan ,1945
- b) Mountbatten plan ,1947
- c) Cabinet Mission plan ,1946
- d) None of these

Answer: C

The Cabinet Mission ,1946 envisaged the establishment of a Constituent Assembly to frame the Constitution as well as an interim government. The Muslim League accepted the plan, but it was partially accepted by the Congress.

37) Who is the inventor of Modern mercury thermometer?

- a) Daniel Gabriel Fahrenheit
- b) Anders Celsius
- c) Benjamin Franklin

d) Peter Henlein

Answer: A

The modern mercury thermometer was invented in 1709 by Daniel Gabriel Fahrenheit. It was an enclosed glass tube that had a numerical scale, called the Fahrenheit scale.

38) Who among the following was not involved in the Kakori incident?

- a) Ram Prasad Bismil
- b) Ashfaqullah Khan
- c) Lokmanya Tilak
- d) Both a and c

Answer: C

The Kakori Conspiracy was a train robbery that took place between Kakori and, near Lucknow, on 9 August 1925 during the Indian Independence Movement against the British Indian Government. The robbery was organised by Hindustan Republican Association (HRA). The robbery was conceived by Ram Prasad Bismil and Ashfaqullah Khan who belonged to the HRA.

39) Which term refers to the ability of an operating system to perform more than one computer task over a certain period of time?

- a) Streamlining
- b) Multiuser
- c) Multitasking
- d) Simulation

Answer: C

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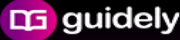
Multitasking refers to the simultaneous performance of multiple tasks and processes by hardware, software or any computing appliance. It enables the performance of more than one computer process at the same time with minimal lag in overall performance and without affecting the operations of each task.

40) National waterways 1 connect which two places?


- a) Prayagraj-Haldia
- b) Sadiya-Dhubri
- c) Kollam-Kozhikode
- d) Alappuzha-Changanassery

Answer: A

The National Waterway 1 or Ganga-Bhagirathi-Hooghly river system is located in India and runs from Haldia (Sagar) to Prayagraj across the Ganges, Bhagirathi and Hooghly river systems.



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