

SSC CGL 13th August 2021 Shift-2



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1. In which of the following states is the Rowa Wildlife Sanctuary situated?

A Tripura

B Haryana

C Punjab

D Assam

Solution

- The Rowa Wildlife Sanctuary is situated in the Panisagar Sub-division of North Tripura district.
- Tripura is also comprised of another Wildlife Sanctuary situated in Rajbari National Park.

2. **Veer Surendra Sai was a freedom fighter from:**

A Odisha

B Telangana

C Nagaland

D Sikkim

Solution

- Veer Surendra Sai was a Freedom Fighters of Sambalpur, Odisha.
- His life's timeline: 23 January 1809-28 February 1884.
- He sacrificed his life fighting against the British East India Company.
- He died in Asirgarh Jail on 28 February 1884.

3. Who among the following persons was elected as the Vice President of Asia Pacific Broadcasting Union in December 2020?

A Rakesh Mohan

B Hemant Pandey

C Bina Agarwal

D Shashi Shekhar Vempati

Solution

- Shashi Shekhar Vempati was elected as the Vice President of Asia Pacific Broadcasting Union (ABU) in December 2020 for three years.
- The Asia-Pacific Broadcasting Union was founded in 1964.
- It is a non-profit, professional association of broadcasting organizations.
- Currently, it comprises over 280 members in 57 countries and regions.

4. The Mysore Palace was the residence of the

A Palas

B Wodeyars

C Chandelas

D Bundelas

Solution

- The Mysore Palace is also known as Mysuru Palace.
- It is a historical place and the Royal Residence at Mysore in the Indian state of Karnataka.
- It was established in 1912 although started built-in 1897.

5. Pattachitra art form is dedicated to which Lord in Hindu mythology?

A Lord Jagannath

B Lord Ganesha

C Lord Shiva

D Lord Brahma

Solution

- Pattachitra art has been majorly inspired by the Lord Jagannath who is considered as the incarnation of Lord Krishna.
- It is a general term for traditional cloth-based scroll painting, based in the eastern states of India like Odisha and West Bengal.
- It is known for its intricate details as well as mythological narratives and folktales inscribed in it.

6. In which of the following years was the Mughal empire established by Babur?

A 1699

B 1526

C 1578

D 1634

Solution

- Babur founded the Mughal Dynasty in the 16th century by conquering Northern India from Kabul as his base.
- Babur was a warrior chieftain from which is now known as Uzbekistan, who defeated Ibrahim Lodhi, the Sultan of Delhi in the first battle of Panipat.
- Babur ruled for 4 years; 1526-1530.
- Mughal Dynasty ruled till 1720.

7. Mizoram has started 'Love Brigade' scheme to fight against which of the following diseases in December 2020?

A Syphilis

B HIV/AIDS

C Chlamydia

D Gonorrhoea

Solution

- On World AIDS Day MSACS (Mizoram State AIDS Control Society) launched this campaign with a fleet of 500 bikes and taxis.
- Collaborating partners: AIDS Healthcare Foundation (AHF) and Taxi Association, Mizoram.
- "Love condoms" the condoms which will be kept in the back pocket of the front seat with the little flap.

8. **Lakshya Sen is associated with which of the following sports?**

A Table tennis

B Basketball

C Badminton

D Lawn tennis

Solution

- Lakshya Sen, born in Almora on 16 August 2001 is an Indian badminton player.
- He belongs to a badminton family, His brother; Chirag Sen, is also an international badminton player.
- His father D. K. Sen, is a coach in India.

9. Who among the following was appointed as the Chief Executive of the health insurance scheme 'Ayushman Bharat' by the National Health Authority in January 2021?

A Rama Mohan Rao Amara

B Anil Ladha

C RS Sharma

D Sanjeev Kumar

Solution

- Ram Sewak Sharma is a former Indian bureaucrat.
- He was the first Director-General of the Unique Identification Authority of India and was subsequently appointed as the Chairman of the Telecom Regulatory Authority of India (TRAI).
- He was appointed as the CEO of the National Health Authority of India which administers the Ayushman Bharat Yojana health protection scheme.

10. With which of the following sports is Ruia Gold Cup associated?

A Bridge

B Water polo

C Badminton

D Swimming

Solution

Bridge

- Basalat Jha Trophy.
- Holkar Trophy.
- Ruia Gold Cup.
- Singhania Trophy.

11. **Who among the following was appointed as the Managing Director and Chief Executive Officer of SBI Cards and Payment Services Ltd. in January 2021?**

A Rajnish Kumar

B Ashwini Kumar Tewari

C Swaminathan Janakiraman

D Rama Mohan Rao Amara

Solution

Rama Mohan Rao Amara was appointed as the MD and CEO of SBI Card. His appointment is with effect from 30 January 2021 for a period of two years.

12. Which of the following Articles of the Constitution of India states that there will be a Vice-President of India?

A Article 75

B Article 56

C Article 45

D Article 63

Solution

- Article 63 of the Indian Constitution states that "There shall be a vice president of India."
- The vice president acts as president in the absence of the president due to death, resignation, impeachment, or other situations.
- The vice president of India is also ex officio chairperson of the Rajya Sabha.

13. With what do you divide thrust in a liquid to obtain the value of pressure?

A Mass

B Density

C Volume

D Area

Solution

- Mass is defined as the amount of matter in a substance.
- Density is defined as the ratio of the mass per unit volume.
- Volume is defined as the quantity of three-dimensional space occupied by a liquid, solid, or gas.

14. With which of the following countries did India sign an agreement in February 2021 for the construction of Lalandar (Shatoot) Dam?

A Australia

B Japan

C Afghanistan

D Brazil

Solution

- The Lalander (Shatoot) Dam agreement is signed between India and Afghanistan.
- It costs nearly \$ 300 million, is a part of the New Development Partnership between India and Afghanistan.

15. Which of the following is NOT used to make toothpaste?

A Galena

B Silica

C Limestone

D Aluminium Oxide

Solution

- Galena is NOT used to make toothpaste.
- Galena is the most important ore of lead. Silver is often produced as a by-product. Most lead is consumed in making batteries, however, significant amounts are also used to make lead sheets, pipes, and shots.
- It is also used to make low-melting-point alloys.
- Galena has a cubic lattice structure and is also a source of silver. The lead-in Galena is toxic if inhaled or ingested from dust particles, but the mineral or rock containing the mineral can be handled safely if there is no lead dust present.

16. A channel of canal where water is forced to flow against the slope of land by upliftment is called

A Groundwater table

B Warabandi system

C Lift channel

D Flow channel

Solution

- A channel of the canal where water is forced to flow against the slope of land by upliftment is called a Lift channel.
- When the main source is at a lower level than the supply level. Then water is supplied through some mechanical means. This is known as lift irrigation.
- Lift irrigation is a method of irrigation in which water instead of being transported by natural flow (as in gravity-fed canal systems) requires external energy through fuel-based, or electric power using pumps or other mechanical means.

17. An elastic wave generated by an impulse such as an earthquake or an explosion is called

A tectonic shift

B epicentre

C seismic wave

D sound wave

Solution

- An elastic wave generated by an impulse such as an earthquake or an explosion is called a seismic wave.
- Seismic waves are waves of energy that travel through Earth's layers and are a result of earthquakes, volcanic eruptions, magma movement, large landslides, and large man-made explosions that give out low-frequency acoustic energy.
- Earthquakes are usually caused when the underground rock suddenly breaks and there is rapid motion along a fault. This sudden release of energy causes seismic waves that make the ground shake.

18. Who among the following was the founder of Homeopathy?

A FG Hopkins

B Selman Waksman

C Samuel Hahnemann

D Robert Koch

Solution

- Homeopathy, the longest established alternative medicine to come out of Europe, was created in 1796 by Samuel Hahnemann.
- Christian Friedrich Samuel Hahnemann was born on 10 April 1755 in Meissen, Saxony, and died on 2 July 1843.
- He was a German physician. He studied medicine and graduated MD at the University of Erlangen on 10 August 1779.
- Samuel Hahnemann contributed to reforming the medical practices of the 18th century by attributing the cause of disease to the internal

19. Which of the following states launched the SAANS (Social Awareness and Action to Neutralise Pneumonia Successfully) campaign in February 2021?

A Uttar Pradesh

B Odisha

C Madhya Pradesh

D Sikkim

Solution

- Madhya Pradesh state launched the SAANS (Social Awareness and Action to Neutralise Pneumonia Successfully) campaign in February 2021.
- The health department in Madhya Pradesh launched this campaign on 5 February 2021.
- The campaign was launched by the Hon'ble Health Minister Dr. Prabhuram Chaudhari, Mr. Mohammad Suleman (Additional chief Secretary GoM), Dr. Sanjay Goyal, Commissioner Health, Ms. Chhavi Bhardwaj (Mission Director, NHM, MP).
- The main purpose of the campaign is to reduce the death rate due to pneumonia among infants a strategy is being chalked out under the Social awareness campaign in which medical staff is being trained.

20. **Who among the following persons was announced as the brand ambassador for the BAFTA (British Academy of Film and Television Arts) 'Breakthrough Initiative' in November 2020?**

A Akshay Kumar

B AR Rahman

C Ajay Devgan

D Kuldeep Handoo

Solution

- AR Rahman was announced as the brand ambassador for the BAFTA (British Academy of Film and Television Arts) 'Breakthrough Initiative' in November 2020.
- The initiative, supported by Netflix, aims to identify, celebrate, and support up to five talents working in film, games, or TV in India.
- As part of BAFTA Breakthrough India, a jury of British and Indian industry experts will select five talents from across India to take part in the year-long mentoring and guidance program.

21. Who among the following wrote the novel 'Rangbhumi: The Arena of Life'?

A Abanindranath Tagore

B Mahatma Gandhi

C **Munshi Pemchand**

D Rabindranath Tagore

Solution

- Munshi Pemchand wrote the novel 'Rangbhumi: The Arena of Life'.
- Rangbhoomi (The Arena of Life) is a Hindi language novel by Premchand that features an idealist protagonist inspired by Gandhian values.
- In this novel of epic proportions set in pre-Independence India, Premchand treads the tricky ground of tensions between the rulers and the ruled.
- Capturing the travails and traumas of peasant society, Rangbhumi celebrates the unassailable spirit of the common man.

22. Who among the following assassinated Sir William Hutt Curzon Wyllie in London?

A Sukhdev Thapar

B Surya Sen

C Madan Lal Dhingra

D Khudiram Bose

Solution

- On 1 July 1909, in London Curzon Wyllie was assassinated by the Indian revolutionary Madan Lal Dhingra, who was a member of India House in London
- Sir William Hutt Curzon Wyllie was a British Indian army officer.
- Madan Lal Dhingra claimed that he had murdered Curzon-Wyllie as a patriotic act and in revenge for the inhumane killings of Indians by the British Government in India.

23. In which of the following temples will you find Gopurams?

A Shiva Temple, Chidambaram

B Bhabatarini Temple, Dakshineswar

C Dilwara Temple, Mount Abu

D Golden Temple, Amritsar

Solution

- Shiva Temple, Chidambaram will find Gopurams.
- A gopuram or gopura is a monumental entrance tower, usually ornate, at the entrance of a Hindu temple.
- Chidambaram Nataraja temple is a Hindu Temple dedicated to Lord Nataraja is one of the forms of Lord Shiva as the lord of the dance.
- This temple is located in Chidambaram, Tamil Nadu, India. This temple has ancient roots and a Shiva shrine existed at the site when the town was known as Thillai.

24. Which of the following Acts introduced federal features and provincial autonomy in the legislature and also made provisions for the distribution of legislative powers between the Centre and the provinces?

A The Government of India Act, 1858

B The Government of India Act, 1919

C The Government of India Act, 1935

D Indian Councils Act, 1909

Solution

- The Government of India Act, 1935 introduced federal features and provincial autonomy in the legislature and also made provisions for the distribution of legislative powers between the Centre and the provinces.
- The Government of India Act was passed by the British Parliament in August 1935 and came into effect in 1937 With 321 sections and 10 schedules.
- This was the longest act passed by British Parliament so far and was later split into two parts: Government of India Act 1935 and Government of Burma Act 1935.

25. Where is the corporate office of RBL Bank located?

A Srinagar

B Patna

C Mumbai

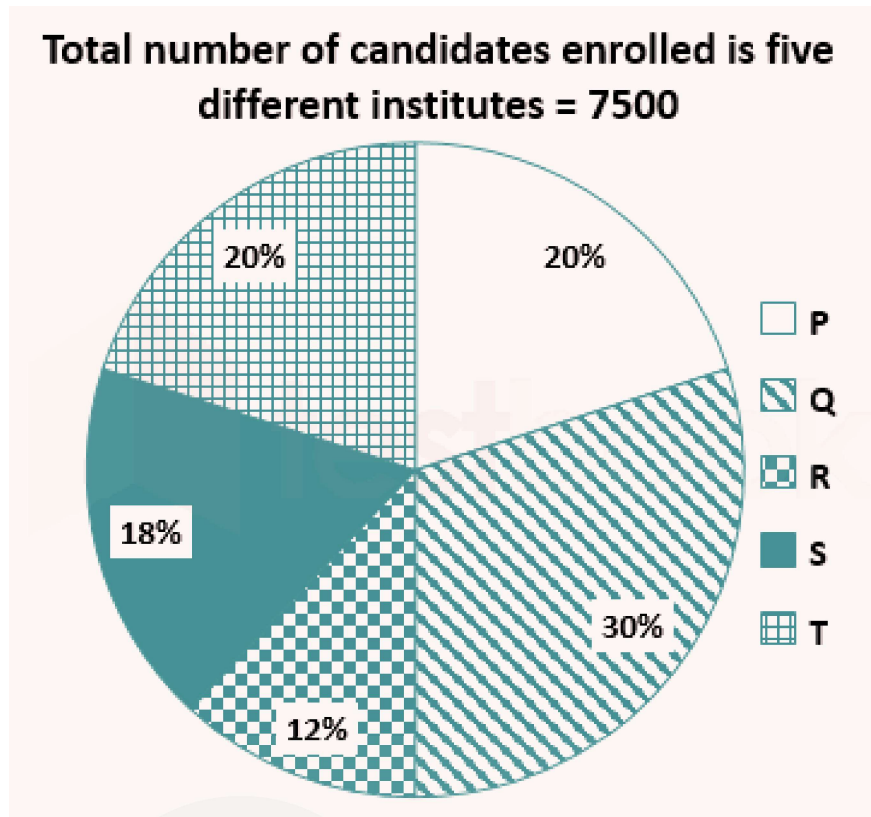
D Bengaluru

Solution

- RBL Bank, formerly known as Ratnakar Bank, is an Indian private sector bank headquartered in Mumbai.
- It was founded on 6th August 1943 with two branches in Kolhapur and Sangli founded by Babgonda Bhujgonda Patil from Sangli & Gangappa Siddappa Chougule from Kolhapur.
- RBL bank received the banking license from the Reserve Bank of India in the year 1970.
- In August 2014, the name of the bank was changed to RBL Bank Limited.

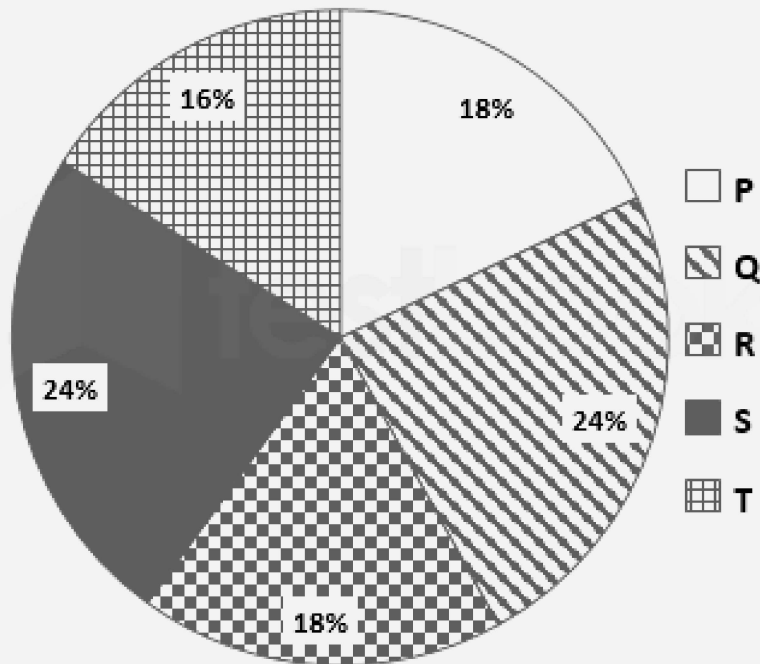
Study these pie graph and ans the given question.

The following pie charts represent the distribution of candidates who were enrolled for a competitive examination, and the candidates (out of those enrolled) who passed the exam from five different institutes P,Q, R, S and T.



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Total number of candidates passed the examination from five institutes = 4000



26. What is the ratio of the total number of candidates enrolled in institutes Q, R and S together, to the number of candidates passed from the institutes Q, R and S together?

A 15 : 71

B 75 : 44

C 71 : 15

D 44 : 75

Solution

The total number of candidates enrolled in institutes Q, R and S together =
(30% + 12% + 18%) of 7500

⇒ 60% of 7500

⇒ 4500

The total number of candidates passed from the institutes Q, R and S
together = (24% + 18% + 24%) of 4000

⇒ 66% of 4000

⇒ 2640

Required ratio = 4500 : 2640

⇒ 225 : 132

⇒ 75 : 44

⇒ Required ratio is 75 : 44

27. Radha saves 25% of her income. If her expenditure increases by 20% and her income increases by 29%, then her savings increase by;

A 56%

B 70%

C 52%

D 65%

Solution

Let the income of Radha is 100 unit

According to question

The present saving of Radha = $100 \times 25\%$

$\Rightarrow 25$ unit

The present expenditure of Radha = $100 - 25$

$\Rightarrow 75$ unit

Now,

The income increases by 29% and expenditure increases by 20%

Then

The new income = $100 + (100 \times 29\%)$

$\Rightarrow 100 + 29$

$\Rightarrow 129$ unit

The new expenditure = $75 + (75 \times 20\%)$

$\Rightarrow 75 + 15$

$\Rightarrow 90$ unit

The new saving = $129 - 90$

$\Rightarrow 39$ unit

The saving increases = $39 - 25$

$\Rightarrow 14$ unit

Increases percent of saving = $(14/25 \times 100)$

$\Rightarrow 56\%$

\therefore Her saving increases by 56%

28. Surbhi sold an article for Rs. 176 after giving 12% discount on its marked price. Had she not given any discount; she would have earned a profit of 25%. What is the cost price (in Rs.) of the article?

A 160

B 165

C 150

D 145

Solution

$$\text{Marked price} = 176 / [(100 - 12)/100]$$

$$\Rightarrow \text{Rs. } 200$$

According to question

$$\text{New discount} = 0\%$$

$$\text{Cost price} : 200 = (100 - 0) : (100 + 25)$$

$$\Rightarrow 200 \times 100/125$$

$$\Rightarrow \text{Rs. } 160$$

\therefore Cost price of the article is 160 .

29. In $\triangle ABC$, D and E are the points on sides AB and AC, respectively such that $\angle ADE = \angle B$. If $AD = 7$ cm, $BD = 5$ cm and $BC = 9$ cm, then DE (in cm) is equal to:

A 5.25

B 10

C 7

D 6.75

Solution

In $\triangle ABC$ and $\triangle ADE$

$\angle ADE = \angle ABC$ (Corresponding angles)

$\angle AED = \angle ACB$ (Corresponding angles)

So $\triangle ABC$ and $\triangle ADE$ are similar by AA property

$$AB = AD + BD$$

$$\Rightarrow AB = 7 + 5$$

$$\Rightarrow AB = 12 \text{ cm}$$

$$AD/AB = DE/BC$$

$$\Rightarrow 7/12 = DE/9$$

$$\Rightarrow DE = 63/12$$

$$\Rightarrow DE = 5.25$$

\therefore The value of DE is 5.25

30. The value of $\left(\frac{2 \sin^2 30^\circ \tan 60^\circ - 3 \cos^2 60^\circ \sec^2 30^\circ}{4 \cot^2 45^\circ - \sec^2 60^\circ} + \sin^2 60^\circ + \cos^2 90^\circ\right)$ is

A $\left(\frac{1}{30}(\sqrt{3}-2)\right)$

B $\left(\frac{2(\sqrt{3}+2)}{3}\right)$

C $\left(\frac{2(\sqrt{3}-2)}{3}\right)$

D $\left(\frac{1}{30}(\sqrt{3}+2)\right)$

Solution

$$\begin{aligned} & \frac{2 \sin^2 30^\circ \tan 60^\circ - 3 \cos^2 60^\circ \sec^2 30^\circ}{4 \cot^2 45^\circ - \sec^2 60^\circ} + \sin^2 60^\circ + \cos^2 90^\circ \\ &= \frac{2 \times \frac{1}{4} \times \sqrt{3} - 3 \times \frac{1}{4} \times 4}{4 \times 1 - 4 + 3} + \frac{3}{4} + 0 \\ &= \frac{2(\sqrt{3}-2)}{3} \end{aligned}$$

\therefore The value is $\left(\frac{2(\sqrt{3}-2)}{3}\right)$

31. If a five digit number $247xy$ is divisible by 3, 7 and 11, then what is the value of $(2y - 8x)$?

A 9

B 17

C 6

D 11

Solution

LCM of 3, 7, 11 is 231

According to question

Largest possible value of $247xy$ is 24799

when we divided 24799 by 231 we get 82 as a remainder

$$\text{Number} = 24799 - 82$$

$$\Rightarrow 24717$$

Now $x = 1$ and $y = 7$

$$(2y - 8x) = (2 \times 7 - 8 \times 1)$$

$$\Rightarrow (14 - 8)$$

$\Rightarrow 6$

\therefore Required value is 6.

32. The ratio of two numbers A and B is 5 : 8. If 5 is added to each of A and B, then the ratio of A and B becomes 2 : 3. The sum of A and B is?

A 65

B 91

C 78

D 42

Solution

- Let the two numbers be $5x$ and $8x$ respectively.

- When 5 is added to each number,

$$\Rightarrow (5x + 5)/(8x + 5) = 2/3$$

$$\Rightarrow (15x + 15) = (16x + 10)$$

$$\Rightarrow x = 5$$

- Now the sum of A and B = $(5 \times 5 + 8 \times 5)$

$$\Rightarrow (25 + 40)$$

$$\Rightarrow 65.$$

- \therefore The sum of A and B is 65.

33. If length of a rectangle is increased to its three times and breadth is decreased to its half, then the ratio of the area of given rectangle to the area of new rectangle is:

A 1 : 3

B 3 : 2

C 3 : 1

D 2 : 3

Solution

According to the question

Area of the rectangle = 1×2

New area of the rectangle = 3×1

Required ratio = 2 : 3

\therefore The ratio of the area of given rectangle to the area of new rectangle is 2 : 3

34. The value of $3 \div 18$ of $3 \times 6 - 22 \times 6 \div 18 - 3 \div 2 + 10 - 3 \div 9$ of 3×9 is-

A $1/3$

B $-1/3$

C $-1/2$

D $1/2$

Solution

$$\begin{aligned} & (3 \div 18 \text{ of } 3 \times 6 - 22 \times 6 \div 18 - 3 \div 2 + 10 - 3 \div 9 \text{ of } 3 \times 9) \\ & \Rightarrow 3 \div 54 \times 6 - 22 \times 6 \div 18 - 3 \div 2 + 10 - 3 \div 27 \times 9 \\ & \Rightarrow 1/3 - 22 \times 6 \div 18 - 3 \div 2 + 10 - 1 \\ & \Rightarrow 1/3 - 22 \times 6 \div 18 - 3 \div 2 + 9 \\ & \Rightarrow (-51 + 54) / 6 \Rightarrow 3 / 6 \Rightarrow 1 / 2 \end{aligned}$$

The value is $(1 / 2)$

35. If $(x-y=11)$ and $(\frac{1}{x}-\frac{1}{y}=\frac{11}{24})$ then the value of $(x^3-y^3+x^2y+y^2x)$?

A 1115

B 1331

C 1105

D 1307

Solution

$$(x^3-y^3+x^2y+y^2x)=(x-y)^3+3xy(x-y)+(x+y)^2$$

$$(\Rightarrow (11)^3+3(-24) \times 11+576)$$

$$(\Rightarrow 1331-792+576) (\Rightarrow 539+576)$$

$$(\Rightarrow 1115)$$

(=) The value of $(x^3-y^3+x^2y+y^2x)$ is 1115

36. Find the value of $\left(\frac{8 \sin 30^\circ \sin^2 60^\circ - 4 \sin 90^\circ - \sec^2 45^\circ}{\tan^2 45^\circ - \cot^2 30^\circ}\right)$

A $5/2$

B $-1/2$

C $3/4$

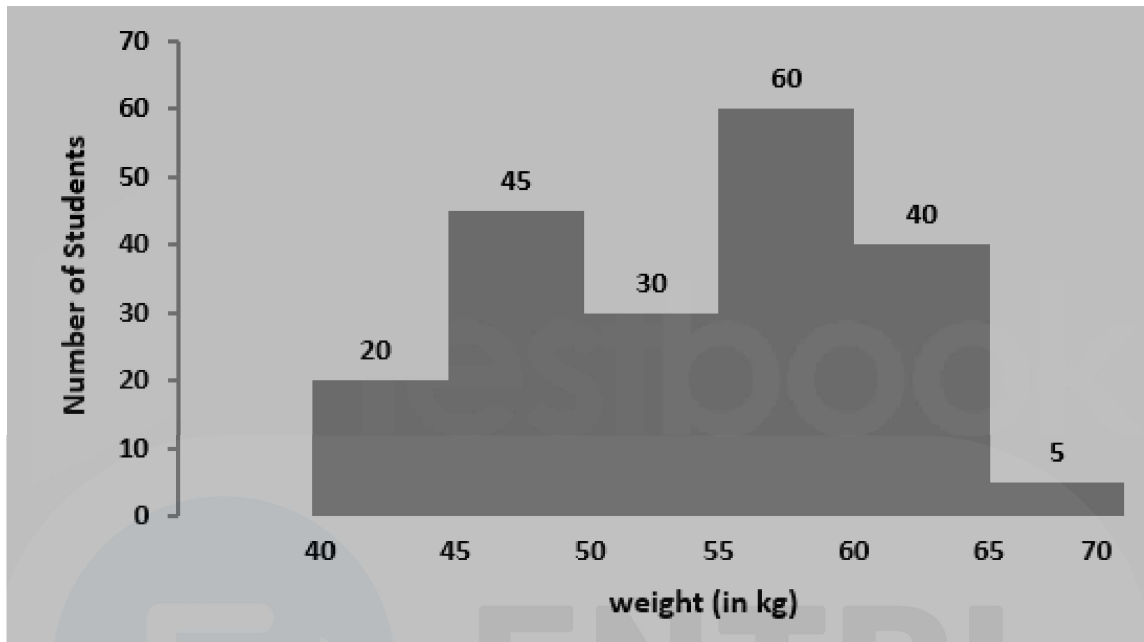
D $3/2$

Solution

$$\begin{aligned} & \frac{8 \sin 30^\circ \sin^2 60^\circ - 4 \sin 90^\circ - \sec^2 45^\circ}{\tan^2 45^\circ - \cot^2 30^\circ} \\ & \Rightarrow \frac{8 \times \frac{1}{2} \times \frac{3}{4} - 4 \times 1 - 2}{1 - \frac{1}{3}} \\ & \Rightarrow \frac{-3}{-2} \Rightarrow \frac{3}{2} \end{aligned}$$

\therefore Required value is $(3/2)$

37. The histogram shows the weights of students of class X in a school.



Let x be the number of students whose weight is less than 50 kg and y be the number of the students whose weight is greater than or equal to 60 kg. What is the value of $x : y$?

A 13 : 11

B 11 : 13

C 9 : 13

D 13 : 9

Solution

Let x be the number of students whose weight is less than 50 kg = $20 + 45$

$$\Rightarrow 65$$

Let y be the number of students whose weight is greater than or equal to

$$60 \text{ kg} = 40 + 5$$

$$\Rightarrow 45$$

Required ratio of x and y = $65 : 45$

$$\Rightarrow 13 : 9$$

\therefore The value of x and y is $13 : 9$

38. In a triangle ABC $AB : AC = 5 : 2$, $BC = 9$ cm. BA is produced to D, and the bisector of the Angle CAD meets BC produced at E. What is the length (in cm) of CE?

A 9

B 6

C 10

D 3

Solution

According to the given question

$$AB/AC = BE/CE$$

$$\Rightarrow 5/2 = (9 + CE)/CE$$

$$\Rightarrow 5CE = 18 + 2CE$$

$$\Rightarrow 3CE = 18$$

$$\Rightarrow CE = 6 \text{ cm}$$

\therefore The length of CE is 6.

39. If $(2 \cos^2 \theta = 3 \sin \theta, 0^\circ < \theta < 90^\circ)$, then the value of $(\sec^2 \theta - \tan^2 \theta + \cos^2 \theta)$ is:

A $7/4$

B $9/4$

C $5/4$

D $3/4$

Solution

$$(2 \cos^2 \theta = 3 \sin \theta)$$

$$(\Rightarrow 2(1 - \sin^2 \theta) = 3 \sin \theta)$$

$$(\Rightarrow 2 - 2 \sin^2 \theta = 3 \sin \theta)$$

$$(\Rightarrow 2 \sin^2 \theta + 3 \sin \theta - 2 = 0)$$

$$(\Rightarrow 2 \sin^2 \theta + 4 \sin \theta - \sin \theta - 2 = 0)$$

$$(\Rightarrow 2 \sin \theta (\sin \theta + 2) - (\sin \theta + 2) = 0)$$

$$(\Rightarrow (\sin \theta + 2)(2 \sin \theta - 1) = 0)$$

$$(\Rightarrow (\sin \theta + 2) = 0 \text{ or } (2 \sin \theta - 1) = 0)$$

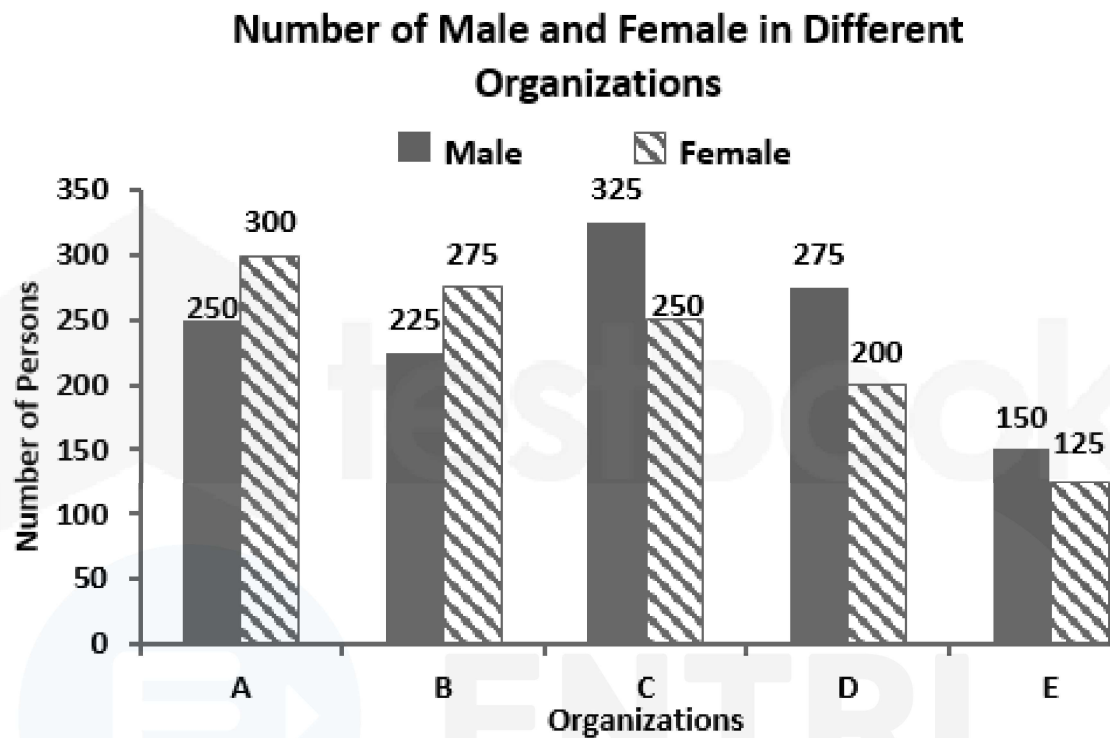
$$(\Rightarrow \sin \theta = -2 \text{ and } (\sin \theta = 1/2)$$

Putting the value of $(\theta = 30^\circ)$

According to the question
$$\begin{aligned} &\left(\sec^2 \theta - \tan^2 \theta + \cos^2 \theta\right) \Rightarrow 1 + \cos^2 \theta \\ &\Rightarrow 1 + \frac{3}{4} \Rightarrow \frac{7}{4} \end{aligned}$$

(\therefore) The value of $\left(\sec^2 \theta - \tan^2 \theta + \cos^2 \theta\right)$ is $\left(\frac{7}{4}\right)$.

40. Number of male and female members in different organizations A, B, C, D and E are given in the bar graph.



What is the ratio of average number of females in all the five organizations to the average number of males in all the five organizations?

A 49 : 46

B 51 : 49

C 49 : 51

D

46 : 49

Solution

Total number of males in all the five organizations = $(250 + 225 + 325 + 275 + 150)$

$\Rightarrow 1225$

Average number of males in all the five organizations = $1225/5 = 245$

Total number of females in all the five organizations = $(300 + 275 + 250 + 200 + 125)$

$\Rightarrow 1150$

Average number of females in all the five organizations = $1150/5 = 230$

Required ratio = $230 : 245$

$\Rightarrow 46 : 49$

\therefore The ratio of average number of females in all the five organizations to the average number of males in all the five organizations is $46 : 49$.

41. The rate of simple interest for first two years is 8% p.a., for the next 4 years, it is 10% p.a. and for the period beyond 6 years, it is 12% p.a. If a person gets Rs. 18358.60 as simple interest after 9 years, then how much money (in Rs.) did he invest?

A 19674

B 20087

C 19955

D 21075

Solution

Let the principal be P

For the first 2 years

$$SI = P \times 8 \times 2/100$$

$$\Rightarrow 4P/25$$

For the next 4 years

$$SI = P \times 4 \times 10/100$$

$$\Rightarrow 2P/5$$

For the next 3 years

$$SI = P \times 3 \times 12/100$$

$$\Rightarrow 9P/25$$

Total interest in 9 years = Rs. 18358.60

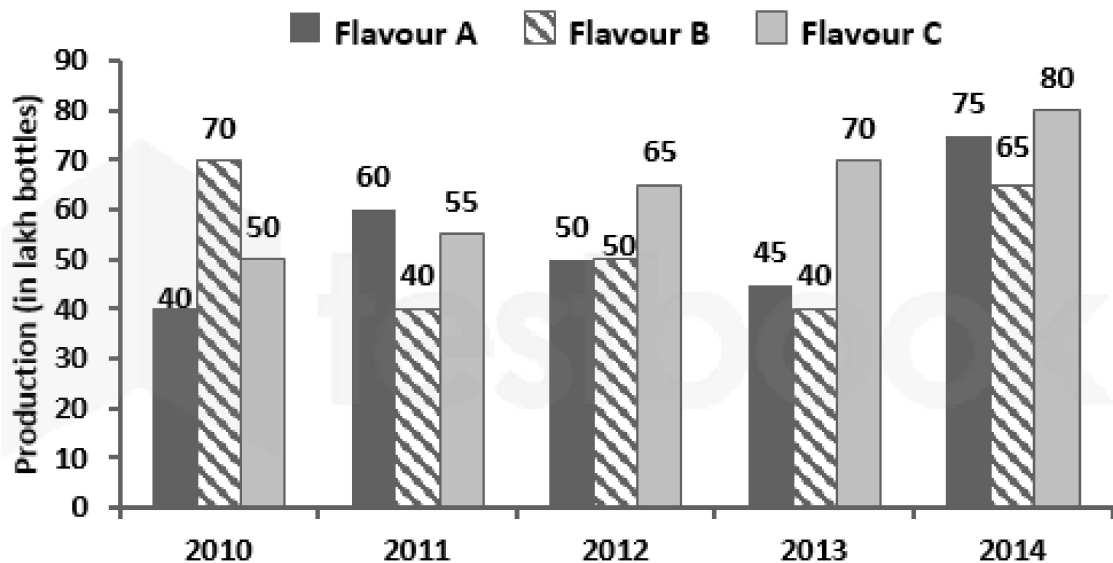
$$\Rightarrow (4P/25 + 2P/5 + 9P/25) = 18358.60$$

$$\Rightarrow 23P/25 = 18358.60$$

$$\Rightarrow P = 19955$$

\therefore The amount invested is Rs. 19955

42. Cough syrup of three different flavors - A, B and C (in lakh bottles) manufactured by a medicine company over a period of five years from 2010 to 2014 has been shown in the bar graph.



The ratio of the average production of all flavors in 2012 to the difference of the average production of flavor A in 2012, 2013 and 2014 and the average production of flavor C in 2012, 2013 and 2014 is:

A 15 : 26

B 3 : 11

C 11 : 3

D 26 : 15

Solution

The ratio of the average production of all flavors in 2012 = $(50 + 50 + 65)$
 $\Rightarrow 165$

Average production of all the flavors = $165/3 = 55$

The ratio of average production of flavor A in 2012, 2013 and 2014 = $(50 + 45 + 75)$

$\Rightarrow 170$

The average production of flavor A in 2012, 2013 and 2014 = $170/3 = 56.66$

The ratio of average production of flavor C in 2012, 2013 and 2014 = $(65 + 70 + 80)$

$\Rightarrow 215$

The average production of flavor C in 2012, 2013 and 2014 = $215/3 = 71.66$

Difference of the average production of flavor A in 2012, 2013 and 2014 and the average production of flavor C in 2012, 2013 and 2014 = $(71.66 - 56.66)$

$\Rightarrow 15$

required ratio = $55 : 15$

$\Rightarrow 11 : 3$

\therefore The ratio of the average production of all flavors in 2012 to the difference of the average production of flavor A in 2012, 2013 and 2014 and the average production of flavor C in 2012, 2013 and 2014 is $11 : 3$.

43. Eighteen persons working 8 hours a day can complete 3 units of work in 10 days. How many days are required by 25 persons to complete 5 units of work working 6 hours a day?

A 10

B 20

C 16

D 12

Solution

Work = Persons \times days \times hours \times 1/ units of work

$$\Rightarrow (18 \times 8 \times 10)/3 = (25 \times ? \times 6)/5$$

$$\Rightarrow 480 = 30?$$

$$\Rightarrow 16 = ?$$

\therefore 25 persons to complete 5 units of work working 6 hours is 16 days.

44. In a circle with centre O, AD is a diameter and AC is a chord. Point B is on AC such that $OB = 7$ cm and $\angle OBA = 60^\circ$. If $\angle DOC = 60^\circ$, then what is the length of BC (in cm)?

A 3.5

B 9

C 7

D 5

Solution

$AO = OC$ (Radius of the circle)

$$\Rightarrow \angle OAC = \angle OCA = (180^\circ - 120^\circ)/2 = 30^\circ$$

$$\Rightarrow \angle OBC = 180^\circ - 60^\circ = 120^\circ$$

$$\Rightarrow \angle BOC = (180^\circ - 120^\circ - 30^\circ)$$

$$\Rightarrow \angle BOC = \angle OCB = 30^\circ$$

In $\triangle BOC$,

$$OB = BC$$

$$\Rightarrow BC = 7 \text{ cm}$$

$$BC = 7 \text{ cm}$$

\therefore The length of BC is 7 cm.

45. In a class of 90 students 60% are girls and remaining are boys. Average marks of boys are 63 and that of girls are 70. What are the average marks of the whole class?

A 58.9

B 65.3

C 67.2

D 66.7

Solution

Number of girls in a class = $90 \times \frac{3}{5} = 54$

Number of boys in a class = $90 - 54 = 36$

According to question

Average marks of boys = $63 \times 36 = 2268$

Average marks of girls = $70 \times 54 = 3780$

Total marks of boys and girls = $(2268 + 3780)$

$\Rightarrow 6048$

Average marks of whole class = $(6048/90)$

$\Rightarrow 67.2$

\therefore The average marks of the whole class is 67.2.

46. If $(x - \frac{1}{x}) = 5, x \neq 0$, then what is the value of $(\frac{x^6 - 5x^3 - 1}{x^6 + 7x^3 - 1}) = ?$

A $(\frac{49}{45})$

B $(\frac{45}{41})$

C $(\frac{45}{49})$

D $(\frac{41}{45})$

Solution

$$\begin{aligned} x - \frac{1}{x} = 5 &\implies x^3 - \frac{1}{x^3} = 3 \times x \times \frac{1}{x} (x - \frac{1}{x}) = 15 \\ \implies x^3 - \frac{1}{x^3} = 15 \end{aligned}$$

Now, according to the question

$$\begin{aligned} \frac{x^6 - 5x^3 - 1}{x^6 + 7x^3 - 1} &\implies \frac{(x^3 - \frac{1}{x^3}) - 5}{(x^3 - \frac{1}{x^3}) + 7} \\ &\implies \frac{15 - 5}{15 + 7} \implies \frac{10}{22} \implies \frac{5}{11} \end{aligned}$$

(=) The value of $(\frac{x^6 - 5x^3 - 1}{x^6 + 7x^3 - 1})$ is $(\frac{5}{11})$

47. A 240 m long train overtakes a man walking at 6 km/h, in the same direction, in 9 seconds. How much time (in seconds) will it take to pass a 372 m long tunnel with the same speed?

A 20

B 21.6

C 18

D 20.4

Solution

Let the speed of train be x m/sec

Speed of the man = 6 km/h = $6 \times \frac{5}{18} = \frac{5}{3}$ m/sec

According to the question

$$240 = (x - \frac{5}{3}) \times 9$$

$$\Rightarrow 80 = (3x - 5)$$

$$\Rightarrow 85 = 3x$$

$$\Rightarrow x = \frac{85}{3} \text{ m/sec}$$

Now,

Distance = Total distance covered by train and Tunnel = $(240 + 372)$ m

$\Rightarrow 612$ m

Speed = Distance/Time

$\Rightarrow [612 / (85/3)]$

$\Rightarrow 21.6$ sec

\therefore Time taken to pass the long tunnel with a same speed is 21.6.

48. A shopkeeper sold two articles for Rs. 10591 each. On one he gained 19% and on the other he lost 11%. What was his overall gain or loss percent (correct to one decimal place)?

A Profit 1.8%

B Loss 2.7%

C Loss 10%

D Profit 5%

Solution

- SP of 2 articles = Rs. 10591.
- CP of first article = Rs. $(10591 \times 100/119)$
 \Rightarrow Rs. 8900.
- CP of second article = Rs. $(10591 \times 100/89)$
 \Rightarrow 11900.
- Total SP of both the article = $10591 \times 2 = 21182$
- Total CP of both the article = $8900 + 11900 = 20800$.
- Total Gain = $21182 - 20800 = 382$.

- Gain percentage = $(382/20800 \times 100)$

$\Rightarrow 1.83\%$.

- \therefore His overall Profit percentage is 1.8%.

49. ABCD is a cyclic quadrilateral. Diagonals BD and AC intersect each other at E. If $\angle BEC = 138^\circ$ and $\angle ECD = 35^\circ$, then what is the measure of $\angle BAC$?

A 133°

B 123°

C 113°

D 103°

Solution

$\angle BEC$ and $\angle CED$ are on the same straight lines

$$\angle BEC = 138^\circ$$

$$\angle CED = 180^\circ - 138^\circ$$

$$\Rightarrow \angle CED = 42^\circ$$

In $\triangle CDE$, $\angle CED = 42^\circ$ and $\angle DCE = 35^\circ$

$$\angle CDE = 180^\circ - (42^\circ + 35^\circ)$$

$$\angle CDE = 103^\circ$$

$\angle BAC$ and $\angle BDC$ are on the same arc BC

We know that In cyclic quadrilateral angles on the same arc are always same.

$$\angle BAC = 103^\circ$$

\therefore The measure of $\angle BAC$ is 103° .

50. If $(16x^2 + y^2 = 48)$ and $(x = 2, x, y > 0)$, then the value of $(64x^3 + y^3)$ is

A 340

B 240

C 320

D 300

Solution

$$\Rightarrow 16x^2 + y^2 = 48$$

$$\Rightarrow (4x)^2 + y^2 = 48$$

$$\Rightarrow (4x)^2 + y^2 + 8xy = 48 + 8xy \text{ [because } x = 2]$$

$$\Rightarrow (4x + y)^2 = 48 + 16$$

$$\Rightarrow (4x + y)^2 = 64 \Rightarrow (4x + y) = (8)$$

$$\Rightarrow 4x + y = 8$$

$$\text{By applying } (a+b)^3 = a^3 + b^3 + 3ab(a+b)$$

$$\Rightarrow (4x + y)^3 = 8^3$$

$$\Rightarrow 64x^3 + y^3 + 3(4x)(y)(4x + y) = 512$$

$$\Rightarrow 64x^3 + y^3 + (3 \times 8 \times 8) = 512$$

$$\Rightarrow 64x^3 + y^3 + 192 = 512$$

$$\Rightarrow 64x^3 + y^3 = 512 - 192$$

$$\Rightarrow 64x^3 + y^3 = 320$$

\(\therefore\) The value of $\left(64x^3 + y^3\right)$ is 320

51. Select the most appropriate synonym of the given word.

Prompt

A Gradual

B Quick

C Slow

D Lengthy

Solution

- The word 'Prompt' refers to something done without delay; immediate.
- Example: They've written back already - that was a very prompt reply.
- The synonyms of the word 'Prompt' are "quick, swift, rapid, speedy".
- Therefore we can say that the word 'Quick' is similar in meaning to the word 'Prompt'.

52. Select the **INCORRECTLY** spelt word.

A Sincere

B Grievance

C Liesure

D Seize

Solution

- The correct spelling of the selected word is 'Leisure'.
- The word 'Leisure' (noun) refers to the time when you are free from work or other duties and can relax.

53. Select the **INCORRECTLY** spelt word.

A Borrow

B Allowance

C Alottment

D Terrorism

Solution

- The correct spelling of the selected word is 'Allotment'.
- The word 'Allotment' (noun) means the process of sharing something, or the amount that you get.

54. Select the most appropriate **ANTONYM** of the given word.

Hope

A Chance

B Courage

C Doubt

D Optimism

Solution

- The word 'Hope' means to want something to happen or to be true, and usually have a good reason to think that it might
- Example: I'm hoping for an interview next week.
- The antonyms for the word 'Hope' are "pessimism, despair, doubt".
- The word 'Doubt' refers to a feeling of not knowing what to believe or what to do, or the condition of being uncertain.
- Example: The future of the entire project is in some doubt.

Select the option that can be used as a one-word substitute for the given group of words.

55. A self-governing country or region

A Democracy

B Monarchy

C **Autonomy**

D Anarchy

Solution

- The word 'Autonomy' (noun) means the quality or state of being self-governing.
- Example: Demonstrators demanded immediate autonomy for their region.
- Synonyms for the word 'Autonomy' are "free will, self-determination, volition".

Select the option that expresses the given sentence in reported speech.

56. “Is he alright now?” I asked my neighbour’s wife about her husband, Mr. Gulyani.

A

I asked Mrs. Gulyani, my neighbour's wife, if her husband was alright then

B

I asked Mrs. Gulyani, my neighbour's wife, if your husband will be alright now.

C

I asked Mrs. Gulyani, my neighbour's wife, if her husband had become alright then

D

I asked Mrs. Gulyani, my neighbour's wife, if her husband is alright now

Solution

- The rules of changing Direct Speech to Reported Speech:
- The given sentence is an example of an interrogative sentence.
- Hence, 'Said to/said' will be changed into 'asked', 'inquired', 'interrogated', etc.
- If the question is closed-ended (when the answer is 'yes' or 'no'), conjunction if/whether is used.
- And, Commas and inverted commas will be removed.
- The given question is closed-ended. So, the conjunction 'if' will be used.

- 'Helping verb' will come after the subject.
- 'Is' will be changed to 'was'.
- The word 'now' will be changed to 'then'.
- Question mark (?) will be replaced with full-stop (.).

Select the option that expresses the given sentence in passive voice.

57. The sunrays burned my face

- A** My face is burned by the sunrays
- B** My face has been burned by the sunrays
- C** My face is being burned by the sunrays.
- D** My face was burned by the sunrays

Solution

- The given sentence is in Active Voice. As per the given question we have to change it into Passive Voice.
- The process of transformation is as follows:
- The structure of the given sentence is as follows:
- Subject + V2+ Object. (Active Voice)
- Subject (objective case)+ was/were + V3 + Object (subjective case). (Passive Voice)

Select the option that can be used as a one-word substitute for the given group of words.

58. A place where coins, medals or tokens are made

A Mint

B Casting

C Mill

D Workshop

Solution

- A mint is a place where the new coins of a country are made.
- The word 'Mint' is a noun.

The following sentence has been split into four segments. Identify the segment that contains a grammatical error.

59. The woodcutter felled / some trees / with hardly / many effort at all.

A many effort at all

B some trees

C with hardly

D The woodcutter felled

Solution

- The error lies in the part 'many effort at all'.
- The sentence talks about a woodcutter who felled some trees with almost no effort at all.
- The phrase 'hardly any' means 'almost no'.
- Example: There's hardly any stuffing left in the sofa.
- Therefore the word 'many' in the last part of the sentence must be replaced with 'any' to make the sentence grammatically correct.

Select the most appropriate meaning of the following idiom.

60. To take a chill pill

A To gulp a tablet for a cold

B To drink cold water

C To calm down

D To ask a doctor for medication

Solution

- An idiom is a group of words established by usage as having a meaning not deducible from those of the individual words.
- The phrase 'chill pill' (noun) refers to something that has a calming or relaxing effect. (कुछ ऐसा जिसका शांत या आराम देने वाला प्रभाव हो)
- Therefore the idiom 'To take a chill pill' (often used imperatively) means to calm down; relax. (शांत होना; आराम करना)
- Example: Stop shouting! Take a chill pill!

61. Select the most appropriate **ANTONYM** of the given word.

Putrefy

- ☐ **A** Destroy
- ☐ **B** Contaminate
- ☒ **C** Combine
- ☐ **D** Decompose

Solution

- The word 'Putrefy' means to go through decomposition.
- Example: The body had putrefied beyond recognition.
- The antonyms for the word 'Putrefy' are "restore, combine, integrate".
- The word 'Combine' means to come together to form a single unit.
- Example: The two countries combined against their common enemy.

Select the option that will improve the *italics* part of the given sentence. In case no improvement is needed select 'No improvement required'.

62. Fierce competition *against* restaurants has driven up the prices.

A along

B No improvement required

C among

D through

Solution

- The given sentence talks about an undefined number or a group of restaurants.
- The preposition 'among' is used when talking about people or things that are not distinct and are viewed as a group.
- Example: A decision that has caused a lot of anger among women.
- Therefore the word 'against' must be replaced with the preposition 'among' to make the sentence grammatically correct.

Select the most appropriate option to substitute the *italics* segment in the given sentence. If no substitution is required, select 'No substitution required'.

63. "Can you give me *so many examples* of subordinate clauses?", the teacher asked the class.

A No substitution required

B some many examples of

C some few examples of

D some more examples of

Solution

- The use of 'so many examples of' is incorrect as per the context of the given sentence.
- 'So many' is used indicating a particular but unspecified quantity.
- Example: I told her, in so many words, to stop interfering.
- In the given sentence the teacher asked for a few more examples.
- 'Some more' is used to indicate an additional number or amount of something.
- Example: Would you like some more cake?

The following sentence has been divided into parts. One of them may contain an error. Select the part that contains the error from the given options. If you don't find any error, mark 'No error' in your answer.

64. The river appears to have / got its name / from the town nearby.

A got its name

B from the town nearby

C No error

D The river appears to have

Solution

- The use of the verb 'appears', meaning seem; give the impression of being, in the first part of the given sentence is grammatically correct as it follows a singular noun 'river'.
- The use of the preposition 'to' in this context is also correct.
- The use of the verb 'got' (past form of 'get') is also correct as the sentence indicates a past event, the time when the river got its name.
- The use of the preposition 'from' in third part of the given sentence is also correct as it is indicating the point in space at which a journey, motion, or action starts, as in this case, the place where from the river got its name.

Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

65. A. “Excellently well,” said she; “we have everything that we want; I have but one prayer, that we may have a heavy storm of rain to water our plants.”
- B. A man who had two daughters married one to a gardener and the other to a potter.
- C. Off he went to the potter's home and asked his other daughter how matters were with her.
- D. After a while he paid a visit to the gardener's home and asked his daughter how she was, and how it fared with her.

A ACDB

B DCAB

C BDAC

D BCDA

Solution

- The given question is a sentence jumble.

- From the jumbled sentences we can collect that the passage is talking about a man who had two daughters and where he married them off to.
- Sentence B is independent of the any other sentences as it introduces the main characters of the passage, i.e., the man and his two daughters. Thus, sentence B is the first part of the given sequence.
- Sentence D follows sentence B as it states the incident that follows sentence B, i.e., the man visiting his daughter's place after her marriage.
- Sentence A follows sentence D as it is directly linked to it as sentence A serves the reply from the first daughter to the question asked by the man in sentence D.
- Sentence C is the concluding part as it shows us the man visiting his second daughter after he finished talking to his first daughter in the previous sentence.

Sentences of a paragraph are given below in jumbled order. Arrange the sentences in the right order to form a meaningful and coherent paragraph.

66. **A. While India is home to 75 per cent of the tigers in the world, the Global Tiger Day, as it is also known - sees awareness events organised in the country, as well as in neighbouring Bangladesh and Nepal.**
- B. Its primary objective is to preserve the natural habitat of the tiger.**
- C. International Tiger Day was initiated in 2010, at the Saint Petersburg Tiger Summit.**
- D. This annual event observed on 29 July, aims to create awareness on tiger conservation.**

A CDBA

B CABD

C DCBA

D BACD

Solution

- The given sentences are based on the International Tiger Day.

- Sentence C is independent of any other sentences as it introduces us to the theme of the passage, i.e. the International Tiger Day. Thus, sentence C can be used to introduce the passage - International Tiger Day was initiated in 2010, at the Saint Petersburg Tiger Summit.
- Sentence D follows sentence C as it further states the day on which the International Tiger Day is observed and what it aims for - This annual event observed on 29 July, aims to create awareness on tiger conservation.
- Sentence B follows sentence D further elaborating the objectives of this special day, as talked about in the previous sentence - Its primary objective is to preserve the natural habitat of the tiger.
- Finally sentence A is used as the conclusion of the passage as it states the places where this day is celebrated and also provides the numerical data of the number of tigers present - While India is home to 75 per cent of the tigers in the world, the Global Tiger Day, as it is also known - sees awareness events organised in the country, as well as in neighbouring Bangladesh and Nepal.

Select the most appropriate option to fill in the blank.

67. Help from relatives ___ him in difficult times.

A approved

B supported

C allowed

D passed

Solution

- The sentence talks about a person who got the help from his relatives, emotionally, during his difficult times.
- We can say the sentence is talking about emotional or practical help by the context of the sentence - "in difficult times".
- The word 'support' means to help someone emotionally or in a practical way.
- Example: My family has always supported me in whatever I've wanted to do.

68. Select the most appropriate synonym of the given word.

Dedicated

A Tedious

B Boring

C Dreary

D Committed

Solution

- The word 'Dedicated' refers to believing that something is very important and giving a lot of time and energy to it.
- Example: The Green Party is dedicated to protecting the environment.
- The synonyms of the 'dedicated' are "devoted, faithful, committed".
- The word 'committed' means loyal and willing to give your time and energy to something that you believe in.
- Example: We are committed to withdrawing our troops by the end of the year.

Select the most appropriate meaning of the following idiom.

69. To walk on air

A To be completely free

B To feel very depressed

C To be very rich

D To be very happy

Solution

- An idiom is a group of words established by usage as having a meaning not deducible from those of the individual words (e.g. over the moon, see the light).
- The idiom 'walk on air' means to feel extremely excited or happy.
- Example: After the delivery of her baby, she was walking on air.
- Therefore the idiom 'To walk on air' means 'to be very happy'.

Select the most appropriate option to fill in the blank.

70. The interviewer asked Gautam, “Can you tell me what your ___ in life are?”

A frivolities

B trivialities

C determinations

D aspirations

Solution

- In the given question the interviewer asked Gautam a question.
- By the context of the question we can understand that in almost every interview the most commonly asked question is what our goals are or what are our aims in life.
- The word 'aspiration' means something that you hope to achieve.
- Example: As a musician, my aspiration is to create music full time.

71.

In the following passage, some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

Communication is a connection between people sharing information with (1)___ other. It is important in everyday life, (2)___ work and nearly any time you interact with other (3)___. Communication issues don't always happen (4)___ of your English level. The truth is, you can know how to speak English (5)___ knowing how to communicate in English

A. Select the most appropriate option to fill in blank number 2.

A from

B at

C while

D on

Solution

- The usage of the preposition 'at' is correct here.
- We always say 'at work'. It means that you are engaged in something.

B. Select the most appropriate option to fill in blank number 5.

A without

B minus

C devoid

D lacking

Solution

- "The truth is, you can know how to speak English without knowing how to communicate in English."
- Minus- less; subtract; take away.
- Devoid- not having a particular quality; without something.
- Lacking- not having enough of something.
- The only appropriate option is 'without'.

C. Select the most appropriate option to fill in blank number 4

A because

B since

C about

D beside

Solution

- Blank number 4 needs a reason.
- "Communication issues don't always happen because of your English level."
- Since- from a particular time in the past until a later time in the past or until now.

D. Select the most appropriate option to fill in blank number 3.

A people

B animals

C ones

D creatures

Solution

- Animals, ones, creatures, will be totally incorrect.

- Here, the passage talks about communication and communication skills, therefore, 'people' is the only appropriate word that is correct.

E. Select the most appropriate option to fill in blank number 1.

A some

B one

C every

D each

Solution

- The usage of 'some other', 'one other', 'every other', is incorrect.
- Each other is treated as a singular pronoun and emphasizes two or more separate people.

72. Give the combination of letters that when sequentially placed in the blanks of the given series will complete the series.

I _ c h t l g c _ t l g _ c h t _ g c h t l g c h _

A g, h, c, h, l, t

B H, h, g c, l, t

C g, h, c, l, t

D h, g, h, c, l, t

Solution

Logic is:

Igcht / Igcht / Igcht / Igcht / Igcht

Hence, option C is the correct answer.

73. In a certain code language 'DOLPHIN' is written as 'EPMPGHM'.
How will 'CORDIAL' be written in that language?

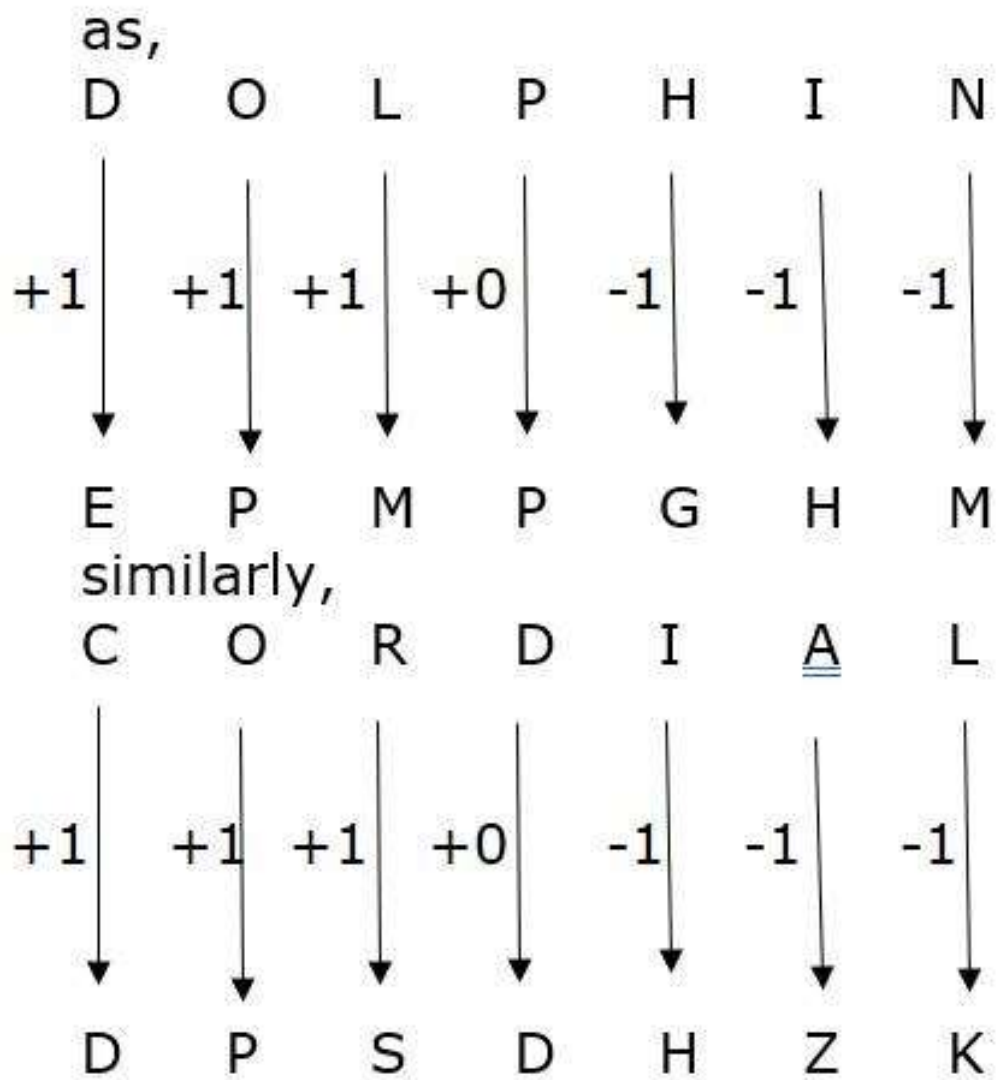
A EPTDHZK

B DPSHDAL

C DPSDHZK

D DPSEGZK

Solution



Hence, option C is the correct answer.

74. Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different.

A 7 : 147

B 8 : 192

C 12 : 432

D 13 : 506

Solution

$$(7^2 \times 3 = 49 \times 3 = 147)$$

$$(8^2 \times 3 = 64 \times 3 = 192)$$

$$(12^2 \times 3 = 144 \times 3 = 432)$$

$$(13^2 \times 3 = 169 \times 3 = 507)$$

Hence, option D is the correct answer.

75. Select the option in which the words share the same relationship as that shared by the given pair of words.

Resistance : Ohm

A Density : Joule

B Ampere : Current

C Force : Watt

D Angle : Radians

Solution

as,

Ohm is the SI unit of Resistance.

Similarly,

Radian is the SI unit of Angle.

Hence, option D is the correct answer.

76. Four words have been given, out of which three are alike in some manner and one is different. Select the word that is different.

A Headway

B Advance

C Growth

D Deteriorate

Solution

Headway, Advance and Growth are synonym words.

Hence, option D is the correct answer.

77. Select the option in which the numbers are related in the same way as are the numbers of the following set.

(12, 30, 61)

A (18, 45, 91)

B (8, 21, 45)

C (6, 15, 30)

D (14, 35, 72)

Solution

As,

$$(12 \times 2 + (12/2) = 24 + 6 = 30, 30 \times 2 + 1 = 60 + 1 = 61)$$

Similarly,

$$(18 \times 2 + (18/2) = 36 + 9 = 45, 45 \times 2 + 1 = 90 + 1 = 91)$$

Hence, option A is the correct answer.

78. Select the number from among the given options that can replace the question mark (?) in the following series.

4, 11, 31, 65, 193, ?

A 368

B 389

C 386

D 398

Solution

Pattern is:

$$4 * 2 + 3 = 11$$

$$11 * 3 - 2 = 31$$

$$31 * 2 + 3 = 65$$

$$65 * 3 - 2 = 193$$

$$193 * 2 + 3 = 389$$

Hence, option B is the correct answer.

79. Select the option in which the numbers are related in the same way as are the numbers of the following set.

(24, 10, 392)

A (29, 18, 242)

B (21, 18, 234)

C (26, 12, 269)

D (27, 15, 480)

Solution

As,

$$\{(24-10)^2 \times 2 = 14^2 \times 2 = 196 \times 2 = 392\}$$

Similarly,

$$\{(29-18)^2 \times 2 = 11^2 \times 2 = 121 \times 2 = 242\}$$

Hence, option A is the correct answer.

80. Three different positions of the same dice are shown. Select the letter/numbers that will be on the face opposite to the face having the letter 'U'.



A E

B 9

C A

D I

Solution

9 is common face in second and third dices.

so, O, E, I and U are four consecutive side face of 9.

from O, E, I and U:

So, E will be opposite to U.

Hence, option A is the correct answer.

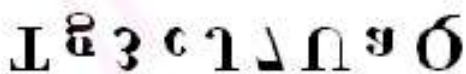
81. Select the correct mirror image of the given combination when the mirror is placed at 'PQ' as shown.

T g 3 c 7 J U a Q 

A 


B 

C 

D 

Solution

In a plane mirror, a mirror image is a reflected duplication of an object that appears almost identical, but it is reversed in the direction perpendicular to the mirror surface. As an optical effect it results from reflection of substances such as a mirror or water.

T g 3 c 7 J U a Q  Q 8 U L 7 c 3 g T

Hence, option B is the correct answer.

82. Select the option that is related to the fourth number in the same way as the first number is related to the second number and the fifth number is related to the sixth number.

$$17 : 293 :: ? : 488 :: 21 : 445$$

A 28

B 24

C 22

D 20

Solution

as,

$$(17^2 + 4 = 289 + 4 = 293)$$

and

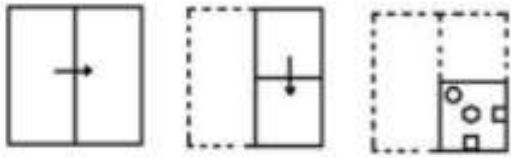
$$(21^2 + 4 = 441 + 4 = 445)$$

Similarly,

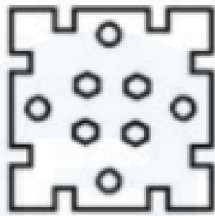
$$(22^2 + 4 = 484 + 4 = 488)$$

Hence, option C is the correct answer.

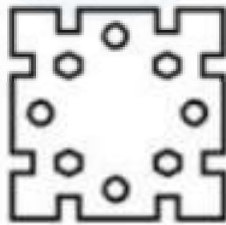
83. The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



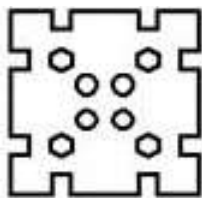
A



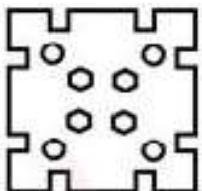
B



C

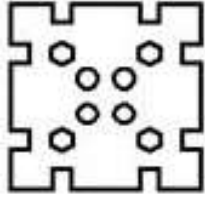


D



Solution

As given in the figure, we need to fold it in the given manner and Option C would appear when unfolded.



Hence, option C is the correct answer.

84. Select the correct combination of mathematical signs that can sequentially replace the * signs and balance the equation.

$$60 \ 2 \ 3 \ 6 \ 5 \ * \ 43$$

A $\div, +, \times, =, -$

B $\div, +, \times, -, =$

C $+, \div, \times, =, -$

D $\div, \times, +, -, =$

Solution

By checking option A:

$$60 \ 2 \ 3 \ 6 \ 5 \ * \ 43$$

After interchanging:

$$60 \div 2 + 3 \times 6 = 5 - 43$$

On solving,

$$60 \div 2 + 3 \times 6 = 5 - 43$$

$$\text{or, } 30 + 18 = 5 - 43$$

$$\text{or, } 48 = -38$$

so, its not correct option.

By checking option B:

$$60 \div 2 + 3 \times 6 - 5 = 43$$

After interchanging:

$$60 \div 2 + 3 \times 6 - 5 = 43$$

On solving,

$$60 \div 2 + 3 \times 6 - 5 = 43$$

$$\text{or, } 30 + 18 - 5 = 43$$

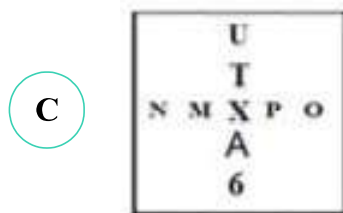
$$\text{or, } 43=43$$

so, its correct option.

As, we got the correct answer, so , no need to check more options.

Hence, option B is the correct answer.

85. Select the figure from among the given options that can replace the question mark (?) in the following series.



Solution

Pattern is:

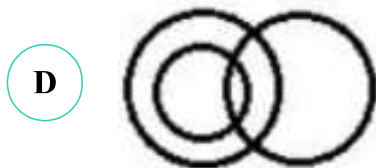
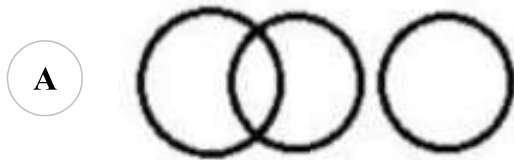
So, the next figure is:



Hence, Option C is the correct answer.

86. Select the Venn diagram that best illustrate the relationship between the following classes.

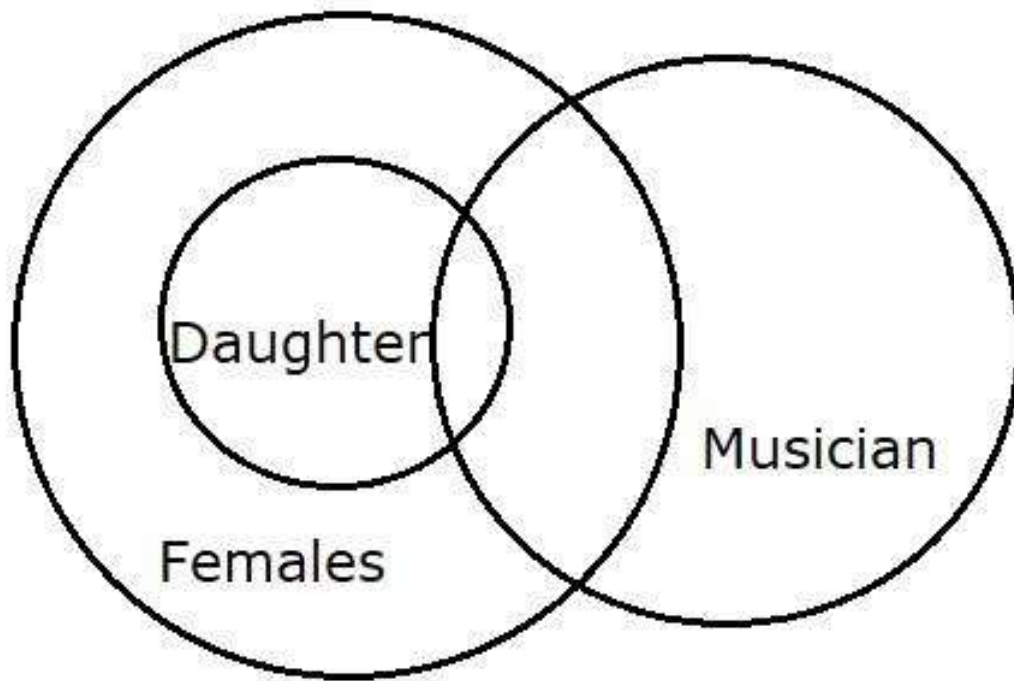
Musicians, Females, Daughters



Solution

All daughters are females. And both can be musicians.

So, the best representation is:



Hence, option D is the correct answer.

87. Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

All directors are actors.

No actor is a producer.

All choreographers are directors.

Conclusions:

I. No choreographer is producer.

II. Some actors are choreographers.

III. No director is a producer.

A Only conclusions II and III follow

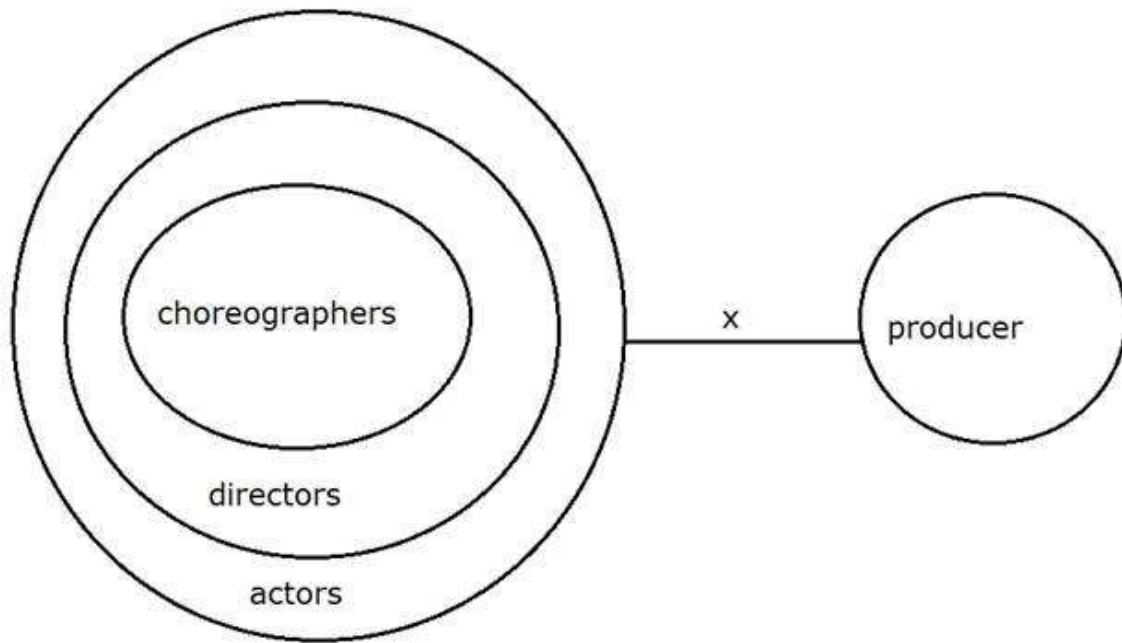
B Only conclusions I and II follow

C All the conclusions follow

D Only conclusions I and III follow

Solution

Minimum Possible diagram is-



Conclusions:

I. No choreographer is producer. (It follows as All directors are actors, No actor is a producer and All choreographers are directors.)

II. Some actors are choreographers. (It also follows as All directors are actors and All choreographers are directors.)

III. No director is a producer. (It also follows as All directors are actors, No actor is a producer and All choreographers are directors.)

So, All the conclusions follow.

Hence, option C is the correct answer.

88. Select the option that is related to the third word in the same way as the second word is related to the first word.

Chisel : Sculptor :: Anvil : ?

A Butcher

B Blacksmith

C Carpenter

D Surgeon

Solution

as,

Chisel is an instrument used by Sculptor.

Similarly,

Anvil is an instrument used by Blacksmith.

Hence, option B is the correct answer.

89. Four letter-cluster have been given, out of which three are alike in some manner and one is different. Select the letter-cluster that is different.

A LNQJ

B BDGT

C HJMP

D TVYB

Solution

A. L $\xrightarrow{+2}$ N $\xrightarrow{+3}$ Q $\xrightarrow{\text{opposite letter}}$ J

B. B $\xrightarrow{+2}$ D $\xrightarrow{+3}$ G $\xrightarrow{\text{opposite letter}}$ T

C. H $\xrightarrow{+2}$ J $\xrightarrow{+3}$ M $\xrightarrow{+3}$ P

D. T $\xrightarrow{+2}$ V $\xrightarrow{+3}$ Y $\xrightarrow{\text{opposite letter}}$ B

Hence, option C is the correct answer.

90. Select the letter-cluster among the given options that can replace the question mark(?) in the following series.

CMQR, BONV, AQKZ, ZSHD, ?

A YVEI

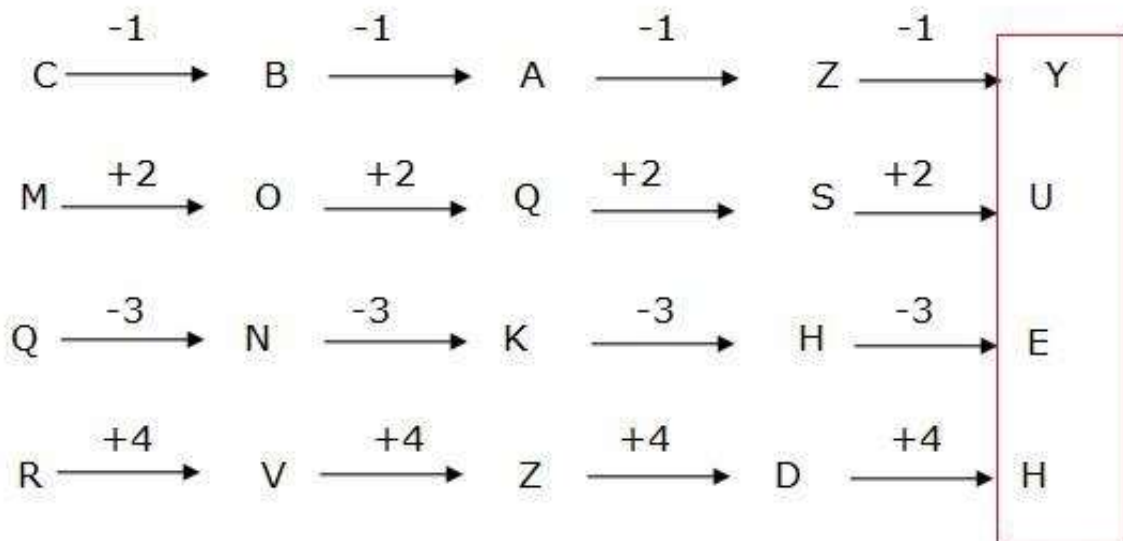
B ZUDH

C ZVGH

D YUEH

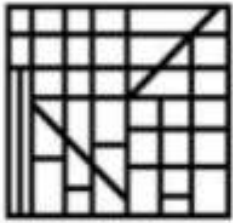
Solution

Pattern is:

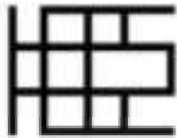


Hence, option D is the correct answer.

91. Select the option figure that is embedded in the given (rotation is NOT allowed).



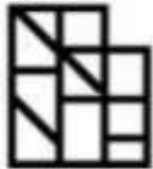
A



B



C

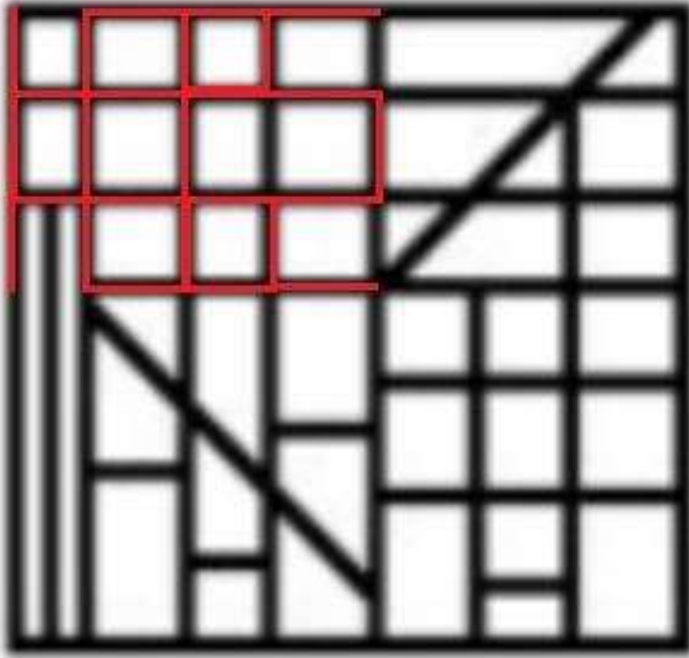


D



Solution

After carefully observing the figures given in the question and answers, it is very clear that the answer figure(A) given is embedded in the question figure. It is shown as given below:



Hence, option A is the correct answer.

92. Seven years from now, Anamika will be as old as Malini was 4 years ago. Srinidhi was born 2 years ago. The average age of Anamika, Malini and Srinidhi 10 years from now will be 33 years. What is the present age of Anamika?

A 30 years

B 28 years

C 31 years

D 29 years

Solution

Let the Present ages of Anamika , Malini and Srinidhi are Anamika x , y and z respectively.

Seven years from now, Anamika will be as old as Malini was 4 years ago.

$$x+7 = y-4$$

$$\text{or, } y=x+11$$

and $z=2$ years

The average age of Anamika, Malini and Srinidhi 10 years from now will be 33 years.

$$\text{So, } (x+y+z+30)=33*3$$

$$\text{or, } x+y+z=99-30=69$$

Now,

$$x+(x+11)+2=69$$

$$\text{or, } 2x+13=69$$

$$\text{or, } 2x=69-13=56$$

$$\text{or, } x=56/2=28$$

so, the present age of Anamika= x = 28 years

93. Find the number of triangles in the given figure.



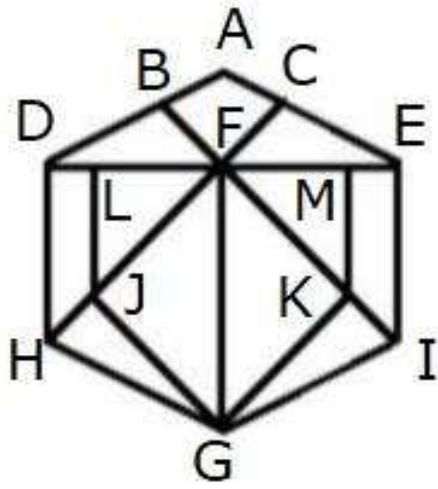
A 13

B 12

C 15

D 14

Solution



There are total 13 triangles in all;

DBF, FCE, DFH, FJL, FEI, FMK, HFG, FJG, FGI, FGK, ADE, HJG, GKI

Hence, Option A is the correct answer.

94. 'R8S' means 'R is the father of S'. 'R7S' means 'R is the sister of S'.

'R6S' means 'R is the brother of S'.

'R2S' means 'R is the wife of S'.

Which of the following expression representing 'X is the mother of Y'?

A X2M8Y

B X7M6O2Y

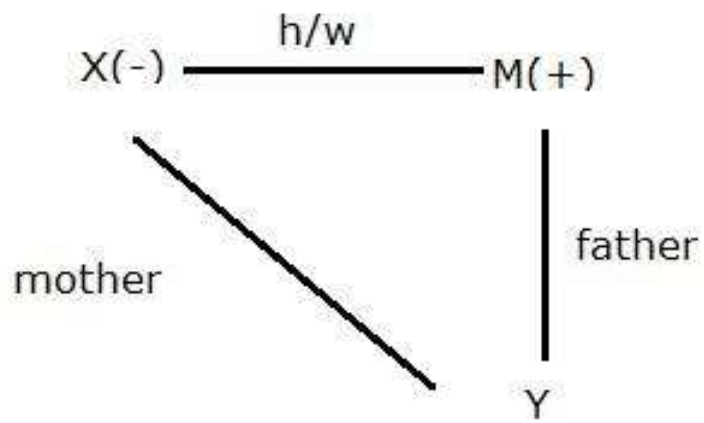
C X2M8O2Y

D X8M2Y

Solution

By checking option A:

The expression X2M8Y can be drawn as given below:



from the above figure, X is the mother of Y.

As, we got the correct answer, so, no need to check more options.

Hence, option A is the correct answer.

95. Select the correct option that indicates the arrangement of the given words in the order in which they appear in an English dictionary.

1) Protest

2) Palindrome

3) Probability

4) Pathetic

5) Parking

A 2, 4, 5, 3, 1

B 2, 1, 3, 4, 5

C 2, 5, 1, 4, 3

D 2, 5, 4, 3, 1

Solution

correct order as they would appear in English dictionary is:

1. Palindrome

2. Parking

3. Pathetic

4. Probability

5. Protest

Hence, Option D is the correct answer.

96. In a certain code language, 'VIRTUE' is coded as '201' and 'TRAGEDY' is coded as '218'. How will 'PROFANE' be coded in that language?

A 570

B 342

C 456

D 432

Solution

Let A=26, B=25, C=24,, Z=1

as,

VIRTUE = $(5+18+9+7+6+22)$ number of vowels in VIRTUE = $673=201$

and

TRAGEDY = $(7+9+26+20+22+23+2)$ number of vowels in TRAGEDY = $1092=218$

similarly,

PROFANE = $(11+9+12+21+26+13+22)$ number of vowels in PROFANE = $1143=342$

Hence, option B is the correct answer.



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