CUET (UG) Question Paper - 2023

National Testing Agency

1st JUNE 2023 – SHIFT 1

Section - III (General Test)

1. The provision for the anti-defection law is given under which schedule of the constitution:

(A) 10th Schedule   **(B)** 9th Schedule
(C) 8th Schedule   **(D)** 12th Schedule

Ans. **Option (A) is correct.**

Explanation: The provision for the anti-deflection law is given under the tenth schedule of the Indian constitution. It was included by the 52nd amendment of the Indian constitution in the year 1985. This law allows the disqualification of individual MPs or MLAs for a given period of time, who leave one party to join the other.

The Ninth Schedule of the Indian constitution consists of the state and central government laws that cannot be challenged in the court. This schedule was inserted by the First Constitution Amendment Act, 1951. It basically consists of laws that focus on the socio-economic development of the society.

The eighth schedule of the Indian constitution lists 22 official languages. These are- Assamese, Bengali, Gujarati, Hindi, Kannada, Kashmiri, Konkani, Malayalam, Manipuri, Marathi, Nepali, Odia, Punjabi, Sanskrit, Sindhi, Tamil, Telugu, Urdu, Bodo, Santhali, Maithili and Dogri. There is no fixed criteria for a language to be included in the eighth schedule of the constitution.

The twelfth schedule of the Indian constitution was included by the 74th Amendment Act of 1992. It deals with the power, rights and responsibilities of the Municipality in order to help them function effectively.

2. If in $\triangle ABC$ $\angle A + \angle B = 90°$ and $\sin B = \dfrac{4}{5}$, then find the value of cosA.

(A) 1   **(B)** $\dfrac{3}{5}$ **(C)** $\dfrac{4}{5}$ **(D)** 0

Ans. **Option (C) is correct.**

Explanation:

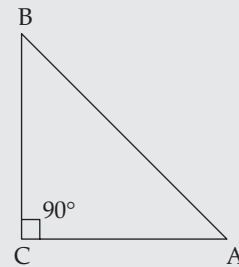**Given that:** $\angle A + \angle B = 90°$

We know that in a triangle,

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

So, $90° + \angle C = 180°$

or $\angle C = 180 – 90° = 90°$

Also given that $\sin B = \dfrac{4}{5}$ from right angle triangle, $\sin B = \dfrac{AC}{AB}$

$\therefore$ $\cos A = \dfrac{AC}{AB} = \dfrac{4}{5}$

3. Fill up the gap with proper group of alphabets.

I K M J L N K M O ___?___

(A) P N L   **(B)** Q N S
(C) L N P   **(D)** S N Q

Ans. **Option (C) is correct.**

Explanation:

Given series: I K M   J LN   K M O   ?

Logic:

I $\xrightarrow{+1}$ J $\xrightarrow{+1}$ K $\xrightarrow{+1}$ L

K $\xrightarrow{+1}$ L $\xrightarrow{+1}$ M $\xrightarrow{+1}$ N

M $\xrightarrow{+1}$ N $\xrightarrow{+1}$ O $\xrightarrow{+1}$ P

So, the missing term is LNP.

4. If 18th February 1997 fell on Tuesday then what was the day on 18th February 1999?
(A) Friday   (B) Monday
(C) Tuesday   (D) Thursday

Ans. Option (D) is correct.

> *Explanation:*
> 18th Feb 1997 = Tuesday
> Number of odd days = 1 + 1 = 2
> (Because the number of odd days in an ordinary year is 1)
> Hence, 18th Feb 1999 will be Tuesday + 2 = Thursday

5. Find the missing term in the given series:
DF, GJ, KM, NQ, RT, __?__
(A) UW   (B) UX   (C) Y Z   (D) X Z

Ans. Option (B) is correct.
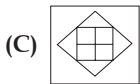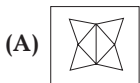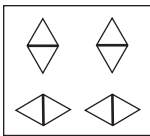
> *Explanation:*
> **Given series:** DF, GJ, KM, NQ, RT, ?
> **Logic:**
> D $\underline{+3}$ G $\underline{+4}$ K $\underline{+3}$ N $\underline{+4}$ R $\underline{+3}$ U
> F $\underline{+4}$ J $\underline{+3}$ M $\underline{+4}$ Q $\underline{+3}$ T $\underline{+4}$ X
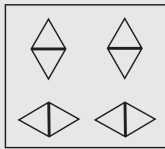> Hence, UX is the correct answer.

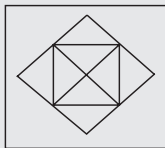**6.** Find out the answer figure which can be formed from the pieces given in the question figure?

Ans. Option (B) is correct.

> *Explanation:*
>
>
>
> **Logic:**
> Follow the pattern and the symmetry. Hence,
>
>
>
> is the correct answer.

7. A wholesaler sells 20 pens at the marked price of 16 pens to a retailer. The retailer sells them at the marked price. Determine the gain percent of the retailer.
(A) 30 %   (B) 23 %   (C) 25 %   (D) 28 %

Ans. Option (C) is correct.

> *Explanation:*
> According to the question: For wholesaler, wholesale,
> S.P. of 20 pens = M.R.P. of 16 pens.
> Let the M.R.P. of 1 pen = ₹100
> ∴ Cost price of 1 pen for retailer $= \dfrac{1600}{20}$
> $= ₹80$
> ∴ Profit % for retailer $= \dfrac{(100-80)}{80} \times 100\%$
> $= \dfrac{20}{80} \times 100\% = 25\%$

8. If the first three letters of the word "SOCIOLOGIST" are reversed, then the last three letters are added and then the remaining letters are reversed and added, then which letter will be exactly in the Middle?
(A) G   (B) T   (C) I   (D) C

Ans. Option (B) is correct.

> *Explanation:*
> **Given word: SOCIOLOGIST**
> **Logic:**
> The first 3 letters are reversed i.e., SOC can be written as COS
> Now,
> COS is added to the last three letters. Hence, COSIST
> The remaining letters are reversed i.e., IOLOG can be written as GOLOI
> And finally,
> COSIST+ GOLOI= COSISTGOLOI
> Hence, T is exactly in the middle.

9. _____ is known as the father of Indian Nuclear Physics.
(A) Vikram Sarabhai   (B) J.C. Bose
(C) Dr. Homi J. Bhabha   (D) A.P.J. Abdul Kalam

Ans. Option (C) is correct.

> *Explanation:* Dr Homi J. Bhabha is known as the father of Indian Nuclear Physics. He was the founding director and professor of Tata Institute of Fundamental Research (TIFR) and Bhabha Atomic Research Centre. He was the first chairman of the Indian Atomic Energy Commission and secretary of the Department of Atomic Energy.
> Vikram Sarabhai was an Indian physicist and astronomer. He is regarded as the Father of the Indian Space Program. He was the first chairman of the Indian Space Research Organisation (ISRO).
> APJ Abdul Kalam was the 11th President of India and an aerospace engineer. He is known as 'Missile Man of India.' His autobiography is by the name 'Wings of Fire' and was co-authored by 'Arun Tiwari.'

> Jagdish Chandra Bose was an Indian physicist and plant physiologist. He is considered as the 'father of Bengali science fiction.' He is known for the invention of the crescograph, a device for measuring the growth of plants.

10. Which of the following is/are the possible commercial industrial applications of bacteria?

(1) Fermentation of sugars.

(2) Cleaning of oil spills.

(3) Tanning and making ink.

(4) Production of Vaccine

(5) To make Varnish, Polish, Paint etc.

Choose the **most appropriate** answer from the options given below:

(A) (1), (2) and (3) only **(B)** (1), (2) and (4) only

(C) (2), (3) and (4) only **(D)** (3) and (5) only
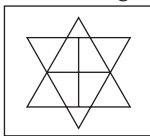
Ans. Option (B) is correct.

> *Explanation:* Bacteria is used for the fermentation of sugars, cleaning of oil spills, and production of vaccines.
>
> Fermentation is an anaerobic metabolic process of breaking down complex organic compounds into simpler substances along with the formation of energy in the form of Adenosine Tri Phosphate (ATP). Bacteria and Fungi play an active role in the process of fermentation. A bacteria named as Pseudomonas putida is used for cleaning of oil spills as it breaks down and digests the hydrocarbons present in the oil.
>
> Bacteria are mostly single-celled microorganisms which were among the first forms of life to appear on the Earth.

11. Choose the alternative figure which is embedded in the problem figure:

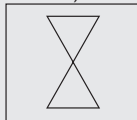**Problem figure**

(A)   **(B)**

(C)   **(D)**

Ans. Option (B) is correct.

> *Explanation:*
>
>
>
> **Logic:-**
> Follow the pattern and the symmetry. Hence,
>
>
>
> is the correct answer.

12. An Indian patriot from Punjab, shot down General Reginald Dyer in London.

(A) Sardar Bhagat Singh **(B)** Shah Nawaz

(C) Sardar Udham Singh **(D)** Sohan Singh

Ans. Option (C) is correct.

> *Explanation:* Sardar Udham Singh shot down General Reginald Dyer at Caxton Hall, London on 13th March 1940. Udham Singh was convicted of murder and hanged to death on 31st July 1940. General Dyer was responsible for the Jallianwala Bagh massacre that had taken place on 13th April 1919 in Amritsar. About 20,000 unarmed people had gathered at Jallianwala Bagh to protest against the Rowlatt Act. Dyer blocked the exit of the building with the troops and open fired on the unarmed people. At the time of the incident, General Dyer was working as Punjab's Lieutenant Governor. Udham Singh was the witness to this massacre. He was a revolutionary and a pioneer of the Indian independence movement. He is referred to as 'Shaheed-i-Azam Sardar Udham Singh.' He shot down Dyer in order to take revenge for the massacre.

13. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R).**

Assertion (A): Earth is the only planet known to have life.

Reason (R): Earth has an atmosphere which is a mixture of Oxygen, Nitrogen and Carbon dioxide.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

(A) Both **(A)** and **(R)** are correct and **(R)** is the correct explanation of **(A)**

(B) Both **(A)** and **(R)** are correct but **(R)** is not the correct explanation of **(A)**

(C) **(A)** is correct but **(R)** is not correct

(D) **(A)** is not correct but **(R)** is correct

Ans. Option (B) is correct.

> *Explanation:* Earth is the only planet known to have life. This is possible because of the presence of an atmosphere which consists of important gases like oxygen, carbon dioxide, and nitrogen etc. required to support living organisms. Also, the atmosphere provides a protective blanket layer. Besides, the presence of water is an essential element for life to start and sustain life on the planet.
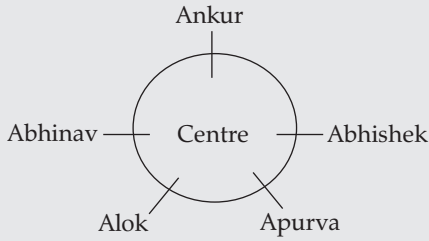
14. Five students are standing in a circle and all are facing the centre of circle. Abhinav is between Alok and Ankur. Apurva is on the left of Abhishek. Alok is on the left of Apurva. Who is sitting next to Abhinav on his right?

(A) Apurva   **(B)** Ankur

(C) Abhishek   **(D)** Alok

Ans. Option (D) is correct.

Explanation:
According to the question:

So, Alok is next to Abhinav on his right.

15. Match **List - I** with **List - II**.

List - I	List - II
(1) Indian Rare Earths Limited	**(I)** Bengluru
(2) Indian Space Research Organisation	**(II)** Thiruvananthpuram
(3) Vikram Sarabhai Space Centre	**(III)** Jadugoda
(4) Uranium Corporation of India	**(IV)** Aluva (Kerala)

Choose the **most appropriate** answer from the options given below:

(A) (1)-(I), (2)-(III), (3)-(II), (4)-(IV)
(B) (1)-(IV), (2)-(III), (3)-(II), (4)-(I)
(C) (1)-(IV), (2)-(I), (3)-(II), (4)-(III)
(D) (1)-(I), (2)-(IV), (3)-(II), (4)-(III)

Ans. Option (C) is correct.

Explanation:

Name of the organisation	Headquarters	Head
Indian Rare Earths Limited (IREL)	Mumbai, India	D Singh
Rare Earths Division (RED), IREL	Udyogamandal, Aluva, Kerala	
Indian Space Research Organisation	Bengaluru, Karnataka	Sreedhara Somanath
Vikram Sarabhai Space Centre	Trivandrum, Kerala	S Unnikrishnan Nair
Uranium Corporation of India	Jadugora, Jharkhand	Dr. C.K.Asnani

16. A toy is made in the shape of a hemisphere of diameter 7 cm surmounted by a cone. If this 15.5 cm high toy is polished at 20 paise per cm², then find the cost of polishing. $\left(\text{Take } \pi = \dfrac{22}{7} \right)$

(A) ₹ 39
(B) ₹ 40.50
(C) ₹ 42.90
(D) ₹ 45

Ans. Option (C) is correct.

Explanation:
According to the question:
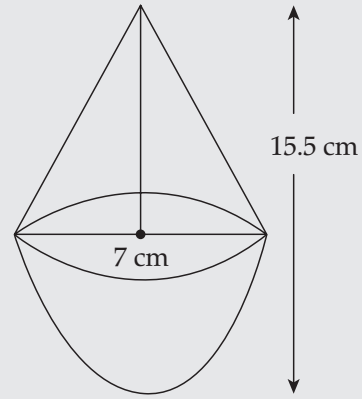
Radius of hemisphere $= \dfrac{7}{2}$
$= 3.5$ cm

Height of cone $= 15.5 - 3.5 = 12$ cm

So, slant height of cone $= \sqrt{12^2 + 3.5^2}$
$= \sqrt{144 + 12.25} = 12.5$ cm

Total surface area of toy $= 2\pi r^2 + \pi r l$
$= \pi \times 3.5[2 \times 3.5 + 12.5]$
$= \dfrac{22}{7} \times 3.5 \times 19.5 = 214.5 \text{ cm}^2$

So, required cost $= 214.5 \times \dfrac{20}{100} = ₹42.90$

17. Which of the following represents the Boyle's Law?

(A) $V \propto T$ (at constant P)

(B) $V \propto \dfrac{1}{P}$ (at constant T)

(C) $P \propto T$ (at constant V)

(D) $V \propto n$ (at constant T & P)

Ans. Option (B) is correct.

Explanation: Boyle's Law defines the relationship between pressure and volume in a closed container for an ideal gas at constant temperature. It is also referred to as Boyle–Mariotte law, or Mariotte's law. Also, Boyle's law is defined as at constant Temperature (T), where P is the Pressure exerted by the gas and V is the volume occupied by the gas. At a constant temperature, if we increase the Pressure, the volume occupied by the gas decreases and vice versa.

Mathematically, Boyle's law can be represented as $P_1V_1 = P_2V_2$

P_1 and P_2 are the initial and final pressure of gas where V_1 and V_2 are the initial and final volume of the gas.

18. Rajan does $\frac{7}{11}$ of a work in 21 days. How many more days will he take to complete the work?

(A) $9\frac{1}{4}$ (B) 12   (C) 15   (D) $13\frac{1}{2}$

Ans. Option (B) is correct.

Explanation:
Given:
Time taken by Rohan to complete $\frac{7}{11}$ of a work in 21 days.
So, time taken by Rohan to complete the whole work $= 21 \times \frac{11}{7} = 33$ days.
Hence, the required number of days $= 33 - 21 = 12$ days.

19.
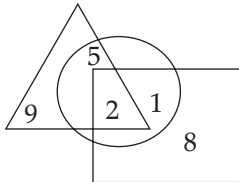
Which number lies inside all the figures?
(A) 2   (B) 5   (C) 9   (D) 1

Ans. Option (A) is correct.

Explanation:
Given diagram:
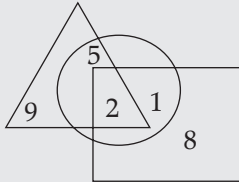
Logic:
2 lies inside the circle, square, and rectangle.

20. Find the missing figure and complete it:
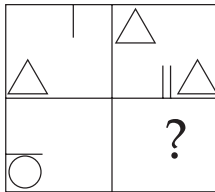
(A)   (B)

(C)   (D)

Ans. Option (C) is correct.
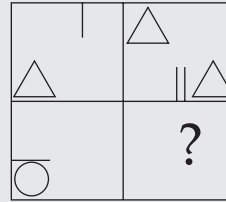
Explanation:

Logic:-
Follow the pattern and the symmetry.
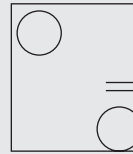
21. Which of the following country shares the shortest border with India?
(A) Bhutan   (B) Myanmar
(C) Nepal   (D) Pakistan

Ans. Option (A) is correct.

Explanation:
Of the given options, India shares the shortest border with Bhutan. Although, India shares the shortest border with Afghanistan of 106 km, the longest border with Bangladesh of 4096.7 km.

Bordering Countries	States	Length of the border
Bhutan	West Bengal, Sikkim, Arunachal Pradesh and Assam	699 km
Myanmar	Arunachal Pradesh, Manipur, Mizoram, and Nagaland	1643 km
Nepal	Sikkim, West Bengal, Uttar Pradesh and Uttrakhand	1751 km
Pakistan	Jammu & Kashmir, Punjab, Rajasthan, and Gujarat	3323 km

22. The circumference of a circular field is 396 m and that of the other circular field is 132 m. Find the area (in m²) of the third circular field whose radius is the sum of the radii of the first two fields. $\left(\text{Take } \pi = \frac{22}{7}\right)$

(A) 13860   (B) 19536
(C) 22176   (D) 23984

Ans. Option (C) is correct.

Explanation:
The circumference of first circle $= 396$ m
Circumference of first circle $= 2\pi r_1$
$\Rightarrow 396 = 2 \times \frac{22}{7} r_1$
$\Rightarrow r_1 = 63$ m

The circumference of second circle = 132 m

So, circumference of second circle = $2\pi r_2$
= 132

$$\therefore\; r_2 = \frac{132}{2\pi} = \frac{132 \times 7}{2 \times 22}$$

$$= 21\,\text{m}$$

So, radius of the new circle = 63 + 21 = 84 m

Now, Area of the new circle = πr^2

$$= \frac{22}{7} \times 84 \times 84$$

$$= 22176\,\text{m}^2$$

23. Linear equations $3x + 5y = 19$ and $10x - 3y = 24$ have solution $x = \dfrac{\alpha}{3}$ and $y = \dfrac{\beta}{2}$, then the value of $\alpha + \beta$ is:

(A) 5   (B) 13   (C) 10   (D) 7

Ans. Option (B) is correct.

> *Explanation:*
> Given that $3x + 5y = 19$
> $\qquad\qquad 10x - 3y = 24$
>
> Now putting $x = \dfrac{\alpha}{3}$ and $y = \dfrac{\beta}{2}$
>
> Now, $3\dfrac{\alpha}{3} + 5\dfrac{\beta}{2} = 19$ and $10\dfrac{\alpha}{3} - 3\dfrac{\beta}{2} = 24$
>
> $\Rightarrow \quad 2\alpha + 5\beta = 38 \qquad\qquad\qquad (1)$
> and $20\,\alpha - 9\beta = 144 \qquad\qquad (2)$
> By solving equation (1) and (2),
> $\alpha = 9$ and $\beta = 4$
> So, $\alpha + \beta = 9 + 4 = 13$

24. "Namami Gange" to clean and protect the river ganga in a comprehensive manner was launched in _____ year.

(A) 2014   (B) 2015   (C) 2016   (D) 2017

Ans. Option (A) is correct.

> *Explanation:* Namami Gange Programme was launched in 2014 by the government with the objective of the rejuvenation of the river Ganga. It focuses on abatement of pollution, conservation and rejuvenation of the river. It is being operated under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti. The mascot of Namami Gange Programme is the cartoon character Chacha Chaudhary. There have been comprehensive interventions in the areas of wastewater treatment, solid waste management, riverfront management (ghats and crematoria development), e-flow, afforestation, biodiversity conservation and Public Participation etc. for the rejuvenation of river Ganga.
> The programme is being operated under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti. It is being implemented by the National Mission for Clean Ganga (NMCG).

25. Match **List - I** with **List - II.**

List - I (Quantity)	List - II (Unit)
(1) Acceleration	(I) newton-meter -2
(2) Pressure	(II) meter -1
(3) Power of Lens	(III) second -1
(4) Frequency	(IV) meter-second -2

Choose the **most appropriate** answer from the options given below:

(A) (1)-(I), (2)-(II), (3)-(III), (4)-(IV)
(B) (1)-(IV), (2)-(I), (3)-(II), (4)-(III)
(C) (1)-(I), (2)-(IV), (3)-(III), (4)-(II)
(D) (1)-(II), (2)-(IV), (3)-(I), (4)-(III)

Ans. Option (B) is correct.

> *Explanation:*
>
> | Quantity | SI Unit |
> |---|---|
> | Acceleration | Meter per second square (m/s^2) |
> | Pressure | Pascal or Newton per metre square (N/m^2) |
> | Power of Lens | Dioptre or (m^{-1}) |
> | Frequency | Hertz or (s^{-1}) |

26. The first Chief Justice of India was?

(A) S.R. Das   (B) N.V. Ramana
(C) Harilal J. Kania   (D) Patanjali Shastri

Ans. Option (C) is correct.

> *Explanation:*
> Harilal J Kania was the first Chief Justice of India (CJI) and he served from 1950–51. CJI is the Chief Judge of Supreme Court of India and is appointed by the President of India. CJI continues to be in the office till the age of 65 years and there is no fixed tenure for the CJI to be in the office. A CJI can be removed by the process of impeachment, which is a constitutional process.
> As of August 2023, the 50th CJI is Dhananjaya Y. Chandrachud.

27. Pointing to a man a lady said "His mother is the only daughter of my mother." How is the lady related to the man?

(A) Aunt   (B) Sister
(C) Daughter   (D) Mother

Ans. Option (D) is correct.

> *Explanation:*
> **According to the question:**
> Lady Mother
> |
> Lady
> |
> Man
> So, the lady itself is the mother of man.

28. 1 kilo Watt-hour (kWh) is equals to
(A) 3.6×10^4 joule   (B) 3.6×10^7 joule
(C) 3.6×10^5 joule   (D) 3.6×10^6 joule

Ans. Option (D) is correct.

> *Explanation:* 1 Kilo Watt-Hour (kWh) is equal to 3.6×10^6 J. kWh is a unit of energy and it is a non SI unit. It is normally used to calculate the electricity bill.

29. In which language most of Ashoka inscription are written?
(A) Sanskrit & Pali   (B) Prakrit & Brahmi
(C) Hindi & Pali   (D) Urdu & Sanskrit

Ans. Option (B) is correct.

> *Explanation:* Ashoka inscriptions are a series of inscriptions that were carved into rocks and pillars during his reign from 268 to 232 BCE. They served as a means to communicate his policies, edicts, and moral teachings to his subjects. These were mostly written in Prakrit language, scripts including Brahmi and Kharosthi. These have provided great insights for historians to study the Mauryan empire during the reign of King Ashoka.
>
> The Ashokan inscriptions or rock edicts are the first tangible evidence of Buddhism. There are 33 inscriptions in all which can be classified as
>
> **I.** Major rock edicts
> **II.** Minor rock edicts
> **III.** Separate rock edicts
> **IV.** Major Pillar edicts
> **V.** Minor pillar edicts

30. In the following four options, in which the problem figure is embedded:

Problem figure
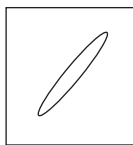
(A)   (B)

(C)   (D)

Ans. Option (A) is correct.
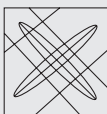
> *Explanation:*
>
>
>
> **Logic:**
> Follow the pattern and the symmetry. Hence,
>
>
>
> is the correct answer.

31. If mean of the numbers 2, (2p + 2), 7, 13, 17, 4 and (p − 1) is 8, then find their median.
(A) 4   (B) 6   (C) 7   (D) 13

Ans. Option (C) is correct.

> *Explanation:*
> **Given:**
> $$\text{Mean} = \frac{2 + (2p + 2) + 7 + 13 + 17 + 4 + (p - 1)}{7} = 8$$
> $\Rightarrow 3p + 44 = 56$
> $\Rightarrow 3p = 12$
> $\Rightarrow p = 4$
> So, ascending order of numbers, 2, 3, 4, 7, 10, 13, 17
> Hence, Median = 7 (Middle value of series)

32. The greatest football player 'Pele' belongs to
(A) Belgium   (B) Argentina
(C) Brazil   (D) Germany

Ans. Option (B) is correct.

> *Explanation:* The greatest football player 'Pele' belongs to Brazil. Pele is the nickname of 'Edson Arantes do Nascimento', who was a professional Brazilian footballer. He is one of the most popular sports figures and was named 'Athlete of the century' by the International Olympic Committee. He served as the sports minister of Brazil. He passed away at the age of 82 years in Brazil.

33. A quadrilateral has vertices in the order $(0, -1)$, $(-2, 3)$, $(6, 7)$ and $(8, 3)$. The quadrilateral is a:
(A) Trapezium   (B) Square
(C) Rhombus   (D) Rectangle

Ans. Option (D) is correct.
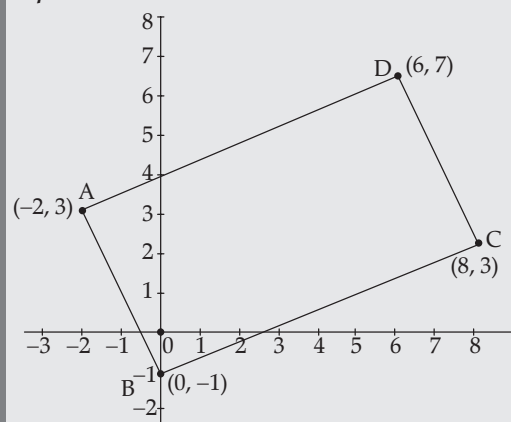
> *Explanation:*
>
>
>
> Slope of AB $= \dfrac{3 - (-1)}{-2 - 0} = -2$
>
> Slope of BC $= \dfrac{3 - (-1)}{8} = \dfrac{1}{2}$
>
> Slope of DC $= \dfrac{7 - 3}{6 - 8} = -2$
>
> As, slope of AB $\times$ slope of BC $= (-2) \times \dfrac{1}{2} = -1$
>
> So, both lines are perpendicular.

Similarly slope of BC × Slope of DC = $(-2) \times \dfrac{1}{2} = -1$

So these two are also perpendicular and AB will also be parallel to DC.

Also, $BC = \sqrt{(8-0)^2 + (3+1)^2} = \sqrt{70}$ units

$DC = \sqrt{(6-8)^2 + (7-3)^2} = \sqrt{20}$ units

All four sides are not equal.
So, we can say that the given quadrilateral is a rectangle.

34. Who wrote the famous novel "The Guide"?

    (A) R.K. Narayan   **(B)** Sarojini Naidu

    (C) B.M. Kaul   **(D)** Vijay Tendulkar

Ans. Option (A) is correct.

Explanation: RK Narayan wrote the famous novel 'The Guide.' He is an Indian novelist and writer in the English language. Some of his notable works are Swami and Friends, The English Teacher, The Guide, The Financial Expert. He also published the shortened version of The Ramayana and The Mahabharata. He was honoured with Sahitya Academy Award, Padma Vibhushan and Padma Bhushan.

Sarojini Naidu was an Indian poet and political activist. She is fondly called the 'Nightingale of India.' She served as the governor of Uttar Pradesh. She was the first Indian woman to be president of the Indian National Congress and to be appointed governor of a state. Some of hier famous works include 'In the Bazaars of Hyderabad', 'The Golden Threshold' and 'The Bird of Time' etc.

Brij Mohan Kaul was Chief of General Staff in the Indian Army during 1961–1962 and was regarded as a key architect of Indian military response to the Chinese challenge. He authored the book 'The Untold Story.'

Vijay Tendulkar was a leading Indian playwright, movie and television writer, literary essayist, political journalist, and social commentator in Marathi language. Some of his famous plays are Shantata! Court Chalu Aahe, Ghāshirām Kotwāl and Sakhārām Binder.

35. Who was the First Female Chief Minister in India?

    (A) Shakuntala Devi   **(B)** Sarojini Naidu

    (C) Anita B. George   **(D)** Sucheta Kripalani

Ans. Option (D) is correct.

Explanation: Sucheta Kripalani was the first female Chief Minister of India. She served the post of CM in Uttar Pradesh from 1963 to 67. She was an Indian freedom fighter and politician.

Shakuntala Devi is popularly known as the 'Human Computer.' She was a mathematician and astrologer who holds 'The Guinness Book of World Records' for her talent of doing complex mathematical calculations mentally and orally. She authored the book 'The World of Homosexual'.

36. Which of the following is correct for divisibility?

    (1) A number is divisible by 6 if it is divisible by 3 or 2.

    (2) A number is divisible by 5 if its unit digit is 0 or 5.

    (3) A number is divisible by 3 if its unit digit is divisible by 3.

    (4) A number is divisible by 4 if the number formed by its last two digits is divisible by 4.

Choose the **correct** answer from the options given below:

    (A) (1), (2) and (4) only

    (B) (2) and (4) only

    (C) (1), (3) and (4) only

    (D) (2) and (3) only

Ans. Option (B) is correct.

Explanation: Divisibility by 3: sum of all digits must be divisible by 3.

divisibility by 4: number formed by last two digits is divisible by 4.

divisibility by 5 : unit digit must be 0 or 5.

divisibility by 6 : number must be divisible by 2 and 3.

So, from given statements only (2) and (4) are true.

37. If $243^{3x} = 27^{(4x-1)}$, then the value of 4^x is:

    (A) 4   **(B)** −4   **(C)** $\dfrac{1}{4}$ **(D)** $\dfrac{1}{16}$

Ans. Option (C) is correct.

Explanation:

    Given: $(243)^{3x} = (27)^{(4x-1)}$

    $\Rightarrow \left(3^5\right)^{3x} = \left(3^3\right)^{(4x-1)}$

    $\Rightarrow 3^{15x} = 3^{12x-3}$

    Comparing both sides, $15x = 12x - 3$

    $\Rightarrow 3x = -3$

    $\Rightarrow x = -1$

    So, $4^x = 4^{-1} = \dfrac{1}{4}$

38. A man walking at a speed of 5 km/h passes a bridge in 15 minutes. What is the length of the bridge (in meters)?

    (A) 1000   **(B)** 1200   **(C)** 1250   **(D)** 1500

Ans. Option (C) is correct.

Explanation:

    Given: Speed of a man = 5 km/h

    Time taken to cross the bridge = 15 mins

    Using: Distance = speed × time

    $= 5 \times \dfrac{5}{18} \times 15 \times 60 = 1250$ m

    So, the length of bridge = 1250 m

39. According to their celebrating months, arrange the following festivals in ascending order in calendar:

    (1) Bihu   **(2)** Pongal

    (3) Holi   **(4)** Christmas

    (5) Onam

Choose the **most appropriate** answer from the options given below:

(A) (2), (1), (3), (4), (5) (B) (2), (3), (1), (5), (4)

(C) (1), (2), (3), (4), (5) (D) (5), (3), (1), (2), (4)

Ans. Option (B) is correct.

> *Explanation:* Bihu is an important festival of Assam and is celebrated in three categories- Bohag Bihu (Farmers start sowing), Kaati Bihu(farmers start cutting and binding of grains), and Magh Bihu (harvesting of grains). Bohag Bihu is observed in April, Kaati Bihu in October or November, and Magh Bihu in January.
>
> Pongal is a Hindu harvest festival dedicated to Sun and is celebrated by Tamils from Sri Lanka and India. According to the Tamil solar calendar, it is observed at the start of Thai month which falls in the month of January. It is a three-four day festival with Bhogi Pongal, Surya Pongal, Mattu Pongal, and Kanum Pongal as the first, second, third, and fourth day.
>
> Holi is the Hindu festival of colours. It signifies the victory of good over evil. According to Hindu calendar, the festival of Holi lasts for a night and day. This festival is observed in the month of Phalguna, which is somewhere in the month of February or March.
>
> Christmas is a Christian festival celebrated on 25 December every year to mark the birth of Jesus Christ.
>
> Onam is a traditional harvest festival of Kerala. It usually falls in the Malayalam month of Chingam, which corresponds to the months of August or September.

40. A certain sum becomes $\frac{36}{25}$ of itself after 2 years on compound interest. Find the rate of interest per annum.

(A) 15 % (B) 20 % (C) 25 % (D) 10 %

Ans. Option (B) is correct.

> *Explanation:*
> **Given that:** time =2 years.
> Let the principal amount = p
> According to the question:
> $$\frac{36}{25}p = p\left(1+\frac{r}{100}\right)^{n}$$
> $$\Rightarrow \frac{36}{25} = \left(1+\frac{r}{100}\right)^{2}$$
> $$\Rightarrow \frac{6}{5} = 1+\frac{r}{100}$$
> $$\Rightarrow \frac{r}{100} = \frac{1}{5} = r = 20\%$$

41. The volumes of 3 solid cubes made of metal are 125 cm³, 64 cm³ and 27 cm³ respectively. After melting all the three cubes a solid cube is made. Find the edge of the new cube.

(A) 2.5 cm (B) 4 cm (C) 6 cm (D) 5 cm

Ans. Option (C) is correct.

> *Explanation:*
> **Given:** Volume of $cube_1$ = 125 cm³
> Volume of $cube_2$ = 64 cm³
> Volume of $cube_3$ = 27 cm³
> After melting, volume of new cube = 125 + 64 + 27 = 216 cm³
> Using, volume of cube = $(Side)^3$
> So, $(side)^3$ =216
> ∴ Side $= \sqrt[3]{216} = 6$ cm

42. Palk Strait Separates which of the following country from India?

(A) Pakistan (B) Bangladesh

(C) Sri Lanka (D) Myanmar

Choose the **most appropriate** answer from the options given below:

(A) (a) only (B) (b) only

(C) (c) only (D) (b) and (c) only

Ans. Option (B) is correct.

> *Explanation:* Palk Strait separates India and Sri Lanka. Strait is a landform that connects two seas or water basins. It lies between Tamil Nadu and the Northern Province of Sri Lanka. It is about 53 to 80 km wide. It connects Bay of Bengal in the Northeast with Palk Bay in the Southwest.

43. Eight persons with an average weight of 49 kg were in a lift. Two more persons Anita and Kamal boarded the lift and the average weight of the persons in the lift increased by 2.8 kg. What is the average weight of Anita and Kamal?

(A) 51.8 kg (B) 54.6 kg

(C) 59 kg (D) 63 kg

Ans. Option (D) is correct.

> *Explanation:*
> Average weight of 8 persons = 49 kg
> ∴ Total weight = 49 × 8
> = 392 kg.
> After adding Anita and Kamal, new average = 49 + 2.8 = 51.8 kg.
> ∴ Total weight of 10 persons = 51.8 × 10 = 518 kg

> So, total weight of Anita & Kamal = 518 – 392 = 126
> So, Average weight of Anita and Kamal
> $= \frac{126}{2} = 63$ kg

44. If CAT is 12, then LION is:

(A) 24 (B) 25 (C) 48 (D) 50

Ans. Option (B) is correct.

> *Explanation:*
> **Logic:**
> C A T = 3 + 1 + 20 = 24 ÷ 2 = 12 [(Sum of the numerical values of given alphabets) ÷ 2]
> So, LION = 12 + 9 + 15 + 14 = 50 ÷ 2 = 25

45. Choose set of numbers from the four alternative sets that is similar to the given set. (8, 12, 18)

(A) (6, 12, 18)   (B) (7, 11, 15)
(C) (7, 11, 17)   (D) (9, 13, 20)

Ans. Option (C) is correct.

> *Explanation:*
> **Logic:**
> (8, 12, 18)
> 8 + 4 = 12
> 12 + 6 = 18
> Similarly,
> 7 + 4 = 11
> 11 + 6 = 17
> So, the required set is (7, 11, 17).

46. Find the missing term in given series.
20: 17:: 104: ?

(A) 52   (B) 55   (C) 59   (D) 61

Ans. Option (C) is correct.

> *Explanation:*
> **Given sequence:** 20:17::104:?
> **Logic:**
> 20 ÷ 2 + 7 = 17
> So, 104 ÷ 2 + 7 = 52 + 7 = 59

47. The angular distance covered by the minute hand in 1 hr 20 minutes is:

(A) 420°   (B) 480°   (C) 192°   (D) 310°

Ans. Option (B) is correct.

> *Explanation:* Angular distance covered by minute hand in 60 minutes = 360°
> Angular distance covered by minute hand in 1 minute = 6°
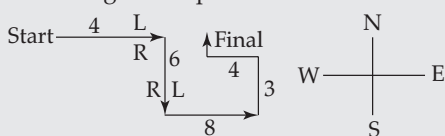> Angular distance covered in = 60 + 20 = 80 minutes = 80 × 6° = 480°

48. A boy runs 4 km to east side then turn right side 6 km, and then turn left runs 8 km again turn left to run 3 km again turn left 4 km, then turn right 1 km. Now the boy is at which direction?

(A) West   (B) South
(C) North   (D) East

Ans. Option (C) is correct.

> *Explanation:*
> According to the question:
>
> The boy is facing north direction.

49. Tickets numbered from 1 to 20 are mixed and a ticket is drawn at random. What is the probability that the ticket drawn bears a number which is a multiple of 3?

(A) $\dfrac{3}{10}$ (B) $\dfrac{3}{20}$ (C) $\dfrac{2}{5}$ (D) $\dfrac{1}{2}$

Ans. Option (A) is correct.

> *Explanation:*
> Multiple of 3 in between 1 to 20 = 3, 6, 9, 12, 15, 18
> So, probability that the ticket drawn bears multiple of $3 = \dfrac{6}{20} = \dfrac{3}{10}$

50. Match **List - I** with **List - II.**

List - I (Prime Minister of India)	List - II (Period)
(1) Lal Bahadur Shastri	(I) 1984 to 1989
(2) Rajiv Gandhi	(II) 1991 to 1996
(3) Atal Bihari Vajpayee	(III) 1964 to 1966
(4) P.V. Narasimha Rao	(IV) 1998 to 2004

Choose the **most appropriate** answer from the options given below:

(A) (1)-(II), (2)-(III), (3)-(IV), (4)-(I)
(B) (1)-(III), (2)-(I), (3)-(IV), (4)-(II)
(C) (1)-(I), (2)-(III), (3)-(II), (4)-(IV)
(D) (1)-(III), (2)-(II), (3)-(IV), (4)-(I)

Ans. Option (B) is correct.

> *Explanation:*
>
> | Prime Ministers of India | Period |
> | --- | --- |
> | Lal Bahadur Shastri | 1964–66 |
> | Rajiv Gandhi | 1984–89 |
> | Atal Bihari Vajpayee | 1998–2004 |
> | PV Narsimha Rao | 1991–96 |

51. Arrange the following in correct chronological order:
(1) Dandi March
(2) Chauri Chaura incident
(3) Quit India Movement
(4) Formation of Indian National Congress
(5) Swadeshi Movement

Choose the **most appropriate** answer from the options given below:

(A) (4), (5), (2), (1), (3)   (B) (1), (3), (2), (4), (5)
(C) (5), (2), (3), (1), (4)   (D) (3), (1), (2), (5), (4)

Ans. Option (A) is correct.

> *Explanation:* On 12th March 1930, Mahatma Gandhi started the 24 day long Dandi March Sabarmati Ashram to Dandi to produce salt from the sea. This was done to defy the salt law of British government.

Chauri Chaura Incident took place on 4th February 1922 at Chauri Chaura in the Gorakhpur district of Uttar Pradesh. The police fired on the protestors participating in the Non-Cooperation movement and in retaliation the protesters had set the police station on fire. This led to the halt of the Non-Cooperation movement on a national level.

Quit India Movement was a civil disobedience movement launched by Mahatma Gandhi and the Indian National Congress on 8th August 1942. The movement aimed to demand an immediate end to British rule in India and achieve full and complete independence. He urged the people of India to engage in civil disobedience in the form of peaceful protests, strikes, demonstrations, and non-cooperation with the British government. The Indian National Congress was founded on 28th December 1885 by Allan Octavian Hume. The first session of INC was conducted from 28th to 31st December 1885 in Bombay.

Swadeshi Movement was launched on 7th August 1905 in Town Hall, Calcutta by Mahatma Gandhi. He urged the people to boycott foreign goods and start using domestic goods.

52. An angle is $\frac{3}{7}$ times its supplementary angles. Find the angle.

(A) 54° (B) 63° (C) 27° (D) 126°

Ans. Option (A) is correct.

Explanation:
Let first angle $= x$

So, the required angle $= \frac{3}{7}x$

Using, sum of supplementary angles $= 180°$

$\Rightarrow x + \frac{3}{7}x = 180°$

$\Rightarrow 10x = 180° \times 7$

$\Rightarrow x = 126°$

$\therefore$ Required angle $= \frac{3}{7} \times 126° = 54°$

53. Find the A.P. whose 3rd term is 18 and 12th term is 72.

(A) 6,12,18 …. (B) 0,9,18 ….
(C) 12,15,18 …. (D) 4.5,9,18 ….

Ans. Option (A) is correct.

Explanation:
Given: 3rd term of A.P. = 18 and 12th term = 72

Using: n^{th} term of A.P. $= a + (n-1)d$

$18 = a + (3-1)d$

$\Rightarrow a + 2d = 18$ (1)

and $72 = a + (12-1)d$

$\Rightarrow a + 11d = 72$ (2)

from equation (1) and (2) $\Rightarrow$

$a = 6$ and $d = 6$

So, required series = 6, 12, 18, ………

54. Is the famous folk dance in Maharashtra.

(A) Kathi (B) Lavani
(C) Jatra (D) Garba

Ans. Option (B) is correct.

Explanation:

Dance type	State
Kathi	**Madhya Pradesh and West Bengal**
Lavani	**Maharashtra**
Jatra	**Odisha and West Bengal**
Garba	**Gujarat**

55. In certain code GONE is written as 4 % 1* and MEDAL is written as 2 * 7$@, then how will 'GOLD' be written in that code?

(A) 4 @ % 7 (B) 4 # @ 7
(C) 4 % @ 7 (D) 4 % # 7

Ans. Option (C) is correct.

Explanation:
GONE = 4 % 1*
MEDAL= 2×7 \$ @
Hence, GOLD= 4 % @ 7

56. Joseph gifted ₹ 20000 to his wife and some money to his three children aged 12,14 and 16 years in the ratio of their ages. If he gave ₹ 3000 to his youngest child, then how much money he gifted to his family?

(A) ₹ 30000 (B) ₹ 30150
(C) ₹ 30225 (D) ₹ 30500

Ans. Option (D) is correct.

Explanation:
Given: Joseph gifted his wife = ₹20000
Ratio in which, he gifted amount to his children = 12 : 14 : 16 = 6 : 7 : 8
According to question,
$6x = 3000$ $x = 500$

So, total amount gifted to children = 500×21
= ₹10500

$\therefore$ Total amount he gifted to his Family = 20000 + 10500
= ₹30500

57. If $\sin\theta + \text{cosec}\theta = 2$, then what is the value of $\sin^2\theta + \text{cosec}^2\theta$?

(A) 4 (B) 8 (C) 2 (D) 16

Ans. Option (C) is correct.

Explanation:
Given: $\sin\theta + \text{cosec}\theta = 2$
Squaring both sides,
$(\sin\theta + \text{cosec}\theta)^2 = 2^2$
$\Rightarrow \sin^2\theta + \text{cosec}^2\theta + 2\sin\theta.\text{cosec}\theta = 4$

$\Rightarrow \sin^2\theta + \csc^2\theta = 4 - 2$ (Since, $\sin\theta$. $\csc\theta = 1$)

$\Rightarrow \sin^2\theta + \csc^2\theta = 2$

58. 'Venus' is to 'Earth' as 'Mercury' is to _____.

(A) Sun **(B)** Pluto
(C) Mars **(D)** Moon

Ans. **Option (A) is correct.**

> *Explanation:* Venus is the planet nearest to Earth. Similarly, Mercury is the planet nearest to Sun.

59. A sum of ₹ 1250 is divided among A, B and C such that A gets $\frac{2}{9}$ of B's share and C gets $\frac{3}{4}$ of A's share. Find the shares of A, B and C (in ₹).

(A) 200, 900, 150 **(B)** 200, 800, 250
(C) 150, 800, 300 **(D)** 190, 850, 210

Ans. **Option (A) is correct.**

> *Explanation:*
>
> Let B's share $= 36x$
>
> then A's share $\frac{2}{9} \times 36x = 8x$
>
> and C's share $\frac{3}{4} \times 8x = 6x$
>
> So, ratio of shares of A, B and C $= 8x : 36x : 6x$
>
> $= 4 : 18 : 3$
>
> So, A's share $\frac{4}{25} \times 1250 = 200$

> B's share $\frac{18}{25} \times 1250 = 900$
>
> C's share $\frac{3}{25} \times 1250 = 150$

60. **Statement (I) :** All children are students. All students are players.
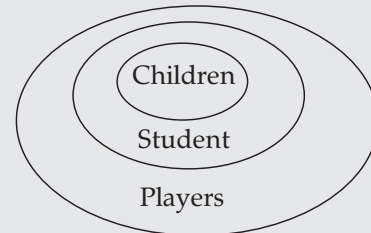
Conclusions (I): All students are children

(II): All children are players

Which of the conclusions follow from the given statements?

(A) Only **I** Follows
(B) Only **II** Follows
(C) Both **I & II** Follows
(D) Neither **I** nor **II** Follows

Ans. **Option (B) is correct.**

> *Explanation:*
>
>
>
> All children are players.
> Hence, only II follows

◆◆◆