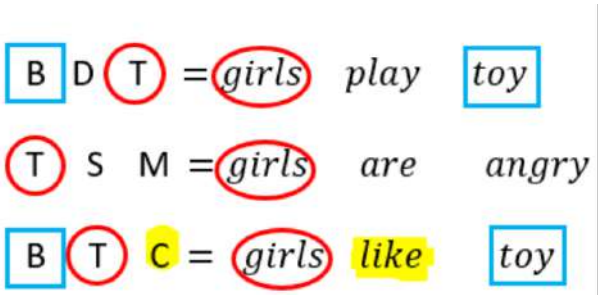
RBE NTPC 2025 Live Mock May 27,2025

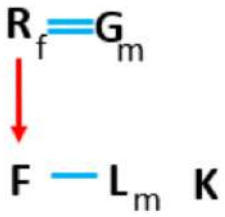
Q. 1	If '*' stands for 'addition', '/' stands for 'subtraction', '+' stands for 'multiplication' and '–' stands for 'division', then find the value of 22 * 10/10 – 2 + 4. **a)** 12 ✓ **b)** 16 ✗ **c)** 10 ✗ **d)** 14 ✗
Explanation:	$22 + 10 - 10 \div 2 \times 4$ $32 - 5 \times 4$ $32 - 20 = 12$

Q. 2	Pick the odd one out. **a)** Cow ✗ **b)** Goat ✗ **c)** Buffalo ✗ **d)** Cat ✓
Explanation:	The correct answer is: Cat • Cow, goat and buffalo – all these are herbivorous domestic animals and commonly known as milk giving animals. • Cat – It is carnivorous and usually domesticated but not a milk-giving animal. So, Cat is different from the other three.

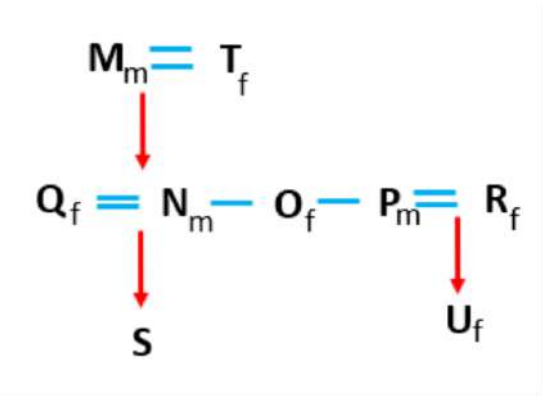
Q. 3	In a certain code language, PEN is written as 8. How will PENCIL be written as in that language? **a)** 14 ✔ **b)** 25 ✘ **c)** 17 ✘ **d)** 15 ✘
Explanation:	PEN = (16+5+14) = 35 = 3 + 5 = 8 PENCIL = (16+5+14+3+9+12)=59 = 5+9 = 14

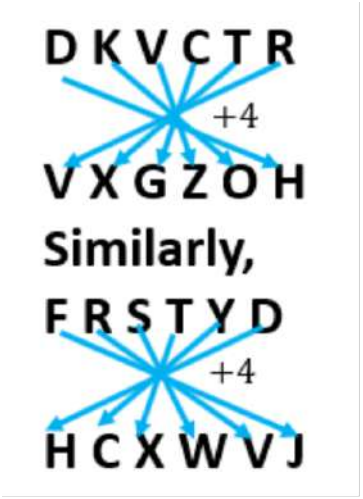
Q. 4	In a certain code language, 'BDT' means 'girls play toy', 'TSM' means 'girls are angry' and 'BTC' means 'girls like toy'. Which of the following letters will mean 'like' in that language? **a)** T ✘ **b)** D ✘ **c)** C ✔ **d)** B ✘
Explanation:	

Q. 5	A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question. Question: Is there a need for an employees union in every government institution? Arguments: I. No, it hinders the smooth operation of the institution. II. Yes, it empowers the rights of the employees. **a)** 1 and 2 both are strong. ✔ **b)** Only 2 is strong. ✘ **c)** Neither 1 nor 2 is strong. ✘ **d)** Only 1 is strong. ✘
Explanation:	The correct answer is: 1 and 2 both are strong. Explanation: • Argument I: "No, it hinders the smooth operation of the institution." ◦ This is a strong argument because employees' unions can sometimes lead to strikes, protests, and bureaucratic delays, which may affect the efficiency of government institutions. • Argument II: "Yes, it empowers the rights of the employees." ◦ This is also a strong argument because unions help employees negotiate better wages, working conditions, and job security, ensuring their rights are protected. Since both arguments present valid points, option 1 (both are strong) is the correct choice.

Q. 6	If R is the mother of F, G is the father of K, L is the brother of F and son of G, then how is R related to G? **a)** Sister ✗ **b)** Husband's Sister ✗ **c)** Mother ✗ **d)** Wife ✓
Explanation:	 R is the wife of G.

Q. 7	In a certain code language, 'Man is mortal' is written as '+ ga lp', 'James is Man' is written as 'lp ga ku', 'James is mortal' is written as 'ku + lp'. What is the code for 'Man James' in that code language. **a)** lp ku ✗ **b)** ku + ✗ **c)** ga ku ✓ **d)** + lp ✗
Explanation:	Man (is) mortal = + *ga* (*lp*) James (is) man = (*lp*) *ga* *ku* James (is) mortal = *ku* + (*lp*)

Q. 8	Read the given information carefully and answer the question that follows. There are 9 members M, N, O, P, Q, R, S, T and U, in a joint family. There are three married couples in the family. N is a doctor and the brother of O and P. Q is the mother of S. T is the wife of M, and M is the grandfather of S. O is the only daughter of M. U is the daughter of P and R. Who is the wife of the doctor? **a)** R ✗ **b)** T ✗ **c)** O ✗ **d)** Q ✓
Explanation:	 N is a doctor and wife of doctor is Q.

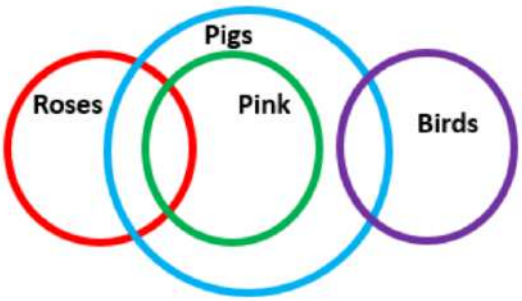
Q. 9	In a certain code language, 'DKVCTR' is written as 'VXGZOH'. What is the code for 'FRSTYD' in that code language? **a)** HBXWMK ✗ **b)** HCXWVJ ✓ **c)** HBXVWK ✗ **d)** HCXWVL ✗
Explanation:	

Q. 10	Among the following words, which one will come second if they are arranged as per their order in an English dictionary? Exit, Exercise, Excuse, Exempt **a)** Exempt ✓ **b)** Exit ✗ **c)** Excuse ✗ **d)** Exercise ✗
Explanation:	1. Excuse 2. Exempt 3. Exercise 4. Exit

Q. 11	Select the option that is related to the third term in the same way as the second term is related to the first term. Plants : Garden : : Animals : ? **a)** Cage ✗ **b)** Pet ✗ **c)** Zoo ✓ **d)** Wild ✗
Explanation:	A garden is a planned space, often outdoors, designed for the cultivation, display, and enjoyment of plants and other forms of nature, encompassing both natural and man-made elements. A zoo, also known as a zoological garden or animal park, is a facility where animals are housed, cared for, and displayed to the public .

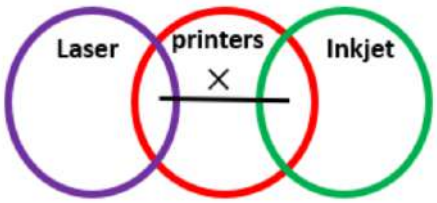
Q. 12	Pick the odd one out. **a)** Glass ✓ **b)** Table ✗ **c)** Cupboard ✗ **d)** Chair ✗
Explanation:	Table, cupboard, and chair are all furniture items, while glass is a material or object, not a piece of furniture.

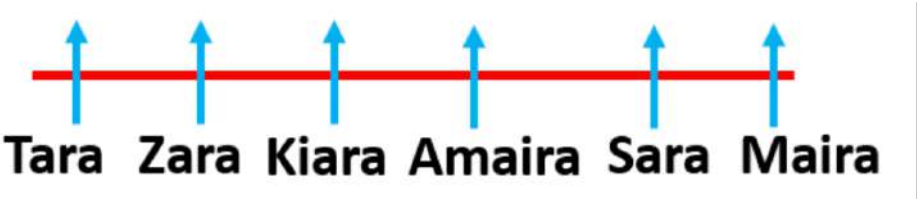
Q. 13	In a certain code language, ADG is written as ZWT. How will BEH be written as in that language? **a)** YVS ✔ **b)** VYS ✘ **c)** SVY ✘ **d)** PQR ✘
Explanation:	A D G ↓ ↓ ↓ *OPPOSITE* Z W T Similarly, B E H ↓ ↓ ↓ *OPPOSITE* Y V S

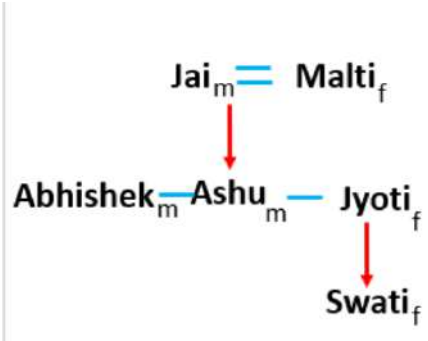
Q. 14	Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements. Statements: Some roses are pink. All pink are pigs. Some pigs are birds. Conclusion: I. Some birds are pink. II. Some pigs are pink. III. Some pigs are roses. IV. Some birds are roses. **a)** Only II and III follow. ✔ **b)** Only I and II follow. ✘ **c)** Only I follows. ✘ **d)** Only IV follows. ✘
Explanation:	I. There is no relation between birds and pink. II. As all pink are pigs so some pigs are pink is true. III. As some roses are pink and all pink are pigs so some pigs are roses is true. IV. There is no relation between birds and roses. 

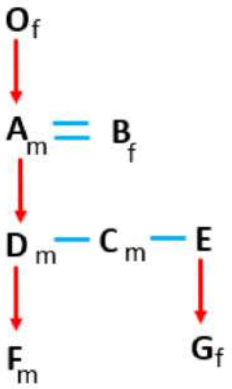
Q. 15	In a certain code language, SHANU is written as 3969. How will TAPLG be written as in that language? **a)** 3166 ✗ **b)** 3945 ✗ **c)** 3939 ✗ **d)** 3136 ✓
Explanation:	SHANU= $(19+8+1+14+21)^2 = 63^2 = 3969$ TAPLG= $(20+1+16+12+7)^2 = 56^2 = 3136$

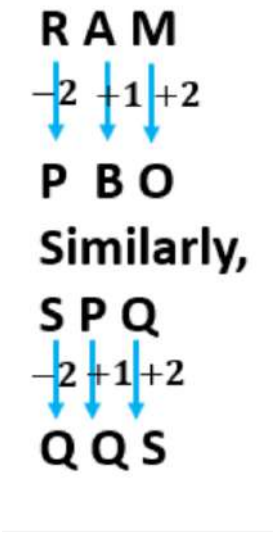
Q. 16	Out of the four numbers listed, three are alike in some manner and one is different . Select the odd one. 67, 41, 39, 17 **a)** 41 ✗ **b)** 67 ✗ **c)** 39 ✓ **d)** 17 ✗
Explanation:	67= Prime number 41= Prime number 39= Not a prime number 17= Prime number

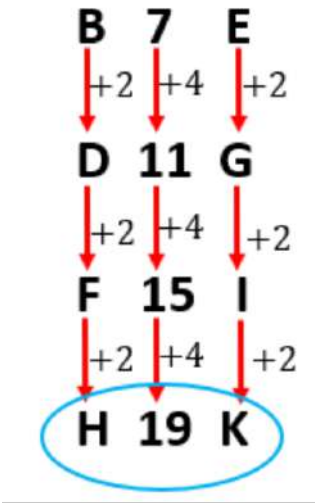
Q. 17	Read the given statements and conclusions carefully and decide which of the conclusions logically follow(s) from the statements. Statements: Some printers are laser Some printers are inkjet No inkjet is a laser Conclusion: I. Some Inkjet are laser. II. Some leaser are inkjet. III. Some laser are not inkjet. **a)** None of I, II and III follows. ✗ **b)** Only I follows. ✗ **c)** Only III follows. ✓ **d)** Only II follows. ✗
Explanation:	I. As no inkjet is a laser so some inkjets are laser is false. II. As no inkjet is a laser so some lasers are inkjet is false. III. As no inkjet is a laser so some lasers are not inkjet is true. 

Q. 18	Six students, Maira, Amaira, Sara, Zara, Tara and Kiara, are made to sit against a wall. All of them are facing north. Amaira is sitting 2nd to the left of Maira. Sara is sitting 4th to the right of Tara. Kiara is sitting to the immediate left of Amaira. Tara is sitting at one of the ends. Which 2 students are sitting at the extreme ends? **a)** Amaira and Kiara ✗ **b)** Tara and Sara ✗ **c)** Tara and Maira ✓ **d)** Tara and Zara ✗
Explanation:	

Q. 19	Abhishek is the brother of Ashu who is the son of Jai. Swati is the daughter of Jyoti. Malti is the mother of Ashu and Jyoti. How is Abhishek related to Swati? **a)** Father ✗ **b)** Brother ✗ **c)** Mother's Brother ✓ **d)** Brother's Son ✗
Explanation:	 Abhishek is the mother's brother of Swati.

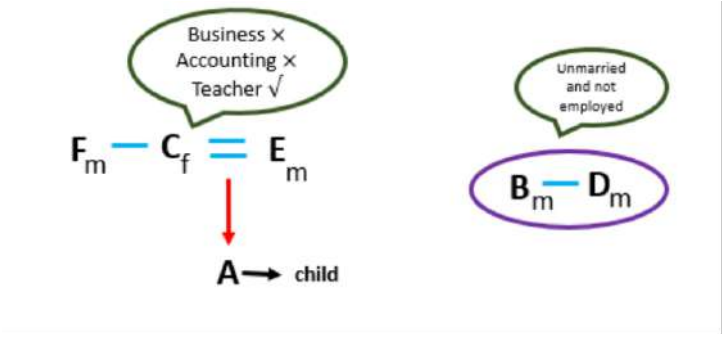
Q. 20	O is the mother of A. B is the mother of C and E. C and D are the brothers and sons of A. G is the daughter of E and cousin of F. F is the son of D. How is B related to F? **a)** Father's Mother ✔ **b)** Mother's Mother ✘ **c)** Mother ✘ **d)** Son's Son ✘
Explanation:	 B is the father's mother of F.

Q. 21	Select the option that is related to the third letter-cluster in the same way as the second letter-cluster is related to the first letter-cluster. RAM : PBO :: SPQ : ? **a)** QQT ✗ **b)** QQR ✗ **c)** QPS ✗ **d)** QQS ✓
Explanation:	

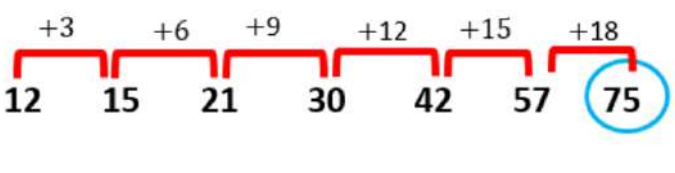
Q. 22	Select the option that can replace the question mark (?) in the following series. B7E, D11G, F15I **a)** H18J ✗ **b)** H19L ✗ **c)** G18I ✗ **d)** H19K ✓
Explanation:	

Q. 23	Select the option that is related to the third number in the same way as the second number is related to the first number. 15 : 8 :: 25 : ? **a)** 16 ✗ **b)** 14 ✗ **c)** 12 ✗ **d)** 10 ✓
Explanation:	

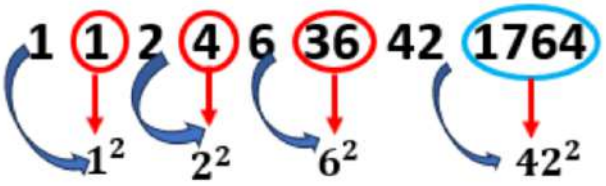
Q. 24	A question is given followed by two arguments. Decide which of the arguments is/are strong with respect to the question. Question: Should education at primary level be in mother tongue? Arguments: 1. Yes, it helps the students to understand the concepts easily. 2. No, finding tuition teachers in mother tongue is difficult. **a)** Neither 1 nor 2 is strong. ✗ **b)** Only 1 is strong. ✓ **c)** Only 2 is strong. ✗ **d)** Both 1 and 2 are strong. ✗
Explanation:	The correct answer is: Only 1 is strong. Explanation: • Argument 1: "Yes, it helps the students to understand the concepts easily." ◦ This is a strong argument because research suggests that children learn better when taught in their mother tongue. It enhances comprehension, cognitive development, and retention of concepts. • Argument 2: "No, finding tuition teachers in mother tongue is difficult." ◦ This is a weak argument because the availability of teachers should not be the primary factor in deciding the medium of instruction. The focus should be on the effectiveness of learning rather than logistical challenges. Since only Argument 1 presents a strong and relevant point, option 2 (Only 1 is strong) is the correct choice.

Q. 25	Read the given information carefully and answer the question that follows. There are six persons A, B, C, D, E and F, in a family. There is one teacher, one business person and one accountant. B and D are unmarried males and are not employed. None of the ladies are in business or accountancy. A is the only child in the family. C is the wife of E, and F is the brother of C. Who is the teacher? **a)** F ✗ **b)** C ✓ **c)** E ✗ **d)** D ✗
Explanation:	 C is the teacher.

Q. 26	Select the option that is related to the third term in the same way as the second term is related to the first term. Author : Pen :: Surgeon : ? **a)** Stitch ✗ **b)** Scalpel ✓ **c)** Operation ✗ **d)** Cut ✗
Explanation:	Pen is a tool used by an author. Similarly, scalpel is a tool used by a surgeon.

Q. 27	Select the number that will come next in the following series. 12, 15, 21, 30, 42, 57, ? **a)** 80 ✗ **b)** 65 ✗ **c)** 67 ✗ **d)** 75 ✓
Explanation:	

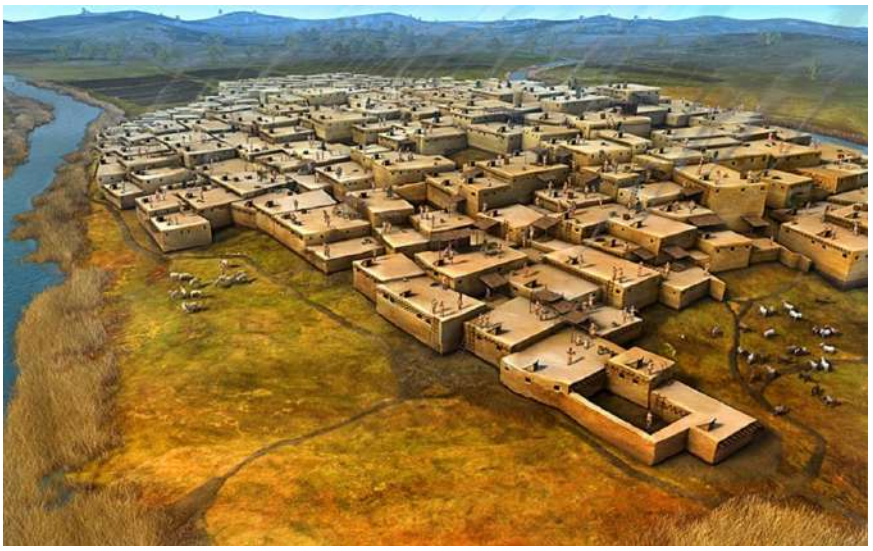
Q. 28	Four words have been given, out of which three are alike in some manner and one is different. Select the odd one. **a)** Dean ✗ **b)** Principal ✗ **c)** Director ✗ **d)** Students ✓
Explanation:	Dean, Principal and Director are authority or administrative roles, while students are learners, not in a position of authority. So, the odd one out is students.

Q. 29	Select the number that can replace the question mark (?) in the following series. 1, 1, 2, 4, 6, 36, 42, ? **a)** 48 ✗ **b)** 1664 ✗ **c)** 168 ✗ **d)** 1764 ✓
Explanation:	

Q. 30	'Cold' is related to 'Refrigerator' in the same way as 'Hot' is related to '_____'. **a)** Air conditioner ✗ **b)** Grinder ✗ **c)** Fire ✗ **d)** Oven ✓
Explanation:	Just like a refrigerator makes things cold, an oven or heater makes things hot.

Q. 31	Which of the following dynasties was the last one to rule over the Vijayanagara Empire? **a)** Sangama ✗ **b)** Saluva ✗ **c)** Tuluva ✗ **d)** Aravidu ✓
Explanation:	The correct answer is d. The Vijayanagara Empire was ruled by four major dynasties: Sangama, Saluva, Tuluva, and Aravidu. The empire was founded by Harihara I and Bukka Raya I of the Sangama dynasty in 1336. Over time, political instability and invasions led to power shifting through different dynasties. The last dynasty to rule over Vijayanagara was Aravidu, established by Tirumala Deva Raya in the late 16th century. This happened after the disastrous defeat of the empire in the Battle of Talikota (1565), where a coalition of Deccan Sultanates devastated Vijayanagara forces, leading to the eventual downfall of the empire. Although the Aravidu rulers attempted to maintain control over the remaining territories, the empire gradually declined, losing influence and power.

Q. 32	During execution, CPU selects and retrieves instructions from the_____. **a)** auxiliary memory ✗ **b)** secondary memory ✗ **c)** main memory ✓ **d)** registers ✗
Explanation:	The correct answer is: c During the execution of a program, the CPU selects and retrieves instructions from the main memory (RAM). The main memory is where active processes and instructions are temporarily stored for quick access by the CPU. Here's an explanation of other options: • Auxiliary Memory: This refers to storage devices like hard drives and tapes, which store data permanently but are too slow for direct CPU execution. • Secondary Memory: This includes SSDs, HDDs, and external drives, which provide long-term storage but are not directly accessed by the CPU during execution. • Registers: While registers are the fastest storage available inside the CPU, they hold only small amounts of data temporarily, like intermediate values during computations. However, the CPU retrieves full instructions from main memory.

Q. 33	In which among the following period Catal Huyuk was one of the most famous sites? **a)** Chalcolithic ✗ **b)** Neolithic ✓ **c)** Mesolithic ✗ **d)** Palaeolithic ✗
Explanation:	The correct answer is: b Çatal Hüyük (or Çatalhöyük) was one of the most significant Neolithic settlements, located in present-day Turkey. It thrived around 7500–5700 BCE, during the Neolithic period, when humans transitioned from a nomadic lifestyle to settled farming communities. Çatal Hüyük was one of the earliest known towns, characterized by mud-brick houses, agriculture, and domestication of animals. It had advanced urban planning, with houses built closely together without streets—people moved around by walking on rooftops. The site also shows signs of religious practices, wall paintings, figurines, and complex burial customs, indicating cultural and social development. 

Q. 34	Which of the following is NOT an output device? **a)** Monitor ✗ **b)** Bar code reader ✓ **c)** Plotter ✗ **d)** Dot matrix printer ✗
Explanation:	The correct answer is: b Explanation: An output device is a piece of hardware that receives data from a computer and presents it in a usable form (like images, text, or sound). Here's how the listed options relate: • Monitor – Displays visual output from the computer, making it an output device. • Plotter – Used for printing high-precision graphics, often for engineering and CAD applications, making it an output device. • Dot matrix printer – Prints documents and images, serving as an output device. • Bar code reader – This is an input device because it scans barcodes and sends the data to the computer. Thus, a Bar code reader is NOT an output device, but an input device.

Q. 35	What is the average thickness of the continental crust of earth? **a)** 300 km ✗ **b)** 30 km ✓ **c)** 5 km ✗ **d)** 2.5 km ✗
Explanation:	The correct answer is: b Explanation: The continental crust is the outermost layer of Earth's surface and is much thicker than the oceanic crust. On average, its thickness ranges from 30 to 50 km, but in some regions, especially under mountain ranges like the Himalayas, it can extend up to 70 km or more. The continental crust is composed mainly of granite and other silicate-rich rocks, which make it less dense compared to the oceanic crust. Its thickness contributes to the stability of continents and influences geological activities such as mountain formation and plate tectonics.

Q. 36	On the basis of total population (Census 2011), arrange the following states in descending order and select the correct option. A. West Bengal B. Maharashtra C. Bihar **a)** B, C, A ✔ **b)** B, A, C ✘ **c)** A, C, B ✘ **d)** A, B, C ✘
Explanation:	The correct answer is: a Explanation: According to the Census 2011, the total population of the three states was: • Maharashtra – 112,374,333 (~112 million) • Bihar – 104,099,452 (~104 million) • West Bengal – 91,276,115 (~91 million) Since Maharashtra had the highest population, followed by Bihar, and then West Bengal, the correct descending order is Maharashtra → Bihar → West Bengal, which matches option B, C, A.

Q. 37	In 1873, the Satyashodhak Samaj was established in _____. **a)** Bihar Province ✗ **b)** Bombay Presidency ✓ **c)** Punjab Province ✗ **d)** Madras Presidency ✗
Explanation:	The correct answer is: b Explanation: The Satyashodhak Samaj was founded in 1873 by Jyotirao Phule in Bombay Presidency (present-day Maharashtra). It was an important social reform movement aimed at eliminating caste-based discrimination and promoting social equality. Key objectives of the Satyashodhak Samaj: • Opposed Brahmin dominance and advocated for equal rights for lower-caste communities, especially the Shudras and Dalits. • Encouraged education among the oppressed classes and fought against social injustices like untouchability and child marriage. • Promoted women's empowerment, supporting gender equality and women's education.

Q. 38	The bare ground between plants is covered with a layer of organic matter in order to retain soil moisture. This method is called _____. **a)** Rock dam ✗ **b)** Shelter belts ✗ **c)** Contour barriers ✗ **d)** Mulching ✓

Explanation:	The correct answer is: d Explanation: Mulching is a soil conservation technique where a layer of organic or inorganic material is spread over bare ground between plants. Its primary purpose is to retain soil moisture, suppress weeds, regulate soil temperature, and prevent erosion. Types of mulch include: • Organic mulch: Includes materials like straw, leaves, compost, bark, and sawdust. These gradually decompose and enrich the soil. • Inorganic mulch: Includes plastic sheets, gravel, and stones, which help control moisture and temperature but do not decompose. <u>Other options explained:</u> Rock Dam A rock dam is a structure made of stones or rocks built to slow down water flow in erosion-prone areas. These dams help prevent soil erosion by reducing the speed of surface runoff, especially in hilly terrains. Unlike mulching, rock dams do not cover the soil between plants but instead act as barriers to protect the land from water damage. Shelter Belts Shelter belts are rows of trees or shrubs planted strategically to protect farmland from strong winds. They help: • Reduce wind erosion. • Improve soil moisture retention by slowing evaporation. • Provide shade and support biodiversity. Contour Barriers Contour barriers are structures built along natural contours of slopes to prevent soil erosion. They can be made of stones, grass strips, or trenches and work by slowing down water runoff. These barriers help trap soil and nutrients, preventing them from being washed away. Like rock dams, contour barriers are erosion control measures, but they do not serve the same purpose as mulching, which helps retain moisture at the plant level.

Q. 39	Which layer of atmosphere helps in radio transmission? **a)** Mesosphere ✗ **b)** Stratosphere ✗ **c)** Thermosphere ✓ **d)** Exosphere ✗

Explanation:	The correct answer is: c Explanation: The Thermosphere contains the ionosphere, a region filled with charged particles that reflect and transmit radio waves. This enables long-distance radio communication by bouncing signals between the Earth and the ionosphere. Without this layer, radio signals would travel directly into space instead of being reflected back. Layers of the Atmosphere: 1. **Troposphere** (0–12 km) • The lowest layer, where all weather phenomena (rain, storms, winds) occur. • Contains 78% nitrogen and 21% oxygen, crucial for life. • Temperature decreases with altitude. 2. **Stratosphere** (12–50 km) • Home to the ozone layer, which absorbs harmful UV radiation. • Aircraft fly here to avoid turbulence. • Temperature increases with altitude due to absorption of sunlight by ozone. 3. **Mesosphere** (50–85 km) • Protects Earth by burning up meteors before they reach the surface. • Considered the coldest layer, with temperatures dropping as low as -90°C. • Temperature decreases with altitude. 4. **Thermosphere** (85–600 km) • Contains the ionosphere, which facilitates radio wave transmission. • The auroras (Northern and Southern Lights) occur in this region. • Temperature increases due to absorption of solar radiation. 5. **Exosphere** (600 km and beyond) • The outermost layer, gradually merging with space. • Contains satellites and very few air molecules. • No definite boundary between atmosphere and space.

Q. 40	Minhaj-i-Siraj was a chronicler during the rule of _____. **a)** Ghiyasuddin Balban ✗ **b)** Alauddin Khalji ✗ **c)** Qutbuddin Aybak ✗ **d)** Sultan Iltutmish ✓
Explanation:	The correct answer is: d Explanation: Minhaj-i-Siraj was a 13th-century Persian chronicler and historian who wrote during the reign of Sultan Iltutmish (r. 1211–1236). He is best known for his work "Tabaqat-i-Nasiri," a detailed historical account covering the early Delhi Sultanate, including the rule of Qutbuddin Aibak, Iltutmish, and subsequent rulers.

Q. 41	The Corbillon Cup is associated with which of the following sports? **a)** Golf ✗ **b)** Hockey ✗ **c)** Table Tennis ✓ **d)** Badminton ✗
Explanation:	The correct answer is: c Explanation: The Corbillon Cup is the women's team trophy in the Table Tennis World Championships. It was named after Marcel Corbillon, a French table tennis official. Major Cups in Table Tennis: • Swaythling Cup – Awarded to the men's team winners in the World Table Tennis Championships. • St. Bride Vase – Given to the men's singles champion. • Geist Prize – Awarded to the women's singles champion. • Iran Cup – Presented to the men's doubles winners. • W.J. Pope Trophy – Given to the women's doubles champions. • Heydusek Cup – Awarded to the mixed doubles winners.

Q. 42	The first session of All India Depressed Classes congress was held at _____ in 1930. **a)** Kanpur ✗ **b)** Surat ✗ **c)** Delhi ✗ **d)** Nagpur ✓
Explanation:	The correct answer is: d Explanation: The first session of the All India Depressed Classes Congress was held in Nagpur in 1930, under the leadership of Dr. B.R. Ambedkar. This organization was formed to advocate for the rights of Dalits and other marginalized communities, ensuring their political representation and social upliftment.

Q. 43	Which water body is adjacent to the Atlantic Ocean, located in the southeast of the Gulf of Mexico? **a)** Arabian Sea ✗ **b)** Baltic Sea ✗ **c)** Caspian Sea ✗ **d)** Caribbean Sea ✓
Explanation:	The correct answer is: d Explanation: The Caribbean Sea is an extension of the Atlantic Ocean, located southeast of the Gulf of Mexico. It is bordered by several countries, including Mexico, Cuba, Haiti, Dominican Republic, and countries in Central & South America. The Caribbean region is known for its beautiful islands, warm tropical waters, and rich marine biodiversity.

Q. 44	Who has been elected as the President of Indian Athletics Federation (As of January 2025)? **a)** Anju Bobby George ✗ **b)** PT Usha ✗ **c)** Adille Sumariwalla ✗ **d)** Bahadur Singh Sagoo ✓
Explanation:	The correct answer is: d Explanation: Bahadur Singh Sagoo was unanimously elected as the President of the Athletics Federation of India (AFI) on 7 January 2025. He succeeded Adille Sumariwalla, who had held the position since 2012. About Bahadur Singh Sagoo: • He is a former shot put champion, having won gold at the 2002 Asian Games in Busan, South Korea. • He has also been a two-time national champion in shot put and represented India at the 2000 Sydney and 2004 Athens Olympics. • He was honoured with the Padma Shri in 2006 for his contributions to Indian athletics. • Before becoming AFI President, he served as the Sports Secretary at Punjab Armed Police, Jalandhar, and is currently a Commandant of the 4th India Reserve Battalion (IRB) in Pathankot.

Q. 45	In which year was India House established by Shyamji Verma? **a)** 1905 ✔ **b)** 1902 ✘ **c)** 1909 ✘ **d)** 1899 ✘
Explanation:	The correct answer is: a Explanation: India House was established in London in 1905 by Shyamji Krishna Varma. It served as a residence and political hub for Indian students and revolutionaries advocating for Indian independence from British rule. Key facts about India House: • It was located at Cromwell Avenue, Highgate, North London. • It provided scholarships to Indian students for higher education in England. • It became a center for revolutionary activities, attracting figures like Vinayak Damodar Savarkar, Bhikaji Cama, and Lala Har Dayal. • It published The Indian Sociologist, a nationalist journal banned by the British government for its anti-colonial stance.

Q. 46	Which city in India is associated with the tea industry? **a)** Panipat, Haryana ✗ **b)** Ahmedabad, Gujarat ✗ **c)** Darjeeling, West Bengal ✓ **d)** Madurai, Tamil Nadu ✗
Explanation:	The correct answer is: c Explanation: Darjeeling is widely known as the "Tea Capital of India" and is famous for producing Darjeeling Tea, which is regarded as one of the finest teas in the world. The tea grown here has a distinct aroma and flavour, often described as "muscatel," due to the unique climate and high-altitude plantations. Key facts about Darjeeling Tea: • It is cultivated in the hilly regions of West Bengal at elevations ranging from 600 to 2,000 meters. • The tea estates here were established by the British in the 19th century for commercial tea production. • Darjeeling Tea is protected under Geographical Indication (GI) status, meaning only tea grown in Darjeeling can be labelled as "Darjeeling Tea."

Q. 47	If the price elasticity of demand is less than one, then the demand for the goods is said to be_____. **a)** Perfectly inelastic ✗ **b)** Inelastic ✓ **c)** Perfectly elastic ✗ **d)** Unitary-elastic ✗
Explanation:	The correct answer is: b Explanation: Price elasticity of demand (PED) measures how much the quantity demanded of a good changes in response to a change in its price. • If PED < 1, demand is inelastic, meaning consumers are less responsive to price changes. Even if the price increases or decreases, the quantity demanded changes only slightly. • Necessities like salt, medicines, and basic food items often have inelastic demand because people buy them regardless of price fluctuations.

Q. 48	Which of the following schemes focuses on reduced imports, increased exports and grassroot campaigns that support local initiatives towards self-reliance? **a)** Samarth Scheme **b)** Vocal for Local **c)** Mission Karmayogi **d)** Skill India Mission
Explanation:	The correct answer is: b Explanation: The Vocal for Local initiative was launched to promote self-reliance (Aatmanirbhar Bharat) by encouraging reduced imports, increased exports, and grassroots campaigns that support local industries and businesses. It aims to: • Boost domestic manufacturing and encourage people to buy Indian-made products. • Strengthen small-scale industries, artisans, and startups. • Promote local businesses in global markets to enhance exports. The initiative aligns with India's larger goal of reducing dependency on foreign goods and making the country a global manufacturing hub.

Q. 49	Which of the following pairs is correctly matched? **a)** Hockey – 10 players in a team **b)** Kabaddi – 9 players in a team **c)** Football – 13 players in a team **d)** Cricket – 11 players in a team
Explanation:	The correct answer is: d Explanation: In cricket, each team consists of 11 players, including batsmen, bowlers, all-rounders, and a wicketkeeper. This has been the standard team size for international and domestic cricket matches across all formats (Test, One-Day, and T20). Why the other options are incorrect? • Hockey – In field hockey, a team has 11 players, including a goalkeeper. • Kabaddi – A Kabaddi team consists of 7 players on the field, with substitutes on the bench. • Football – In football (soccer), each team has 11 players on the field, including a goalkeeper. Thus, Cricket – 11 players in a team is the correct match.

Q. 50	The Units of Linear momentum is measured in _____. **a)** k^2gm/s ✗ **b)** kg^2m/s ✗ **c)** kgm/s ✓ **d)** kgm/s^2 ✗
Explanation:	The correct answer is: c Explanation: Linear momentum (p) is defined as the product of mass (m) and velocity (v): $p = m \times v$ Since mass is measured in kilograms (kg) and velocity is measured in meters per second (m/s), the unit of momentum becomes kg·m/s.

Q. 51	‘I2U2’ initiative is also referred as_____. **a)** East European Quad ✗ **b)** West European Quad ✗ **c)** West Asian Quad ✓ **d)** East Asian Quad ✗
Explanation:	The correct answer is: c Explanation: The I2U2 initiative is a strategic partnership between India, Israel, the United Arab Emirates (UAE), and the United States (USA). It is also referred to as the West Asian Quad because it focuses on economic cooperation, technological collaboration, and regional stability in West Asia. Objectives of I2U2: • Strengthening economic partnerships among the four nations. • Enhancing cooperation in food security, energy, water, transportation, space, and health. • Encouraging private sector investments to modernize infrastructure and promote sustainable development. • Countering China’s influence in the region and fostering regional security.

Q. 52	Mahavir Jayanti is celebrated in the month of_____. **a)** May ✗ **b)** April ✓ **c)** September ✗ **d)** December ✗
Explanation:	The correct answer is: b Explanation: Mahavir Jayanti is celebrated to mark the birth anniversary of Lord Mahavir, the 24th and last Tirthankara of Jainism. It falls on the Trayodashi Tithi (13th day) of Shukla Paksha in the Hindu month of Chaitra, which usually corresponds to March or April in the Gregorian calendar.

Q. 53	In February 2025, where was the Artificial Intelligence Action Summit held, co-chaired by PM Narendra Modi? **a)** New York ✗ **b)** Geneva ✗ **c)** Paris ✓ **d)** Tokyo ✗
Explanation:	The correct answer is: c Explanation: The Artificial Intelligence Action Summit was held in Paris on February 11, 2025, and was co-chaired by Prime Minister Narendra Modi and French President Emmanuel Macron. Key Highlights of the Summit: • The summit focused on global AI governance, sustainability, and innovation. • PM Modi emphasized the need for ethical AI frameworks to prevent bias in AI models. • Discussions included AI for public interest, responsible AI usage, and ensuring safe AI governance. • PM Modi announced that India will host the next AI Summit.

Q. 54	Who was recently sworn in as the US Director of National Intelligence (DNI)? (As of February 2025) **a)** Kamala Harris ✗ **b)** Gina Haspel ✗ **c)** Tulsi Gabbard ✓ **d)** Avril Haines ✗
Explanation:	The correct answer is: c Explanation: Tulsi Gabbard was sworn in as the Director of National Intelligence (DNI) on February 12, 2025. She became the eighth Senate-confirmed DNI and the first female combat veteran to hold the position. Key Facts About Her Appointment: • She was nominated by President Donald Trump and confirmed by the U.S. Senate. • Gabbard previously served as a four-term U.S. Representative from Hawaii and is a U.S. Army Reserve officer. • She emphasized restoring trust in the Intelligence Community, which she claimed had been politicized. • She met with Indian Prime Minister Narendra Modi to discuss bilateral intelligence cooperation on counter-terrorism and cybersecurity

Q. 55	Which of the following minerals is essential for maintaining healthy bones and teeth? **a)** Sodium ✗ **b)** Potassium ✗ **c)** Phosphorus ✓ **d)** Fluoride ✗
Explanation:	The correct answer is: c Explanation: Phosphorus is a key mineral required for strong bones and teeth. It works alongside calcium to maintain bone structure and health. Nearly 85% of the body's phosphorus is found in bones and teeth. Thus, Phosphorus is the correct answer, as it is vital for maintaining bone density and skeletal strength.

Q. 56	What is the difference between a somatic cell and a reproductive cell? **a)** Somatic cells undergo mitotic cell division while reproductive cells undergo meiotic cell division. ✔ **b)** The somatic cells have mitochondria but the reproductive cells do not have any mitochondria. ✘ **c)** Somatic cells do not contain any chromosome while reproductive cells have their own chromosome. ✘ **d)** The somatic cell and reproductive cell are neither diploid nor haploid. ✘
Explanation:	The correct answer is: a Explanation: Cells in the human body can be broadly classified into somatic cells and reproductive cells, with key differences: • Somatic Cells: ◦ Make up all body tissues and organs (skin, muscles, liver, etc.). ◦ Undergo mitotic cell division, meaning they replicate to produce identical daughter cells for growth and repair. ◦ Contain diploid chromosomes (2n)—meaning they have two sets of chromosomes (one from each parent). • Reproductive Cells (Gametes): ◦ These include sperm and egg cells, which are involved in reproduction. ◦ Undergo meiotic cell division, producing haploid cells (n)—meaning they have only one set of chromosomes to ensure proper genetic combination during fertilization.

Q. 57	Which of the following dance forms does NOT belong to Goa? **a)** Goff **b)** Fugdi **c)** Daff **d)** Dashavatara
Explanation:	The correct answer is: c Explanation: Daff is a traditional folk dance and musical form associated with North India, particularly in regions like Uttar Pradesh and Rajasthan. It involves the use of Daff (a percussion instrument), which is played during celebrations and folk performances. Since it is not native to Goa, it does not belong to Goan dance traditions. Why the other options are incorrect? • Goff – A traditional Goan folk dance, performed during festivals. It involves dancers weaving colourful ropes in intricate patterns. • Fugdi – A popular folk dance of Goa, performed by women during religious festivals and celebrations. • Dashavatara – A theatrical dance form in Goa, depicting the ten incarnations of Lord Vishnu.

Q. 58	Which physicist's experiment during a lecture in 1820 showed the connection between electricity and magnetism? **a)** Hans Christian Oersted ✔ **b)** John Cockcroft ✘ **c)** Heinrich Hertz ✘ **d)** William Gilbert ✘
Explanation:	The correct answer is: a Explanation: In 1820, Hans Christian Oersted, a Danish physicist, demonstrated the connection between electricity and magnetism during a lecture. His experiment showed that an electric current flowing through a wire produces a magnetic field, influencing a nearby compass needle. Significance of Oersted's Discovery: • It provided the first experimental evidence that electricity and magnetism are related. • This discovery laid the foundation for electromagnetism, which later led to the development of Maxwell's equations and electric motors. • His experiment inspired further studies by scientists like Faraday and Ampère, shaping the field of electromagnetism.

Q. 59	Which of the following is a colourless liquid whose formula is $CHCl_3$ which evaporates rapidly and turns into gas? **a)** Chloroform ✔ **b)** Ammonia ✘ **c)** Ethanol ✘ **d)** Acetone ✘
Explanation:	The correct answer is: a Explanation: Chloroform is a colourless, volatile liquid with the chemical formula $CHCl_3$. It evaporates rapidly at room temperature and turns into gas. Historically, it was used as an anesthetic, but due to its toxic effects, it is no longer used for medical purposes. Properties of Chloroform: • Non-flammable but can decompose in light to produce toxic phosgene gas. • Evaporates quickly, making it easy to inhale in gaseous form. • Used as a solvent in industries, particularly in refrigeration and pharmaceuticals.

Q. 60	Which of the following statements is correct about output devices of a computer? **a)** Mouse is an output device. **b)** It converts data into digital form. **c)** It is used to send data to a computer. **d)** It converts digital data into human understandable form.
Explanation:	The correct answer is: d Explanation: An output device is a hardware component that receives digital data from a computer and converts it into a form that humans can understand—such as images, text, sound, or physical actions. Examples of Output Devices: • Monitor – Displays images and text. • Speakers – Convert digital audio signals into sound. • Printers – Produce hard copies of digital documents.

Q. 61	Which five year plan aimed to increase the rapid growth in food grains production? **a)** Seventh Five Year Plan ✔ **b)** Eighth Five Year Plan ✘ **c)** Sixth Five Year Plan ✘ **d)** Fifth Five Year Plan ✘
Explanation:	The correct answer is: a Explanation: The Seventh Five Year Plan aimed to achieve rapid growth in food grains production to ensure self-sufficiency in agriculture and reduce dependency on imports. Key Objectives of the Seventh Plan: • Focus on agricultural growth, ensuring food security. • Promotion of modern farming techniques, including High-Yielding Variety (HYV) seeds. • Improvement in irrigation facilities to boost productivity. • Strengthening rural infrastructure for better agricultural output.

Q. 62	Which of the following is an example of a revenue expenditure? **a)** Payment of salaries to government employees ✔ **b)** Investment in a public sector company ✘ **c)** Purchase of land by the government ✘ **d)** Purchase of machinery for a government project ✘
Explanation:	The correct answer is: a Explanation: Revenue expenditure refers to expenses incurred by the government for day-to-day operations, maintenance, and running administrative functions. These expenditures do not create long-term assets but help sustain government services. • Payment of salaries to government employees is a recurring expense essential for administration but does not contribute to asset creation.

Q. 63	Which of the following is a feature of the Indian Constitution? **a)** Double citizenship ✗ **b)** Supremacy of the Parliament ✗ **c)** Unitary Constitution ✗ **d)** Written Constitution ✓
Explanation:	The correct answer is: d Explanation: The Indian Constitution is a written document, which means all its provisions, rights, duties, and governance structures are clearly defined in a single constitutional text. It is one of the longest constitutions in the world, drafted by the Constituent Assembly and enacted on 26 January 1950. Why the other options are incorrect? • Double citizenship – The Indian Constitution provides for single citizenship, meaning all Indians are citizens of India only, unlike countries like the USA, which allow separate state and national citizenship. • Supremacy of the Parliament – In India, the Constitution is supreme, not the Parliament. Parliament cannot override the fundamental structure of the Constitution. • Unitary Constitution – India has a federal structure, meaning power is divided between the central and state governments. However, it has unitary features during emergencies, but is fundamentally federal.

Q. 64	Dribbling skills are NOT used in which of the following sports? **a)** Basketball ✗ **b)** Hockey ✗ **c)** Football ✗ **d)** Chess ✓
Explanation:	The correct answer is: d Explanation: Dribbling is a technique used in sports that involve controlling a ball or puck while moving. It is commonly seen in Basketball, Hockey, and Football (Soccer), where players manoeuvre the ball past opponents while maintaining possession. Chess does not involve physical movement of a ball or puck, as it is a strategic board game focused on tactical thinking and planning moves rather than hand-eye coordination or ball control.

Q. 65	In which year did Rudolf Virchow develop his ideas by publishing his famous formula 'Omnis cellula - ecellula', which became a part of the foundation of cell theory? **a)** 1830 ✗ **b)** 1855 ✓ **c)** 1890 ✗ **d)** 1902 ✗
Explanation:	The correct answer is: b Explanation: In 1855, Rudolf Virchow, a German physician and pathologist, developed his ideas about cell division and published his famous formula: "Omnis cellula e cellula" which means "Every cell originates from another existing cell." Importance of Virchow's Contribution: • His idea refuted the earlier belief that cells arise spontaneously. • It became a fundamental principle of cell theory, alongside contributions from Schleiden and Schwann. • Virchow emphasized that cell division is responsible for growth, repair, and reproduction in living organisms.

Q. 66	A low pitched but louder sound has _____. **a)** lower frequency and higher amplitude ✓ **b)** higher frequency and lower amplitude ✗ **c)** lower frequency and lower amplitude ✗ **d)** higher frequency and higher amplitude ✗
Explanation:	The correct answer is: a Explanation: Sound waves have two key properties that define pitch and loudness: • Frequency (measured in Hertz, Hz) – Determines the pitch of the sound. ◦ Higher frequency → higher pitch ◦ Lower frequency → lower pitch • Amplitude (measured in decibels, dB) – Determines the loudness of the sound. ◦ Higher amplitude → louder sound ◦ Lower amplitude → softer sound

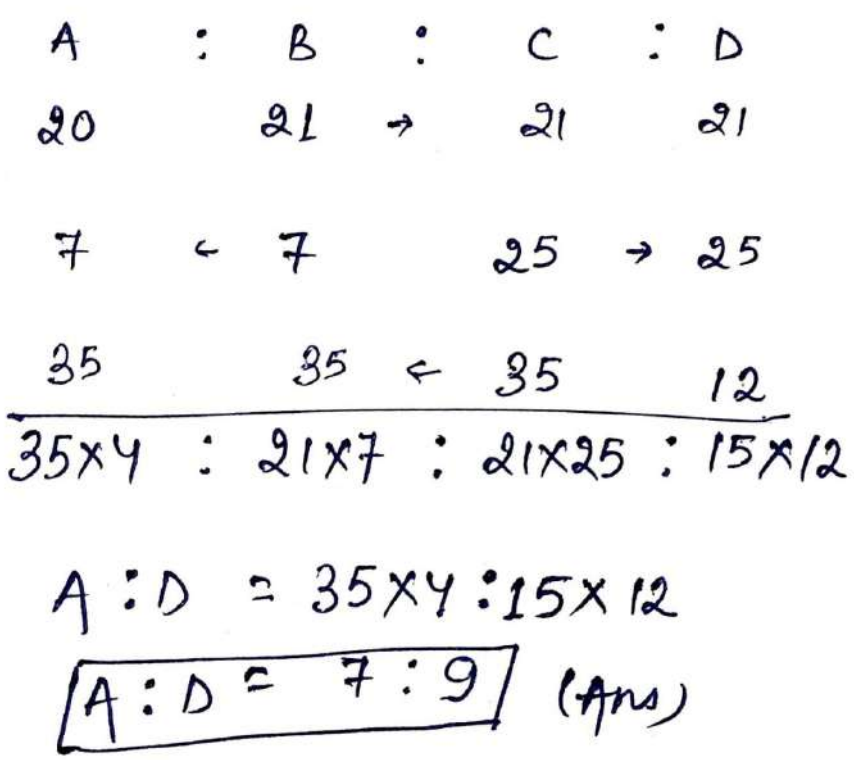
Q. 67	By which Constitutional Amendment Act was the eleventh fundamental duty added to the Indian Constitution? **a)** 84th Amendment Act ✗ **b)** 82nd Amendment Act ✗ **c)** 86th Amendment Act ✓ **d)** 80th Amendment Act ✗
Explanation:	The correct answer is: c Explanation: The 86th Constitutional Amendment Act, 2002, added the eleventh fundamental duty to the Indian Constitution. This duty states that parents or guardians must provide educational opportunities to children aged 6 to 14 years. Key Facts About the 86th Amendment: • It introduced Article 21A, making Right to Education a fundamental right. • It amended Article 45, shifting focus to early childhood care and education. • It added the 11th Fundamental Duty under Article 51A, making it a responsibility of citizens to ensure education for children.

Q. 68	Which of the following states of India is known as 'Molasses basin'? **a)** Tripura ✗ **b)** Manipur ✗ **c)** Nagaland ✗ **d)** Mizoram ✓
Explanation:	The correct answer is: d Explanation: Mizoram is known as the "Molasses Basin" because it is composed of soft, unconsolidated deposits. The state's mountainous geography contains many foreland basins, which are valley-type depressions running parallel to mountains. When these depressions fill up with unconsolidated sediments, they form what is called a Molasses Basin.

Q. 69	In which year was the 'Aatmanirbhar Bharat Rojgar Yojana' launched by the Government of India? **a)** 2020 ✔ **b)** 2022 ✘ **c)** 2015 ✘ **d)** 2010 ✘
Explanation:	The correct answer is: a Explanation: The Aatmanirbhar Bharat Rojgar Yojana (ABRY) was launched on 1st October 2020 by the Ministry of Labour and Employment as part of the Aatmanirbhar Bharat package 3.0. Objectives of ABRY: • Encourage employment generation by providing financial incentives to employers. • Support workers in MSMEs (Micro, Small, and Medium Enterprises) affected by the COVID-19 pandemic. • Reduce the financial burden on employers by covering both employer and employee contributions to the Employees' Provident Fund (EPF).

Q. 70	Who is the author of the book ‘Slumdog Millionaire’? **a)** APJ Abdul Kalam  **b)** Vikas Swarup  **c)** Kiran Desai  **d)** R K Narayan 
Explanation:	The correct answer is: b Explanation: Vikas Swarup, an Indian diplomat and novelist, is the author of the book "Q & A", published in 2005. This novel was later adapted into the Oscar-winning movie "Slumdog Millionaire" (2008), directed by Danny Boyle. Plot Overview: The story follows Jamal Malik, a young boy from the slums of Mumbai, who unexpectedly wins a fortune on the quiz show "Who Wants to Be a Millionaire?". His journey reveals how his life experiences help him answer each question correctly.

Q. 71	If $x^2 + \frac{1}{x^2} = 6$, and $0 < x < 1$, find the value of $x^2 - \frac{1}{x^2}$. **a)** $4\sqrt{2}$ ✗ **b)** $2\sqrt{2}$ ✗ **c)** $-4\sqrt{2}$ ✓ **d)** $-2\sqrt{2}$ ✗
Explanation:	$0 < x < 1$ x is in fraction. $\therefore$ $x^2 - 1/x^2$ is always negative. $x^2 + 1/x^2 = 6$ $\Rightarrow x^2 - 1/x^2 = -\sqrt{(6)^2 - 4}$ $= -4\sqrt{2}$ (Ans)

Q. 72	If A : B = 20 : 21, B : C = 7 : 25, C : D = 35 : 12, then find A : D. **a)** 9 : 8 ✗ **b)** 7 : 9 ✓ **c)** 5 : 6 ✗ **d)** 3 : 5 ✗
Explanation:	

Q. 73

$$\frac{13.25 + \frac{8}{9}\ of\ 63 - 6}{(25 \div 5 \times 10.25) + \frac{150}{19}\ of\ \left(\frac{8}{3} - \frac{7}{5}\right) + 2}$$

a) 5 ✗

b) 1 ✓

c) 3 ✗

d) 2 ✗

Explanation:

$$\frac{13.25 + 8/9 \text{ of } 63 - 6}{(25 \div 5 \times 10.25) + \frac{150}{19} \text{ of } (8/3 - 7/5) + 2}$$

$$\Rightarrow \frac{13.25 + 56 - 6}{(5 \times 10.25) + \frac{150}{19} \times \frac{19}{15} + 2}$$

$$\Rightarrow \frac{63.25}{51.25 + 12} \quad \Rightarrow \frac{63.25}{63.25} = 1$$

Q. 74	The third proportional to 16 and 36 is: **a)** 64 ✗ **b)** 144 ✗ **c)** 49 ✗ **d)** 81 ✓
Explanation:	The correct answer is: d $\frac{16}{36} = \frac{36}{x}$ $x = 81$ Third proportional is 81

Q. 75	Find the sum of the greatest 3-digit number and the smallest 4-digit number that have 24 as their HCF. **a)** 1998 ✗ **b)** 1992 ✓ **c)** 1892 ✗ **d)** 1996 ✗
Explanation:	Greatest 3 digit number divisible by 24 = 984 Smallest 4 digit number divisible by 24 = 1008 Required sum = 984 + 1008 => 1992 Direct:- 24 a + 24 b = 24 (a + b) Answer must be divisible by 24 = 3 * 8 1998-> not divisible by 4. 1992 -> Divisible by both 1892 -> not divisible by 3 1996 -> not divisible by 3

Q. 76	Which of the following statement is correct? I. If amount = Rs. 31500, time = 6 years, and rate of interest = 12.5 percent per annum, then the principal is Rs. 18000 on simple interest. II. If principal = Rs. 26000, amount = Rs. 43200 and time = 5 years, then at simple interest rate of interest is 14 percent per annum. **a)** Both I and II **b)** Neither I nor II **c)** Only I **d)** Only II

Explanation:

Statement I :-

$SI = \frac{18000 \times 12.5 \times 6}{100}$

$\Rightarrow 13,500$

$\therefore$ Amount = 18000 + 13,500

$\Rightarrow 31500$

Statement I is correct.

Statement II :-

$SI = \frac{26000 \times 5 \times 14}{100}$

$\Rightarrow 18,200$

Amount = 26000 + 18,200

$\Rightarrow 44,200$

Statement II is incorrect.

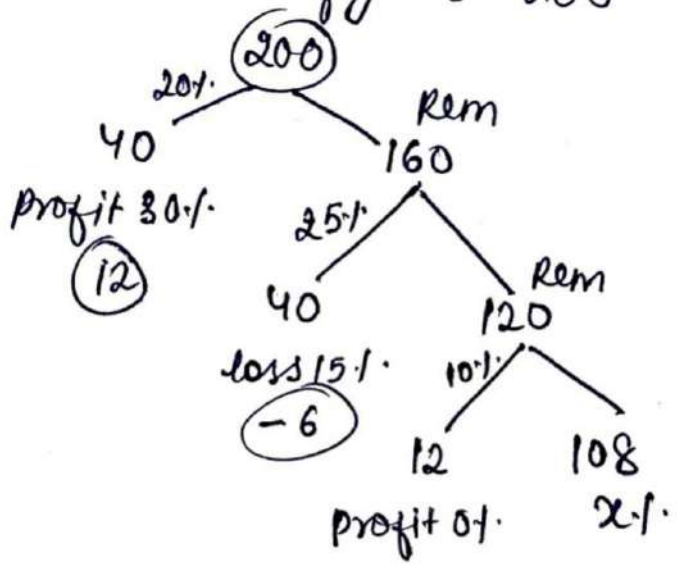
Q. 77	In a firm, the ratio of male and female officers is in the ratio 6 : 5. If 60 male officers and 110 female officers are shifted to another firm, then the ratio of male and female officers becomes 3 : 2. Find the number of male officers before shifting in the firm. **a)** 390 ✗ **b)** 480 ✗ **c)** 420 ✓ **d)** 450 ✗
Explanation:	$\frac{6x-60}{5x-110} = \frac{3}{2}$ $\Rightarrow 12x - 120 = 15x - 330$ $\Rightarrow 3x = 210 \Rightarrow x = 70$ No. of male employee before shifting = $6 \times 70 = 420$ Ans

Q. 78	The number that has factors other than 1 and itself is called a _____ number. **a)** Even ✗ **b)** Odd ✗ **c)** Composite ✓ **d)** Prime ✗
Explanation:	The correct answer is: c A composite number is a positive integer greater than 1 that is not prime, meaning it has more than two positive divisors (i.e., it can be divided by numbers other than 1 and itself).

Q. 79	A trader sells 20% of his goods at 30% profit, 25% of the remaining goods at 15% loss, and 10% of the remaining at the cost price. At what per cent profit should he sell the remaining to earn a 12% profit in the whole transaction? **a)** $14\frac{2}{7}\%$ ✗ **b)** $16\frac{2}{3}\%$ ✓ **c)** $12\frac{1}{4}\%$ ✗ **d)** $8\frac{1}{3}\%$ ✗

Explanation:

let total no. of goods = 200



$\Rightarrow (12 - 6 + 0 + x)$

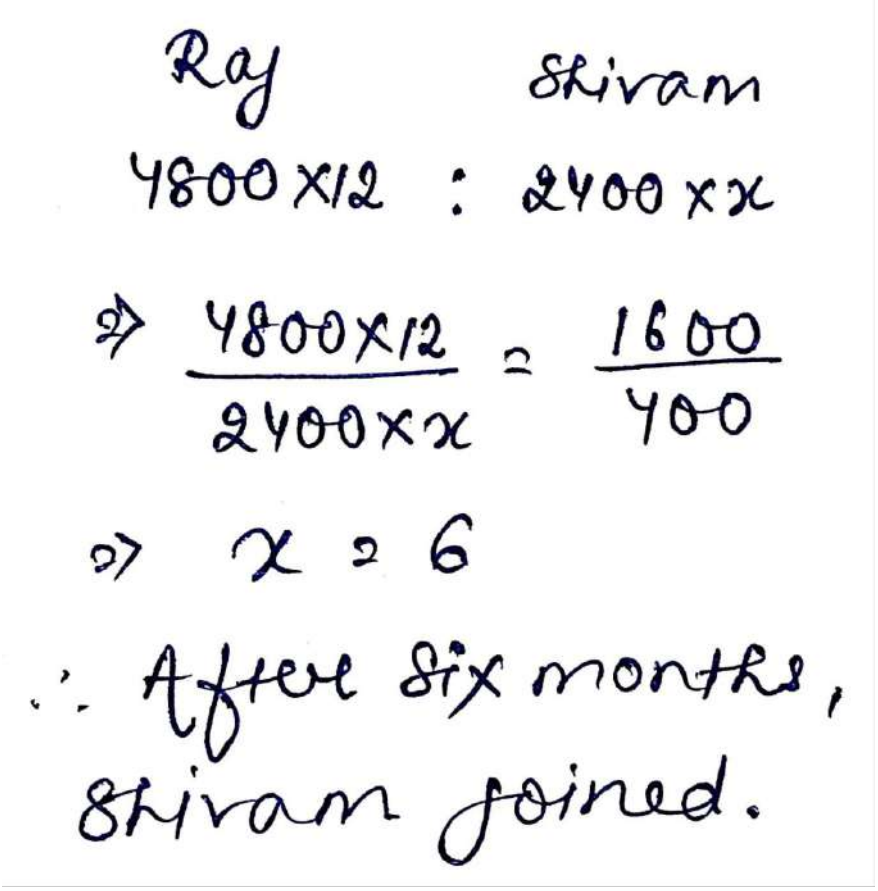
$\Rightarrow 6 + x$

Profit required = 12%

$200 \times 12\% = 24$

$\Rightarrow 6 + x = 24 \Rightarrow x = 18$

$x\% = \frac{18}{108} \times 100 = 16\frac{2}{3}\%$

Q. 80	Raj started a vegetable business with a capital of ₹4800. After few months, Shivam joined him with a capital of ₹2400. Out of the total annual profit of ₹2000, Raj share is ₹1600. When did Shivam join as a partner? **a)** After 4 months ✗ **b)** After 6 months ✓ **c)** After 3 months ✗ **d)** After 8 months ✗
Explanation:	

Q. 81	₹21,700 is distributed among A, B, and C. The share of A is 3/5 of the share of B, and the share of B is 5/6 of the share of C. After receiving their respective sums, C gives some money out of her share to A so that after the transfer, the ratio of the sums A and C have 11 : 20. What part of her initial share did C transfer to A? **a)** $\frac{1}{27}$ ✗ **b)** $\frac{1}{23}$ ✗ **c)** $\frac{1}{31}$ ✓ **d)** $\frac{1}{36}$ ✗

Explanation:

$\frac{A}{B} = \frac{3}{5}$; $\frac{B}{C} = \frac{5}{6}$

$A : B : C = 3 : 5 : 6$

$14 \longrightarrow 21,700$

$1 \longrightarrow 1,550$

$A = 3 \times 1550 \Rightarrow 4,650$

$B = 5 \times 1550 \Rightarrow 7,750$

$C = 6 \times 1550 \Rightarrow 9,300$

$A+C \rightarrow (11+20)$

$(11+20) \rightarrow (4650 + 9300)$

$31 \longrightarrow 13,950 \Rightarrow (450)$

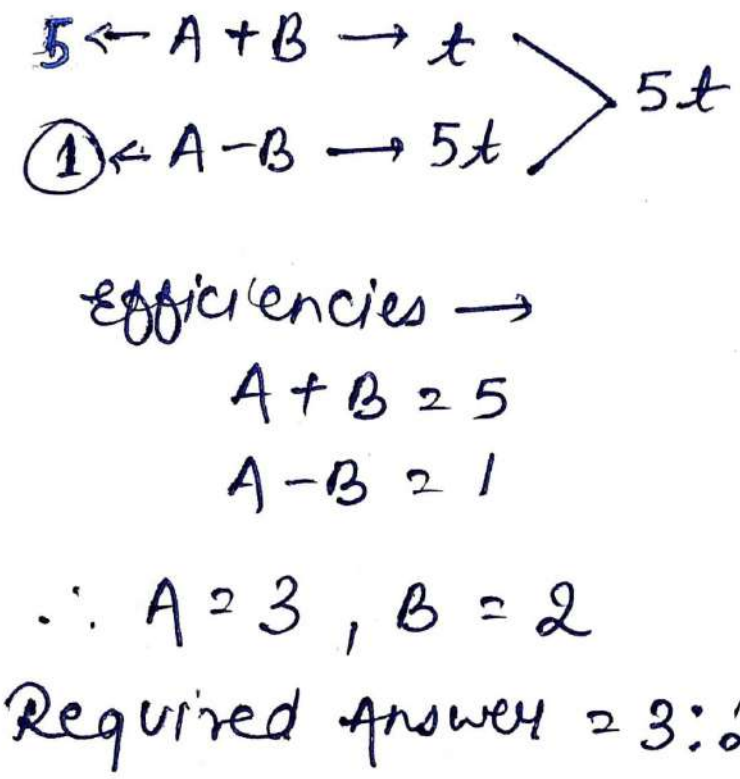
∴ After Transfer,

Share of $A = 11 \times 450 = 4950$

Share of $C = 20 \times 450 = 9000$

∴ 300 were transferred from C to A.

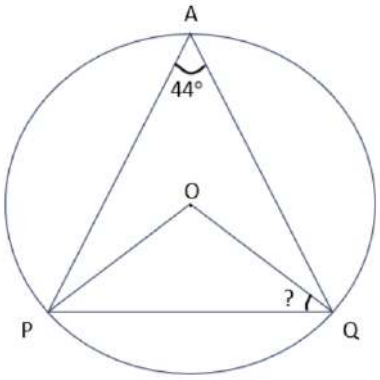
$\Rightarrow \frac{300}{9300} = \left(\frac{1}{31}\right)$ Ans

Q. 82	Pipes A and B are fitted to a tank. A is the filling pipe and B can be used for filling or emptying at the same rate. When B is used for filling, it takes 't' along with A to fill the tank. If it is used for emptying when A is filling the tank, the time taken for the tank to fill up would be '5t'. Find the ratio of the rates of A and B. **a)** 3 : 2 ✔ **b)** 2 : 3 ✘ **c)** 5 : 1 ✘ **d)** 1 : 3 ✘
Explanation:	

Q. 83	If $x^3 + y^3 = 36, x + y = 6,$ find the value of $x^4 + y^4$. **a)** 48 ✗ **b)** 64 ✗ **c)** 72 ✗ **d)** 56 ✓
Explanation:	$x^3+y^3=(x+y)^3-3xy(x+y)$ $\Rightarrow 36=(6)^3-3xy(6)$ $\Rightarrow 36-216=-18xy$ $\Rightarrow 180=18xy \Rightarrow xy=10$ $\Rightarrow x+y=6$ $\Rightarrow x^2+y^2+2xy=36$ $\Rightarrow x^2+y^2=16$ $\Rightarrow x^4+y^4=(x^2+y^2)^2-2x^2y^2$ $\Rightarrow (16)^2-2\times(10)^2$ $\Rightarrow 256-200=56$ (Ans)

Q. 84

In the given figure, PO and OQ are the radius of the circumcircle of Δ APQ. If ∠PAQ = 44°, then ∠PQO will be:



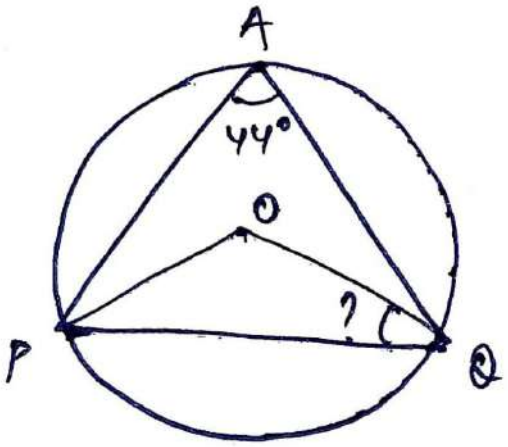
a) 42° ✗

b) 46° ✓

c) 48° ✗

d) 56° ✗

Explanation:



$\angle POQ = 2 \times 44^\circ = 88^\circ$

$\therefore \angle PQO = \angle OPQ = \frac{180^\circ - 88}{2}$

$= 46^\circ$ (Ans)

Q. 85	Find the value of $9 + 7 - 3 \times (9 + 87) - 96 \div 3 + (48 \div 4 + 12 \times 3) \div 12$. **a)** -288 ✗ **b)** 296 ✗ **c)** -308 ✗ **d)** -300 ✓
Explanation:	$9+7-3\times(9+87)-96\div3+(48\div4+12\times3)\div12$ $\Rightarrow 9+7-3\times(96)-32+(12+36)\div12$ $\Rightarrow 16-288-32+4 \Rightarrow 16-288-28$ $\Rightarrow 16-316 \Rightarrow -300$ (Ans)

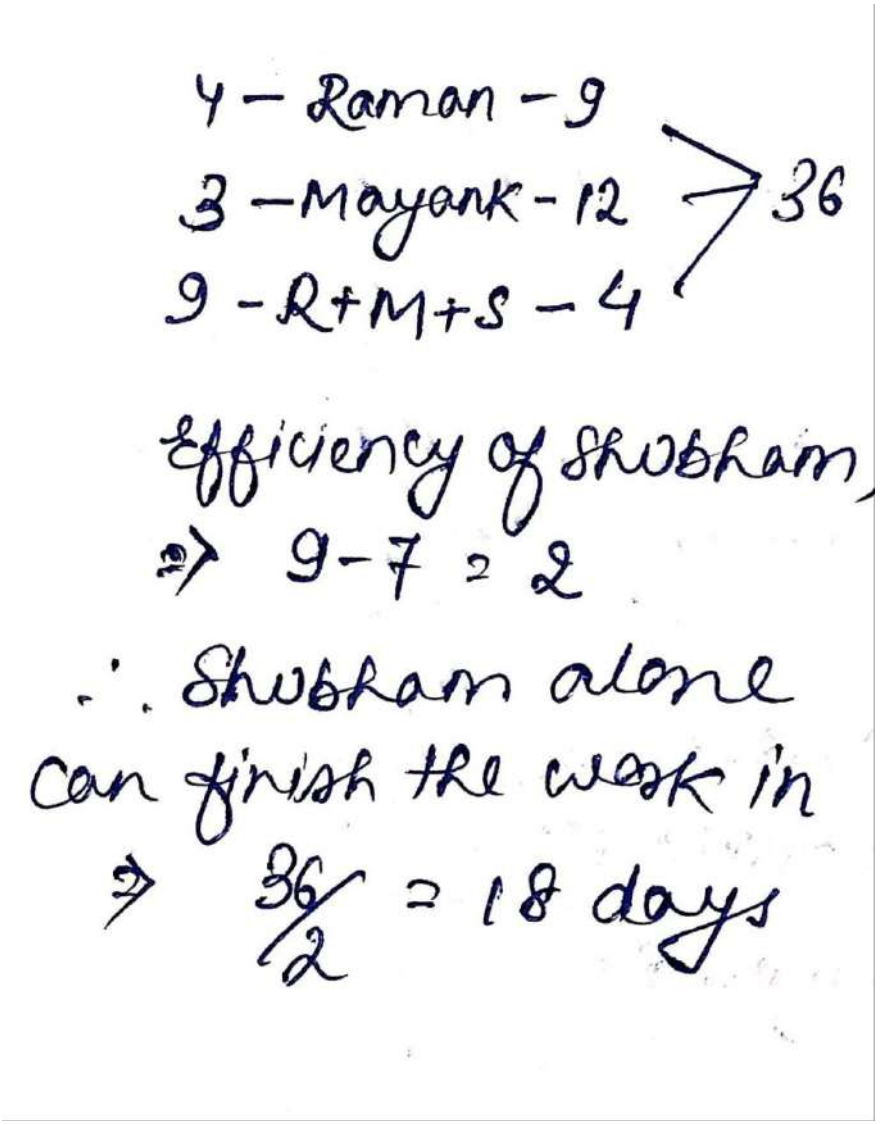
Q. 86	If ${}^{n}C_{11} = {}^{n}C_{10}$, then find n. **a)** 17 ✗ **b)** 19 ✗ **c)** 21 ✓ **d)** 24 ✗
Explanation:	$n_{C_r} = \frac{n!}{(n-r)!\,r!}$ $n_{C_{11}} = n_{C_{10}}$ $\Rightarrow \frac{n!}{11!(n-11)!} = \frac{n!}{10!(n-10)!}$ $\Rightarrow 10!(n-10)! = 11!(n-11)!$ $\Rightarrow 10!(n-10)(n-11)! = 11 \times 10!(n-11)!$ $\Rightarrow n-10 = 11 \Rightarrow n = 21$ (Ans)

Q. 87	Which of the following statements is correct? 1. If a transversal intersects two lines such that a pair of alternate interior angles is equal, then the two lines are parallel. 2. The tangents at the end points of a diameter of a circle are perpendicular. **a)** Only 1 ✓ **b)** Both 1 and 2 ✗ **c)** Only 2 ✗ **d)** None ✗
Explanation:	Explanation: 1. If a transversal intersects two lines such that a pair of alternate interior angles is equal, then the two lines are parallel. • Explanation: This is a fundamental theorem in geometry (the Alternate Interior Angles Theorem). If a transversal cuts two lines and the alternate interior angles are equal, then the lines must be parallel. Thus, the statement is correct. 2. The tangents at the end points of a diameter of a circle are perpendicular. • Explanation: The tangents at the endpoints of a diameter are actually parallel, not perpendicular. This is because both tangents are perpendicular to the diameter (since a tangent is always perpendicular to the radius at the point of contact), and two lines perpendicular to the same line are parallel. Thus, the statement is incorrect. Therefore, only statements 1 is correct.

Q. 88	The speeds of train A and train B are 43.2 km/h and 64.8 km/h, respectively. The lengths of A and B are in the ratio 4 : 5. When running in the opposite direction. They cross each other completely in 15 seconds. How much time (in seconds) will train B take to cross a 470 m long tunnel? **a)** 50 ✗ **b)** 54 ✗ **c)** 36 ✗ **d)** 40 ✓
Explanation:	$\Rightarrow 4x+5x = (43.2+64.8)\times \frac{5}{18} \times 15$ $\Rightarrow 9x = 108 \times \frac{5}{18} \times 15$ $\Rightarrow x = 50$ $\therefore$ length of train A = $4\times50 \Rightarrow 200m$ length of train B = $5\times50 \Rightarrow 250\ m$ $\Rightarrow (470+250) = 64.8\times\frac{5}{18}\times t$ $\Rightarrow 720 = \frac{324}{18}\times t$ $\Rightarrow t = 40$ sec (Ans)

Q. 89	The length, width and height of a cuboid are 6 m, 8 m, and 24 m respectively. What will be the length of the longest stick that can be put inside the cuboid? **a)** 20 ✗ **b)** 24 ✗ **c)** 26 ✓ **d)** 28 ✗
Explanation:	The longest stick that can be put inside the cuboid is $\Rightarrow \sqrt{(6)^2 + (8)^2 + (24)^2} \Rightarrow \sqrt{676}$ => 26 m (Ans)

Q. 90	A train is moving at a speed of 180 km/h. Its speed expressed in m/s is: **a)** 40m/s ✗ **b)** 5 m/s ✗ **c)** 30 m/s ✗ **d)** 50 m/s ✓
Explanation:	The correct answer is: d $180 \times \frac{5}{18} = 50\ m/sec$

Q. 91	Raman can complete a piece of work in 9 days, Mayank can complete the same work in 12 days. In order to complete the work in 4 days, they asked Shubham to join them and were able to finish the work in time. In how many days can Shubham alone finish the work? **a)** 24 days ✗ **b)** 18 days ✓ **c)** 12 days ✗ **d)** 14 days ✗
Explanation:	

Q. 92	If the numerator of a positive fraction is strictly less than the denominator, then the fraction is a/an: **a)** Improper fraction ✗ **b)** Decimal fraction ✗ **c)** Proper fraction ✓ **d)** Integer ✗
Explanation:	The correct answer is Proper fraction. Here's why: • A proper fraction is defined as a fraction where the numerator (the top number) is strictly less than the denominator (the bottom number). For example, 3/5. • An improper fraction occurs when the numerator is equal to or greater than the denominator, such as 5/3. • A decimal fraction typically refers to a fraction where the denominator is a power of 3/10, but this isn't strictly about the relative size of numerator and denominator. • An integer is not a fraction unless the denominator is 1 (e.g., 6/1 = 6). Since we are talking about a numerator strictly less than the denominator, it cannot result in an integer. Thus, if the numerator is strictly less than the denominator, the fraction must be a proper fraction.

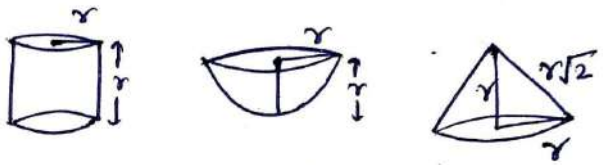
Q. 93	Which of the following fraction falls between 3/4 and 6/7? **a)** 5/9 ✗ **b)** 9/11 ✓ **c)** 9/10 ✗ **d)** 11/9 ✗
Explanation:	The correct answer is: b $\frac{3}{4} = 0.75$ $\frac{6}{7} = 0.85$ $\frac{9}{11} = 0.81$ $\frac{9}{11} lies\ between\ fraction \frac{3}{4} and \frac{6}{7}$

Q. 94	Simplify the following. $\left[\left(1-\frac{1}{2}\right)\left(1-\frac{1}{3}\right)\left(1-\frac{1}{4}\right)....\left(1-\frac{1}{50}\right)\right]^{-0.5}$ **a)** $5\sqrt{10}$ ✗ **b)** $\frac{1}{50}$ ✗ **c)** $5\sqrt{2}$ ✓ **d)** 0.50 ✗
Explanation:	$\left[(1-1/2)(1-1/3)(1-1/4)....(1-1/50)\right]^{-0.5}$ $\Rightarrow \left[1/2 \times 2/3 \times 3/4 ..... 49/50\right]^{-0.5}$ $\Rightarrow (1/50)^{-0.5} \Rightarrow (50)^{1/2}$ $\Rightarrow 5\sqrt{2}$ (Ans)

Q. 95	Consider the average of any five consecutive odd natural as p. If two more consecutive odd numbers, just next to the previous five numbers, are added, then the new average will become: **a)** $2/7\ (p + 1)$ ✗ **b)** $p + 2$ ✓ **c)** $2p - 3$ ✗ **d)** $2p + 1$ ✗
Explanation:	Five consecutive odd natural no. $P-4,\ P-2,\ (P),\ P+2,\ P+4$ Average Two more consecutive odd numbers are added, $P-4,\ P-2,\ P,\ P+2,\ P+4,\ P+6,\ P+8$ $\therefore$ Average $\Rightarrow$ $\frac{(P-4)+(P-2)+P+(P+2)+(P+4)+(P+6)+(P+8)}{7}$ $\Rightarrow \frac{7P+14}{7} \Rightarrow (P+2)$ Ans

Q. 96	Find the unit place digit in the given expression: $(169)^{144} + (137)^{123} + (133)^{510} - (228)^{25}$ **a)** 4 ✗ **b)** 3 ✗ **c)** 5 ✓ **d)** 6 ✗
Explanation:	$9^{44} + 7^{23} + 3^{10} - 8^{25}$ $\Rightarrow 9^4 + 7^3 + 3^2 - 8^1$ $\Rightarrow 1 + 3 + 9 - 8$ $\Rightarrow 5$ (Ans)

Q. 97	If mean is 50 and standard deviation is 6 then C.V (Coefficient of variation) is: **a)** 10% ✗ **b)** 12% ✓ **c)** 15% ✗ **d)** 18.5% ✗
Explanation:	The Coefficient of Variation (C.V) is a measure of relative variability and is calculated as: $C.V = \left(\frac{Standard\ deviation}{Mean} \times 100\right)$ $\Rightarrow C.V = \left(\frac{6}{50} \times 100\right)$ $\Rightarrow 12\%$

Q. 98	Three toys are in shape of cylinder, hemisphere and cone. The three toys have same base. Height of each toy is $5\sqrt{3}$ cm. What is the ratio of total surface areas of cylinder, hemisphere and cone respectively? **a)** $2 : 3 : (2 + \sqrt{3})$ ✗ **b)** $4 : 3 : (1 + \sqrt{2})$ ✓ **c)** $2 : 3 : (1 + \sqrt{2})$ ✗ **d)** $4 : 3 : (2 + \sqrt{3})$ ✗
Explanation:	 $\Rightarrow 2\pi r(r+r) : 3\pi r^2 : \pi r^2 + \pi r \times r\sqrt{2}$ $\Rightarrow 4\pi r^2 : 3\pi r^2 : \pi r^2(1+\sqrt{2})$ $\Rightarrow \boxed{4 : 3 : (1+\sqrt{2})}$

Q. 99

The table shows the percentage of female employees in various departments of a company.

Department	Percentage of Female Employees
Production	55
R & D	60
Purchase	40
Accounts	10
Administration	50
Total	41.51

If accounts department has 198, R & D has 100 male employees, then the total number of female employees in these two departments will be:

a) 172 ✔

b) 144 ✗

c) 185 ✗

d) 168 ✗

Explanation:

% of male employees in Accounts

= 100 − 10 = 90% ⟶ 198

⇒ 10% ⟶ 22

∴ 100% ⟶ 220

Total employees in Accounts

Similarly in R & D

40% ⟶ 100

100% ⟶ 250 Employees

∴ Total female employees

= 10% of 220 + 60% of 250 = 172

Q. 100	Three electronic bells are fixed in three adjoining temples. The priests of these temples decided to ring the bells at different times with the intervals of 3, 4 and 5 min. If the bells start tolling together for the first time at 7:00:00 in the morning, up to 10:00:00 in the morning. Total how times times will the bell ring? **a)** 2 ✗ **b)** 4 ✓ **c)** 3 ✗ **d)** 5 ✗
Explanation:	Lcm of (3,4,5) = 60 min = 1 hr Bell rings every hr. 7 AM, 8 AM, 9 AM, 10 AM. = 4 times