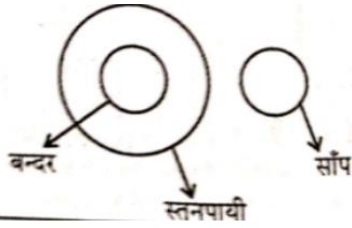
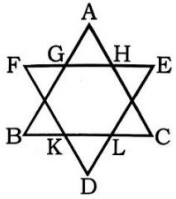


6316 , SOLUTION , RRB NTPC

Ques 1. ANS (A) Solution:



Ques 2. ANS (C) Solution:

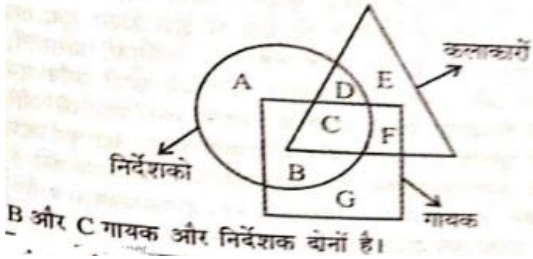


ΔAGH ; ΔEHI ; ΔCIL ; ΔDKL ; ΔBJK ; ΔFGJ ; ΔABC ; ΔDEE

Ques 3. ANS (B) Solution: केवल तर्क। मजबूत है।

Ques 4. ANS (D) Solution: केवल। सही है।

Ques 5. ANS (D) Solution:



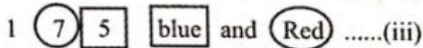
Ques 6. ANS (A) Solution:

प्रश्न आकृति के प्रतिबिम्ब को उत्तर अकृति (a) को पूरा करेगी।

Ques 7. ANS (B) Solution:

प्रश्नानुसार कागज को मोड़कर छेदने तथा खोलने के बाद उत्तर (b) के समान दिखेगी।

Ques 8. ANS (B) Solution:



अतः and = 1

Ques 9. ANS (C) Solution:

Ques 10. ANS (C) Solution:

$$\begin{aligned} + &= \times \\ - &= + \\ \times &= + \\ \div &= - \end{aligned}$$

$13.5 \times 1.5 - 0.008 + 125$ मूल समी0 प्रश्नानुसार

गणितीय चिन्ह परिवर्तन करके हल करने पर

$$\begin{aligned} 13.5 \div 1.5 + 0.008 \times 125 \\ 9 + 1 \\ = 10 \end{aligned}$$

अतः $? \Rightarrow 10$

Ques 11. ANS (D) Solution:

जिस प्रकार,

$$9 + 6 - 5 + 3$$

$$15 - 8 = 7$$

एवं

$$5 + 7 - 2 + 6$$

$$12 - 8 = 4$$

उसी प्रकार,

$$9 + 1 - 3 + 5$$

$$10 - 8$$

$$= 2$$

अतः $? \Rightarrow 2$

Ques 12. ANS (A) Solution:

अक्षर श्रृंखला का क्रम निम्नवत् है।

शब्द OASIS में पहला अक्षर O है।

शब्द NOISE में दूसरा अक्षर O है।

शब्द DRONE में तीसरा अक्षर O है।

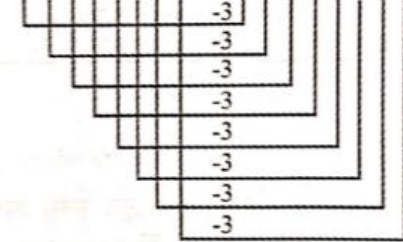
शब्द ALLOT में चौथा अक्षर O है।

अतः अंतिम शब्द AUDIO का पाँचवा अक्षर O होगा।

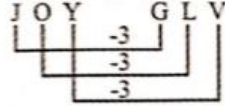
Ques 13. ANS (B) Solution:

जिस प्रकार,

MATERIAL JXQBOFXI



उसी प्रकार,



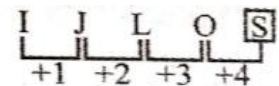
अतः $? \Rightarrow \text{GLV}$

Ques 14. ANS (C) Solution:

अभाज्य संख्याओं का क्रम निम्नवत् है।

101, 103, 107, 109, 113, $\boxed{127}$

Ques 15. ANS (A) Solution:

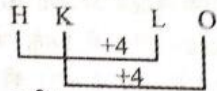


अतः $? \Rightarrow \text{S}$

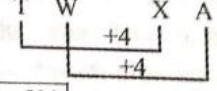
Ques 16. ANS (D) Solution: जिस प्रकार भालू के आवाज को गुर्राना कहते हैं। उसी प्रकार मर्गा के आवाज को ककड कू कहते हैं।

Ques 17. ANS (B) Solution:

जिस प्रकार



उसी प्रकार



अतः $? \Rightarrow \text{XA}$

Ques 18. ANS (B) Solution: संटीग्रेड, फैरन्हाइट और केल्विन ताप मापने के मात्रक है जबकि कैलोरी ऊर्जा मापने का मात्रक है अतः विकल्प (b) अन्य सभी से भिन्न है।

Ques 19. ANS (A) Solution:

माना A = 1, B = 2, C = 3, D = 4, ... Z = 26

RUN = R → 18, U → 21, N → 14 → 182114

इसी प्रकार, BIN → B → 2, I → 9, N → 14 → 2914

इसी प्रकार से, BRING → B → 2, R → 18, I → 9, N → 14,

G → 7 → 2189147 →

Let A = 1, B = 2, C = 3, D = 4, ... Z = 26

RUN = R → 18, U → 21, N → 14 → 182114

Similarly, BIN → B → 2, I → 9, N → 14 → 2914

Similarly, BRING → B → 2, R → 18, I → 9, N → 14, G → 7 → 2189147

Ques 20. ANS (D) Solution: केवल तर्क II मजबूत है।

Ques 21. ANS (C) Solution:



अतः या तो निष्कर्ष I सही है या तो निष्कर्ष II सही है।

Ques 22. ANS (D) Solution:

1 अप्रैल से 30 अप्रैल = 30 दिन

1 मई से 31 मई = 31 दिन

1 जून से 30 जून = 30 दिन

1 जुलाई से 31 जुलाई = 31 दिन

1 अगस्त से 15 अगस्त = 15 दिन

कुल = 202 दिन

अतः विषम दिन = $\frac{202}{7} = \text{शेष} = 6$

∴ 15 अगस्त 1980 का दिन = शनिवार + 6 ⇒ शुक्रवार

Ques 23. ANS (A) Solution:

प्रश्नानुसार अगले बस का समय

= 2.30 + 0.10 = 2.40 बजे

जिस बस से जाना है उसका समय

= 2.40 + 0.45 = [3.25 बजे]

Ques 24. ANS (A) Solution:

प्रश्नानुसार सतीश के पहुंचने का समय

= 8 : 50 - 0 : 20

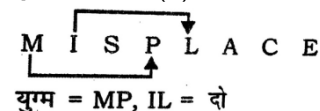
= 8 : 30

बैठक का निर्धारित समय

= 8 : 30 -- (0.40 - 0.30)

= [8:20]

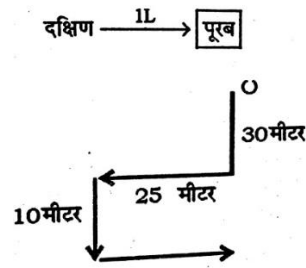
Ques 25. ANS (D) Solution:



Ques 26. ANS (C) Solution:

मेरे (आदमी) के पिता की बेटी आदमी की बहन। आदमी की बहन की बेटी की माँ (औरत) पुनः आदमी की बहन। अर्थात् वह आदमी उस औरत का भाई है।

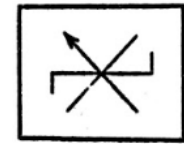
Ques 27. ANS (B) Solution:



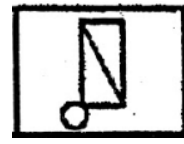
अभीष्ट दिशा 'पूरब' है।

Ques 28. ANS (A) Solution: जिस प्रकार टेलीविजन से टेलीकास्ट किया जाता है, उसी प्रकार रेडियो से प्रसारण किया जाता है।

Ques 29. ANS (A) Solution:



Ques 30. ANS (C) Solution:



Ques 31. ANS (B) Solution: Razmnama is an abridged translation of the Mahabharata written in Persian at the behest of the Mughal Emperor Akbar and dates to around 1598-99. Razmnama is noted for its elaborate and exquisite illustrations.

Ques 32. ANS (B) Solution: The All India Home Rule League was a national political organization founded in 1916 to lead the national demand for self-government, termed Home Rule, and to obtain the status of a Dominion within the British Empire. Between 1916 and 1918, when the war was closing, prominent Indians like Joseph Baptista, Bal Gangadhar Tilak, G. S. Khaparde, Sir S. Subramania Iyer and the leader of the Theosophical Society, Annie Besant decided to organize a national alliance of leagues across India, specifically to demand Home Rule, or self-government within the British Empire for all of India. Tilak founded the first League in the city of Pune, Maharashtra.

Ques 33. ANS (B) Solution: Raja Ravi Varma is related to painting. He was an Indian painter from the princely state of Travancore. His paintings are considered to be among the best example of the fusion of Indian traditions with the techniques of European academic art.

Ques 34. ANS (A) Solution: Giddha is a popular folk dance of women in the Punjab region of India and Pakistan. The dance is often considered derived from the ancient dance known as the ring dance.

Ques 35. ANS (A) Solution: The Supreme Court of India is the highest judicial forum and final court of appeal as established by Part V, Chapter IV of the Constitution of India. According to the Constitution of India, the role of the Supreme Court is that of a federal court and guardian of the Constitution.

Ques 36. ANS (C) Solution: Part III - Fundamental Rights' is a charter of rights contained in the Constitution of India. It guarantees civil liberties such that all Indians can lead their lives in peace and harmony as citizens of India. These include individual rights common to most liberal democracies, such as equality before law, freedom of speech and expression,

and peaceful assembly, freedom to practice religion, and the right to constitutional remedies for the protection of civil rights by means of writs such as Habeas corpus.

Ques 37. ANS (C) Solution: The period during which the House meets to conduct its business is called a session. The Constitution empowers the President to summon each House at such intervals that there should not be more than 6 month's gap between the two sessions. Hence the Parliament must meet at least twice a year.

Ques 38. ANS (B) Solution: The Finance Commission of India is established under Article 280 of the Indian Constitution by the President of India to define the financial relations between the center and the state. It is responsible for the distribution of net proceeds of taxes between the Centre and the States, to be divided as per their respective contributions to the taxes.

Ques 39. ANS (C) Solution: Article 40 directs the State to take steps to organize village Panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-Government. It comes under the Directive Principles of State Policy.

Ques 40. ANS (D) Solution: The equator receives equal day and night throughout the year because it does not tilt in relation to the sun's location. Because of the tilted axis of the Earth, the poles and locations away from the equator lean towards or away from the sun as an orbit is completed, while the equator stays in essentially the same location relative to the sun.

Ques 41. ANS (C) Solution: The interior of the Earth beneath the lithosphere, including both the mantle and the core, is known as barysphere. However, it is sometimes used to refer only to the core or only to the mantle.

Ques 42. ANS (B) Solution: Alluvial soils are fertile soils composed of sediments deposited by rivers and the waves. However, they are usually deficient in nitrogen and humus. Nitrogen deficiency is the main limiting factor in crop production in all the alluvial soils except the calcareous and saline-alkali alluvial soils. With suitable irrigation, fertilizers and proper agricultural practices, alluvial soils are generally very fertile.

Ques 43. ANS (B) Solution: Energy enters an ecosystem by being used to convert low-energy carbon dioxide into high-energy carbohydrate, then passes through one or more of the organisms of the community, and is then lost to the ecosystem. Eventually, all of the energy that enters the ecosystem is lost in the form of heat.

Ques 44. ANS (C) Solution: The Himalayas and, the Western Ghats are known for the rich biodiversity they support. Several species of epidemic plants and animals are found in these zones. After Africa, the Indian peninsula has the richest diversity of life forms on the face of the Earth.

Ques 45. ANS (B) Solution: महायान बौद्ध धर्म की शिक्षों को सरल बनाने हेतु कन्नौज सभा का आयोजन 643 ई. में राजा हर्ष के द्वारा किया गया था।

Ques 46. ANS (B) Solution: Inventory refers to raw materials, work-in-process goods and completely finished goods that are considered to be the portion of a business's assets that are ready or will be ready for sale. Inventory represents one of the most important assets that most businesses possess

because the turnover of inventory represents one of the primary sources of revenue generation and subsequent earnings for the company's shareholders/owners.

Ques 47. ANS (B) Solution: In terms of individual income and wealth, a regressive tax imposes a greater burden on the poor than on the rich. There is an inverse relationship between the tax rate and the taxpayer's ability to pay, as measured by assets, consumption, or income. These taxes tend to reduce the tax burden of the well-to-do, as they shift the burden disproportionately to the needy.

Ques 48. ANS (B) Solution: Since mercury is 13+ times as dense as water, a given volume of mercury would carry about 4.4 times as much heat, so mercury is the best conductor of heat among the given options. It is the only metal that is liquid at standard conditions for temperature and pressure. Mercury has one of the narrowest ranges of its liquid state of any metal. Mercury is used in thermometers, barometers, manometers, sphygmomanometers, float valves, mercury switches, It is used in lighting: electricity passed through mercury vapor in a fluorescent lamp produces shortwave ultraviolet light which then causes the phosphor in the tube to fluoresce, making visible light.

Ques 49. ANS (A) Solution: Sublimation apparatus is a piece of laboratory glassware used in the technique of sublimation usually used by chemists to purify compounds. Typically a solid is placed in a vessel which is then heated under vacuum. Under this reduced pressure the solid volatilizes and condenses as a purified compound on a cooled surface, leaving the non-volatile residue impurities behind. This cooled surface often takes the form of a cold finger. Once heating ceases and the vacuum is released, the sublimed compound can be collected from the cooled surface. Impure camphor is purified by this process.

Ques 50. ANS (B) Solution: The greenhouse effect is a process by which thermal radiation from a planetary surface is absorbed by atmospheric greenhouse gases, and is re-radiated in all directions. Since part of this re-radiation is back towards the surface and the lower atmosphere, it results in an elevation of the average surface temperature above what it would be in the absence of the gases. By their percentage contribution to the greenhouse effect on Earth the four major gases are: water vapor, 36-70%, carbon dioxide, 9-26%, methane, 4-9% and ozone, 3-7%.

Ques 51. ANS (C) Solution: विश्व यूनानी दिवस प्रतिवर्ष 11 फरवरी को मनाया जाता है, इसे यूनानी शोधकर्ता हकीम अजमल खान की जन्म वर्षगांठ के अवसर पर मनाया जाता है। वे एक यूनानी विशेषज्ञ थे। यूनानी दिवस के अवसर पर नई दिल्ली में आयुष मंत्रालय द्वारा यूनानी औषधि पर सम्मेलन का आयोजन किया जा रहा है।

Ques 52. ANS (D) Solution: भारतीय रेलवे ने विशाखापत्तनम रेलवे स्टेशन को छह पर्यावरण श्रेणियों में आंकलन के बाद 'ग्रीन रेलवे स्टेशन' घोषित किया है। विशाखापत्तनम रेलवे स्टेशन ने छह पर्यावरण श्रेणियों में 100 में से 82 अंक हासिल किए। Indian Railways has declared Visakhapatnam Railway Station as 'Green Railway Station' after assessment in six environmental categories. Visakhapatnam Railway Station scored 82 out of 100 in six environmental categories.

Ques 53. ANS (B) Solution: बृहन्मुंबई इलेक्ट्रिक सप्लाय एंड ट्रांसपोर्ट अंडरटेकिंग (BEST) ने 13 फरवरी को मुंबई में भारत की पहली इलेक्ट्रिक वातानुकूलित (एसी)

डबल-डेकर बस का उद्घाटन किया। इस बस की मंजूरी मिलने के बाद, यह बस कुर्ला बस डिपो और बांद्रा-कुर्ला कॉम्प्लेक्स के बीच चलेगी। Brihanmumbai Electric Supply and Transport Undertaking (BEST) inaugurated India's first electric air-conditioned (AC) double-decker bus in Mumbai on 13 February. After the approval of this bus, this bus will ply between Kurla Bus Depot and Bandra-Kurla Complex.

Ques 54. ANS (B) Solution:

भारतीय प्रौद्योगिकी संस्थान (IIT) दिल्ली, इंजीनियरिंग की पढ़ाई के लिए दुनिया के शीर्ष 50 संस्थानों की सूची में शामिल हो गया है। काकारेली साइमंड्स (क्यूएस) की ओर से 'वर्ल्ड यूनिवर्सिटी रैंकिंग्स बाई सब्जेक्ट 2023' जारी की गई है। IIT बॉम्बे ने 25 स्थानों की छलांग लगाकर 92वां स्थान प्राप्त करके गणित में दुनिया के शीर्ष 100 में स्थान बनाया है। Indian Institute of Technology (IIT) Delhi has joined the list of top 50 institutes in the world for engineering studies. The 'World University Rankings by Subject 2023' has been released by Quacquarelli Symonds (QS). IIT Bombay has jumped 25 places to rank 92nd in the world's top 100 in mathematics.

Ques 55. ANS (A) Solution:

इंडियाकास्ट ने पीयूष गोयल को चीफ ऑपरेटिंग ऑफिसर नियुक्त किया है। इंडियाकास्ट एक मल्टी-प्लेटफॉर्म कंटेंट एसेट मोनेटाइजेशन एंटीटी कंपनी है। अपने 20 साल से अधिक के करियर में, गोयल ने स्टार टीवी, नेटवर्क18, एनडीटीवी और डेन नेटवर्क्स जैसी प्रमुख मीडिया कंपनियों के साथ काम किया है। TV18 और Viacom18 के संयुक्त स्वामित्व वाली इंडियाकास्ट (IndiaCast) डोमेस्टिक डिस्ट्रीब्यूशन, प्लेसमेंट सेवाओं जैसी श्रेणियों में काम करती है।

IndiaCast has appointed Piyush Goyal as Chief Operating Officer. IndiaCast is a multi-platform content asset monetization entity company. In his career spanning over 20 years, Goyal has worked with leading media companies such as Star TV, Network18, NDTV and DEN Networks. IndiaCast, jointly owned by TV18 and Viacom18, operates in categories such as domestic distribution, placement services.

Ques 56. ANS (A) Solution: Dadabhai Naoroji, known as the Grand Old Man of India, was a Parsi intellectual, educator, cotton trader, and an early Indian political and social leader. His book Poverty and Un-British Rule in India brought attention to the draining of India's wealth into Britain. He was a Member of Parliament (MP) in the United Kingdom House of Commons between 1892 and 1895, and the first Asian to be a British MP. He is also credited with the founding of the Indian National Congress, along with A.O. Hume and Dinshaw Edulji Wacha.

Ques 57. ANS (A) Solution: A stupa is a mound-like or semi-hemispherical structure containing Buddhist relics, typically the ashes of Buddhist monks, used by Buddhists as a place of meditation. As most characteristically seen at Sanchi in the Great Stupa (2nd-1st century B.C.), the monument consists of a circular base supporting a massive solid dome from which projects an umbrella.

Ques 58. ANS (C) Solution: Right to personal liberty is the bedrock of any democratic set up. In India, the right to life and personal liberty is available to all people and so is the right to freedom of religion. Time and again, the Supreme Court has reiterated that the word liberty is a very comprehensive word.

Ques 59. ANS (D) Solution: Gujarat, in the northwestern region of India, has the longest coastline, covering more than

1,600 km. It accounts for 22% of total coastline of the country. Mot's coast is bordered by the Arabian Sea and the Gulfs of Khambat and Kachchh. Its coastline nurtures a diversity of habitats, especially mangroves, salt marshes, coral reefs, wetlands, and sea grasses.

Ques 60. ANS (A) Solution: The First Amendment of the Constitution of India was enacted in 1951. It made several changes to the Fundamental Rights provisions of the constitution. It provided against abuse of freedom of speech and expression, validation of zamindari abolition laws, etc.

Ques 61. ANS (B) Solution: Concave lens possesses at least one surface that curves inwards. It is a diverging lens, spreading out those light rays that have been refracted through it. A concave lens is thinner at its centre than at its edges, and is used to correct short-sightedness (myopia). After light rays have passed through the lens, they appear to come from a point called the principal focus. The image formed by a concave lens is virtual, upright, and smaller than the object, and it cannot be projected onto a screen.

Ques 62. ANS (A) Solution: A greenhouse gas (sometimes abbreviated GHG) is a gas in an atmosphere that absorbs and emits radiation within the thermal infrared range. The primary greenhouse gases in the Earth's atmosphere are water vapour, carbon dioxide, methane, nitrogenous, and ozone.

Ques 63. ANS (C) Solution:

In order to give more strength and more elasticity, natural rubber is heated with sulphur or sulphur compounds at 1500C temperature. Vulcanized rubber has good tensile strength.

Ques 64. ANS (B) Solution:

रक्षा मंत्री राजनाथ सिंह ने नई दिल्ली में 'एयरो इंडिया 2023' के लिए एंबेसडरों के गोलमेज सम्मेलन की अध्यक्षता की। यह कार्यक्रम रक्षा उत्पादन विभाग, रक्षा मंत्रालय द्वारा आयोजित किया गया था। Defense Minister Rajnath Singh chaired the Ambassadors' Round Table Conference for 'Aero India 2023' in New Delhi. The event was organized by the Department of Defense Production, Ministry of Defence.

Ques 65. ANS (B) Solution:

25 जनवरी 2023 को नई दिल्ली में पहला इंडिया स्टैक डेवलपर सम्मेलन आयोजित किया गया। सम्मेलन के दौरान, दुनिया भर में भारत के डिजिटल सामान को व्यापक रूप से अपनाने को सुनिश्चित करने के तरीकों और साधनों पर चर्चा की गई।

The first India Stack Developer Conference was organized on 25 January 2023 in New Delhi. During the conclave, ways and means to ensure wider adoption of India's digital goods across the world were discussed.

Ques 66. ANS (B) Solution:

केरल की पद्मा लक्ष्मी (Padma Lakshmi) राज्य की पहली ट्रांसजेंडर वकील बन गईं, उन्होंने राज्य की बार काउंसिल के साथ एक वकील के रूप में नामांकन किया है। उनका लक्ष्य गरीबों और हाशिए पर खड़े लोगों के लिए न्याय सुनिश्चित करना है।

Padma Lakshmi from Kerala became the first transgender lawyer in the state, she has enrolled as an advocate with the Bar Council of the state. His goal is to ensure justice for the poor and marginalised.

Ques 67. ANS (B) Solution:

एंजला मर्केल को आइवरी कोस्ट की राजधानी यामौसोक्रो में फेलिक्स हौफौएट-बोगनी यूनेस्को शांति पुरस्कार से सम्मानित किया गया। फेलिक्स

हौफौएट-बोगनी शांति पुरस्कार के लिए जूरी 2015 में मर्केल द्वारा अपने देश को शरणार्थियों के लिए खोलने के साहसी निर्णय से प्रभावित हुई।

Angela Merkel was awarded the Felix Houfouet-Bogni UNESCO Peace Prize in Yamoussoukro, the capital of Ivory Coast. The jury for the Felix Houphouet-Boigny Peace Prize was impressed by Merkel's courageous decision in 2015 to open her country to refugees.

Ques 68. ANS (D) Solution:

हर 25 मार्च को अंतरराष्ट्रीय अजन्मे बच्चे का दिवस मनाया जाता है। यह घोषणा के पर्व के साथ मेल खाता है। यह पहली बार 1993 में अल सल्वाडोर में पैदा होने के अधिकार को मनाने के लिए मनाया गया था। यह विशेष दिवस उन अजन्मे बच्चों का सम्मान करता है जिनकी गर्भपात की भयावहता के परिणामस्वरूप मृत्यु हो गई। यह पोप जॉन पॉल द्वितीय के शासनकाल के दौरान हुआ था। पोप के अनुसार, यह दिन "जीवन के पक्ष में एक सकारात्मक विकल्प" का प्रतिनिधित्व करता है।

International Day of the Unborn Child is celebrated every 25 March. It coincides with the Feast of the Annunciation. It was first celebrated in 1993 in El Salvador to celebrate the right to be born. This special day honors the unborn children who died as a result of the horrors of abortion. This happened during the reign of Pope John Paul II. According to the Pope, the day represents "a positive choice in favor of life".

Ques 69. ANS (D) Solution:

सैन्य नेतृत्व वाली सरकार ने रूस की राज्य परमाणु ऊर्जा कंपनी के साथ एक परमाणु ऊर्जा सूचना केंद्र का उद्घाटन किया है। इसे दक्षिण पूर्व एशियाई राष्ट्र में ऊर्जा की कमी को पूरा करने के लिए परमाणु शक्ति विकसित करने की दिशा में एक कदम के रूप में देखा जा रहा है।

The military-led government has inaugurated a nuclear energy information center with Russia's state nuclear power company. It is being seen as a step towards developing nuclear power to meet the energy shortage in the Southeast Asian nation.

Ques 70. ANS (B) Solution:

लुईस कैफरेली को 2023 का एबेल पुरस्कार दिया गया है। उन्हें यह पुरस्कार गणित में नॉनलीनियर पार्शियल इक्वेशन और फ्री-बाउंड्री प्रॉब्लम को लेकर दिए गए योगदान के लिए दिया गया है। गणित के इस सबसे प्रतिष्ठित पुरस्कार को नोबेल प्राइज के बराबर माना जाता है। पहली बार यह अवॉर्ड 2003 में जिएन पियरे को गणित के कई हिस्सों को आधुनिक बनाने हेतु दिया गया था।

Lewis Caffarelli has been awarded the 2023 Abel Prize. He has been given this award for his contribution to the mathematics of nonlinear partial equations and free-boundary problems. This most prestigious award in mathematics is considered equivalent to the Nobel Prize. For the first time this award was given to Jean Pierre in 2003 for modernizing many parts of mathematics.

Ques 71. ANS (A) Solution:

$$\begin{aligned} \text{दिया गया व्यंजक} &= \frac{(693)^3 - (383)^3}{(693)^2 + 693 \times 383 + (383)^2} \\ &= \frac{(a^3 - b^3)}{(a^2 + ab + b^2)}, \text{ जहाँ } a = 693 \text{ तथा } b = 383 \\ &= (a - b) = (693 - 383) = 310. \end{aligned}$$

Ques 72. ANS (B) Solution:

$$\begin{aligned} \text{अभीष्ट नाप} &= 64 \text{ सेमी}^{\circ}, 80 \text{ सेमी}^{\circ}, 96 \text{ सेमी}^{\circ} \text{ का ल.सं} \\ &= (8 \times 2 \times 2 \times 2 \times 5 \times 3) \text{ सेमी}^{\circ} = 960 \text{ सेमी}^{\circ} \\ &= 9.60 \text{ मीटर.} \end{aligned}$$

8	64, 80, 96
2	8, 10, 12
2	4, 5, 6
	2, 5, 3

Ques 73. ANS (D) Solution:

$$\begin{aligned} [(35)^3 \div 70 \times 12] \div 25 &= 58 \cdot 8 \times x \\ \Rightarrow (35)^2 \times 35 \times \frac{1}{70} \times 12 \times \frac{1}{25} &= 58 \cdot 8 \times x \\ \Rightarrow x &= \frac{35 \times 35 \times 6}{25 \times 58 \cdot 8} = 5. \end{aligned}$$

Ques 74. ANS (D) Solution:

$$\begin{aligned} \text{दिया गया व्यंजक} &= \frac{11}{4} \div \frac{8}{3} \div \frac{13}{12} \\ &= \frac{11}{4} \times \frac{3}{8} \times \frac{12}{13} = \frac{99}{104} \end{aligned}$$

Ques 75. ANS (C) Solution:

0.00000841 से पूर्णांक 841 प्राप्त होगा, जिसका वर्गमूल 29 है। चूँकि दशमलव के 8 स्थान हैं अतः वर्गमूल में दशमलव के 4 स्थान रहेंगे।

$$\sqrt{0.00000841} = 0.0029$$

Ques 76. ANS (B) Solution:

$$\sqrt{256} + \sqrt{x} = 2 \text{ या } \frac{\sqrt{256}}{\sqrt{x}} = 2$$

$$\text{दोनों पक्षों का वर्ग करने पर - } \frac{256}{x} = 4 \text{ या } x = \frac{256}{4} = 64$$

Ques 77. ANS (A) Solution:

आठ क्रमिक सम संख्याओं का औसत = 93

पांचवी संख्या = 93 + 1 + 94

सबसे बड़ी संख्या = 94 + 6 = 100

Ques 78. ANS (A) Solution:

माना अभीष्ट संख्या = x. तब

$$(x \text{ का } 60\%) + 40 = (x \text{ का } 80\%)$$

$$\Rightarrow \left(x \times \frac{60}{100}\right) + 40 = \left(x \times \frac{80}{100}\right) \Rightarrow \frac{4x}{5} - \frac{3x}{5} = 40$$

$$\Rightarrow \frac{x}{5} = 40 \Rightarrow x = 200.$$

अभीष्ट संख्या = 200.

Ques 79. ANS (C) Solution:

माना अभीष्ट संख्या = x. तब

$$x \text{ का } \frac{3}{4} \text{ का } \frac{2}{5} = 204 \Rightarrow x \text{ का } \frac{3}{10} = 204$$

$$\Rightarrow x = \left(204 \times \frac{10}{3}\right) = 680.$$

अभीष्ट संख्या = 680.

Ques 80. ANS (C) Solution:

पिता तथा पुत्री की आयु का योग = (34 X 2) वर्ष

माना 4 वर्ष बाद इनकी आयु क्रमशः 14x वर्ष तथा 5x वर्ष

$$14x - 4 + 5x - 4 = 68 \Rightarrow 19x = 76 \Rightarrow x = 4$$

पुत्री की वर्तमान आयु = (5 X 4 - 4) वर्ष = 16 वर्ष

Ques 81. ANS (D) Solution:

माना समीर की वर्तमान आयु = $8x$ वर्ष तथा तनुज की वर्तमान आयु = $15x$ वर्ष

$$9 \text{ वर्ष बाद इनकी आयु का अनुपात} = \frac{8x + 9}{15x + 9}$$

$$\therefore \frac{8x + 9}{15x + 9} = \frac{11}{18} \Rightarrow -144x + 165x = 162 - 99$$

$$\Rightarrow 21x = 63 \Rightarrow x = 3$$

इनकी आयु में अंतर = $(15x - 8x)$ वर्ष = $7x$ वर्ष = (7×3) वर्ष = 21 वर्ष

Ques 82. ANS (A) Solution:

$$(23)^{2.8+7.2+3.6} = (23)^x \rightarrow (23)^{13.6} = (23)^x \rightarrow x = 13$$

Ques 83. ANS (D) Solution:

माना कि वस्तु का मूल्य x रु० है

$r\%$ वृद्धि होने पर

$$x \times \frac{(100+r)}{100}$$

पुनः $r\%$ कमी होने पर

$$\frac{x(100+r)}{100} \times \frac{(100-r)}{100}$$

प्रश्न से,

$$\frac{x(100^2 - r^2)}{10000} = 1$$

$$= x = \frac{10000}{10000 - r^2}$$

Ques 84. ANS (C) Solution:

यदि संख्या = x हो, तो

$$x \times \frac{75}{100} + 75 = x$$

$$\Rightarrow \frac{3x}{4} + 75 = x$$

$$\Rightarrow x - \frac{3x}{4} = 75$$

$$\Rightarrow \frac{x}{4} = 75$$

$$\Rightarrow x = 4 \times 75 = 300$$

$$\therefore 300 \text{ का } 40\%$$

$$= \frac{300 \times 40}{100} = 120$$

Ques 85. ANS (C) Solution:

वस्तु का क्रय मूल्य = x रुपए

$$\therefore \text{विक्रय मूल्य} = \frac{112x}{100} \text{ रुपए}$$

$$\text{नया क्रय मूल्य} = \frac{9x}{10} \text{ रुपए}$$

$$\text{विक्रय मूल्य} = \frac{9x}{10} \times \frac{130}{100}$$

$$= \frac{117x}{100} \text{ रुपए}$$

$$\therefore \frac{117x}{100} - \frac{112x}{100} = 5.75$$

$$\Rightarrow \frac{5x}{100} = 5.75$$

$$\Rightarrow x = \frac{5.75 \times 100}{5} = 115 \text{ रुपए}$$

$$\therefore \text{अभीष्ट विक्रय मूल्य} = \frac{115 \times 120}{100} = 138 \text{ रुपए}$$

Ques 86. ANS (C) Solution:

वस्तु का लागत मूल्य = x रुपए

$$\therefore x \text{ का } (118 - 115)\% = 18$$

$$\Rightarrow \frac{x \times 3}{100} = 18$$

$$\Rightarrow x = \frac{18 \times 100}{3} = 600 \text{ रुपए}$$

Ques 87. ANS (D) Solution:

माना कि चतुर्थ समानुपाती संख्या x है।

$$12 : 15 :: 48 : x \Rightarrow 12 \times x = 15 \times 48$$

$$\therefore x = \frac{15 \times 48}{12} = 60$$

अतः अभीष्ट संख्या = 60

Ques 88. ANS (B) Solution:

A, B, C की पूंजियों में अनुपात = $\frac{1}{3} : \frac{1}{4} : \frac{1}{5} = 60 \times \frac{1}{3} : 60 \times \frac{1}{4} : 60 \times \frac{1}{5} = 20 : 15 : 12$
माना A, B, C क्रमशः ₹ 20, ₹ 15, ₹ 12 की पूंजी लगाये।

$$\therefore \text{A, B, C के लाभों में अनुपात} = (20 \times 4 + 10 \times 8) : 15 \times 12 : 12 \times 12$$

$$= (80 + 80) : 15 \times 12 : 12 \times 12$$

$$= 160 : 15 \times 12 : 12 \times 12 = 40 : 45 : 36$$

$$\therefore \text{अनुपाती योग} = 40 + 45 + 36 = 121$$

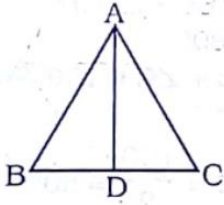
$$\therefore \text{₹ 847 में A का लाभांश} = 847 \times \frac{40}{121} = ₹ 280$$

Ques 89. ANS (C) Solution:

तीनों व्यक्तियों के लाभों में अनुपात = $600 : 800 : 1000 = 3 : 4 : 5$
अनुपाती योग = $3 + 4 + 5 = 12$

$$\therefore 480 \text{ रु० में पहले व्यक्ति का लाभ} = 480 \times \frac{3}{12} = ₹ 120$$

Ques 90. ANS (B) Solution:



ΔABD में,

$$AB^2 = AD^2 + BD^2$$

ΔADC में,

$$AC^2 = AD^2 + CD^2$$

$$\therefore AB^2 + CD^2$$

$$= AD^2 + BD^2 + AC^2 - AD^2$$

$$= AC^2 + BD^2$$

Ques 91. ANS (D) Solution:

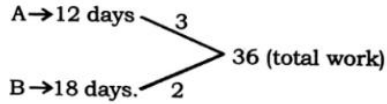
$$AB = BC = k,$$

$$AC = \sqrt{2} k$$

$$AB^2 + BC^2 = k^2 + k^2 = 2k^2 = AC^2$$

$\therefore \Delta ABC$ एक समकोण समद्विबाहु त्रिभुज है।

Ques 92. ANS (D) Solution:



(A+B) work together for 2 days
 $= (3 + 2) \times 2 = 10$ units

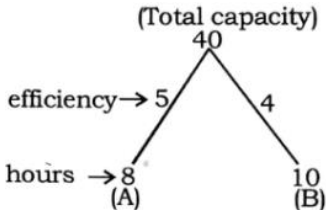
Remaining work = $36 - 10$
 $= 26$ units.

time taken by B to finish the

$$\text{remaining work} = \frac{26}{2}$$

$= 13$ days.

Ques 93. ANS (A) Solution:



(A+B)'s one hour filling (A + B)

$= 9$ unit

(A+B)'s 4 hour filling (A+B)

$= 9 \times 4 = 36$ units

$$\text{Part of tank filled} = \frac{36}{40} = \frac{9}{10}$$

Ques 94. ANS (C) Solution:

$$\frac{A \times 5 \times 2}{100} = \frac{B \times 5 \times 3}{100} = \frac{C \times 5 \times 4}{100} \Rightarrow A \times 2 = B \times 3 = C \times 4$$

$$\therefore A : B : C = \frac{1}{2} : \frac{1}{3} : \frac{1}{4} = \frac{12 \times 1}{2} : \frac{12 \times 1}{3} : \frac{12 \times 1}{4} = 6 : 4 : 3$$

$\therefore A, B, C$ के नाम निवेश राशियों में अनुपात $= 6 : 4 : 3$

Ques 95. ANS (A) Solution:

प्रथम 3 वर्षों के लिए ब्याज दर = 6%, अनन्तर 5 वर्षों के लिए ब्याज दर = 9%
 शेष 3 वर्षों के लिए ब्याज दर = 13% (क्योंकि कुल समय = 11 वर्ष)

$$\therefore \text{उधार ली गयी राशि} = \frac{\text{कुल ब्याज} \times 100}{r_1 + r_2 + r_3} = \frac{8160 \times 100}{(3 \times 6) + (9 \times 5) + (13 \times 3)}$$

$$= \frac{8160 \times 100}{18 + 45 + 39} = \frac{8160 \times 100}{102} = ₹ 8000$$

Ques 96. ANS (C) Solution:

Area of the tank (टैंक का क्षेत्रफल)

$= \text{length} \times \text{breadth}$

$$= 180 \times 120 = 21600 \text{ m}^2$$

Total area of the circular plot

(वृत्ताकार मैदान का कुल क्षेत्रफल)

$$= 40000 + 21600 = 61600 \text{ m}^2$$

area of circle (वृत्त का क्षेत्रफल)

$$= 61600$$

$$\pi (\text{radius})^2 = 61600$$

$$(\text{radius})^2 = \frac{61600 \times 7}{22}$$

$$\text{radius} = \sqrt{2800 \times 7}$$

$$= \sqrt{7 \times 7 \times 400}$$

$$= 7 \times 20 = 140 \text{ m}$$

Ques 97. ANS (C) Solution:

$$\frac{\sin 135 + \cos 120}{\sin 135 - \cos 120} = \frac{\frac{1}{\sqrt{2}} - \frac{1}{2}}{\frac{1}{\sqrt{2}} + \frac{1}{2}} = \frac{\frac{\sqrt{2}-1}{2}}{\frac{\sqrt{2}+1}{2}} = \frac{\sqrt{2}-1}{\sqrt{2}+1} \times \frac{2}{\sqrt{2}+1} = \frac{\sqrt{2}-1}{\sqrt{2}+1}$$

$$= \frac{(\sqrt{2}-1)(\sqrt{2}-1)}{(\sqrt{2}+1)(\sqrt{2}-1)} = \frac{(\sqrt{2}-1)^2}{(\sqrt{2})^2-1} = \frac{2+1-2\sqrt{2}}{2-1} = 3-2\sqrt{2}$$

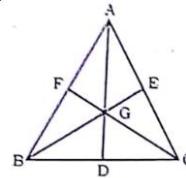
Ques 98. ANS (C) Solution:

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

$\sin^2 \theta$ का अधिकतम मान 1 रखने पर

$$\therefore \text{अभीष्ट न्यूनतम मान} = 3 - 1 = 2$$

Ques 99. ANS (B) Solution:

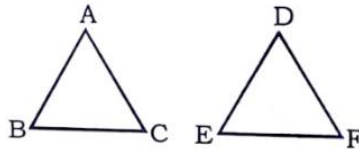


$$\text{Area of } \Delta CGE = \frac{1}{6} \Delta ABC$$

$$= \frac{1}{6} \times 36 = 6 \text{ sq.cm}$$

Ques 100. ANS (B) Solution:

$$\therefore \Delta ABC \cong \Delta DEF$$



$$\therefore \frac{AB}{DE} = \frac{BC}{EF} = \frac{\sqrt{9}}{\sqrt{16}}$$

$$= \frac{2.1}{EF} = \frac{3}{4}$$

$$EF = 2.8 \text{ cm}$$