Solution

RRB NTPC 6

Competitive Exams - RRB - Railway Exams

गणित

1.

(c) ₹120

Explanation:

Amount at the end of 2 years $= 240$

Amount at the end of 5 years $= 420$

So, interest earned in 3 years $= 420 - 240$

∴ Interest received in the 1 year $= \frac{180}{3}$

$= ₹60$

So, interest earned in 2 years

$= 60 \times 2 = 120$

Thus, the desired principal = Amount - interest

$= 240 - 120$

$= ₹120$

2.

(b) ₹250

Explanation:

Principal Amount $(P) = 5000$ Rupees, simple interest $= 253.125$, time $= 2$ years

Amount $(A) = 5000 + 253.125$

$= 5253.125$

$P : A = 5000000 : 5253125$

$= 1000000 : 1050625$

For R, $\sqrt{P} : \sqrt{A}$

$\sqrt{1000000} : \sqrt{1050625}$

$P : A$

1 year later $= 1000 : 1025$

Simple Interest = 25

Rate $(R) = \frac{25}{1000} \times 100 = 2.5\%$

Simple Interest $= \frac{5000 \times 2.5 \times 2}{100} = ₹250$

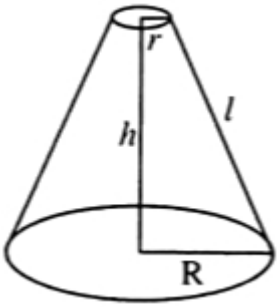
3.

(d) 242.03 square cm

Explanation:

The total surface area of the frustum

$= \pi \left[\left(R^2 + r^2\right) + l(R + r)\right]$



$l =$ Diagonal height of the frustum

$h =$ The height of the frustum

$R =$ Radius of the lower end of the frustum

$r =$ Radius of the upper tip of the snout

$h = 5$ cm

$R = 5$ cm

$r = 3$ cm

$l = \sqrt{h^2 + (R - r)^2} = \sqrt{29}$

Therefore, the desired area $= \pi \left[\left(R^2 + r^2\right) + l(R + r)\right]$

$= \pi[34 + \sqrt{29} \times 8]$

$= \pi[34 + 5.38 \times 8]$

$= \pi[34 + 43.04]$

$= \pi[77.04]$

$= 77.04 \times \frac{22}{7}$

$= 242.03$ cm^2

4.

(d) multiplied by 8.

Explanation:

Suppose, the length of each arm $= a$

According to the question, the length of each arm = $2a$

The volume of the cube $= a^3 = (2a)^3 = 8a^3$

Hence, we can say that the final volume is 8 times the original volume.

5.

(b) 1.98 m

Explanation:

Length ratio $= 7 : 11$

Total length $= 7 + 11 = 18$ unit

According to the question,

7 unit $= 77$ cm $\Rightarrow 18$ unit $= 198$ cm

So the length of the unbreakable stick = 198 cm or 1.98 m

6. **(a)** ₹108

Explanation:

Assuming Arun and Ahana's amount $= 9x$ and $5x$

As per the question,

$\frac{9x-12}{5x+12} = \frac{4}{3}$

$\Rightarrow 27x - 36 = 20x + 48$

$\Rightarrow 7x = 84 \Rightarrow x = 12$

Initially Arun's amount

$= 9x = 9 \times 12 = Rs.\ 108$

7. **(a)** $9 : 1$

   Explanation:

   Let the numbers be x and y.

   $x + y = 20$ ... (1)

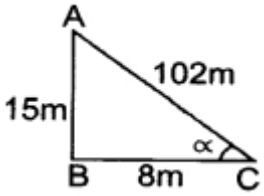
   $x - y = 16$ ... (2)

   Solving equations (1) and (2) we get, $x = 18$ and $y = 2$

   Therefore, the ratio of a large number to a small number is $= 9 : 1$

8. **(d)** 90 m

   Explanation:

   $\tan\alpha = \frac{15}{8} = \frac{p}{b}$

   $h = \sqrt{15^2 + 8^2} = \sqrt{289} = 17$

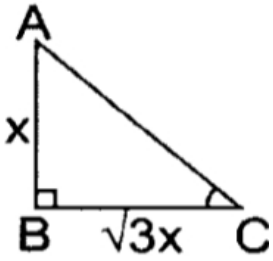
   A / Q,

   17 unit $= 102\ m$

   $\Rightarrow 15$ unit $= \frac{102}{17} \times 15 = 90\ m$

9. **(d)** 30°

   Explanation:

   $\tan C = \frac{AB}{BC} = \frac{x}{\sqrt{3}x}$

   $\tan C = \frac{1}{\sqrt{3}}, \angle C = 30^\circ$

   Hence the angle of elevation from the sun $= 30^\circ$

10. **(a)** 100%

    Explanation:

    Profit = Sales Price - Purchase Price

    $P = S - C$ ...(1)

    $3P = 2S - C$ ...(2)

    By subtracting from equation (2), (1),

    $2P = S \Rightarrow P = \frac{S}{2}$

    Put the value of P in equation (1),

$\frac{S}{2} = S - C \Rightarrow C = \frac{S}{2}$

$\frac{\text{selling price}}{\text{purchase price}} = \frac{2}{1}$,

Profit% $= \frac{1}{1} \times 100 = 100\%$

11. **(a)** ₹ 17,500

Explanation:

Suppose, Cost price = 100 units

Loss $\% = 25\% = 25$ Unit

Sale price $= 100 - 25 = 75$ Unit,

According to the question,

75 units is equal to 52500

Loss $= \frac{52500}{75} \times 25 = ₹\, 17,500$

12.

(d) ₹ 285

Explanation:

Price per kg of rice $= \frac{1710}{38} = 45$

Suppose, the selling price per kg of rice $= x$

According to the question,

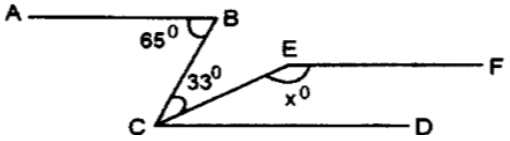
$1710 + 8x = 38x$

$30x = 1710 \Rightarrow x = 57$

Selling price of 5 kg rice = 5 $\times$ 57 = 285

13. **(a)** 148°

Explanation:



In the figure given, $AB \| CD \| EF$

$\angle ABC = \angle BCD$

$\angle BCD = 65^\circ$

$\angle DCE = 65^\circ - 33^\circ = 32^\circ$

$\angle DCE + \angle CEF = 180^\circ$

$32^\circ + \angle CEF = 180^\circ$

$\angle CEF = 180^\circ - 32^\circ = 148^\circ$

Therefore, the value of x is $= 148^\circ$

14. **(a)** 1980°

Explanation:

The number of diagonals of a polygon $= \frac{n(n-3)}{2}$ $\frac{n(n-3)}{2} = 65$

$\Rightarrow n^2 - 3n - 130 = 0$

$\Rightarrow n^2 - 13n + 10n - 130 = 0$

$\Rightarrow (n - 13)(n + 10) = 0 \Rightarrow n = 13$

The sum of the interior angles = $(n - 2) \times 180$

$= (13 - 2) \times 180 = 11 \times 180 = 1980^\circ$

15.

(d) $X = 3, Z = 8$

Explanation:

$9 \times 7 + 8YZ + 7Z1 = 2526$

When we add the unit digits we get $8 + Z$, but the result gives 6, so the possible value of Z is $= 8 \Rightarrow (8 + 8 = 16)$ the sum of the digits of the 100th position $= 9 + 8 + 7 = 24$.

So, $X + Y + Z + 1 = 12$

$X + Y + 8 + 1 = 12 \Rightarrow X + Y = 3$

$X = 3$ (maximum)

16.

(d) 7

Explanation:

Two numbers are coprime when the H.C. F of the numbers is 1.

y has a value less than 20, so $y = 1, 5, 7, 11, 13, 17, 19$, so y has 7 possible values.

17. **(a)** $\frac{8}{11}, \frac{11}{15}$

Explanation:

$\frac{5}{7} = 0.71$ and $\frac{3}{4} = 0.75$

$\frac{8}{11} = 0.72, \frac{11}{15} = 0.73$

18.

(b) 184

Explanation:

Least common multiple $= \frac{\text{Product of numbers}}{\text{HCF}} = \frac{1472}{8} = 184$

19.

(c) $\frac{n}{n+1}$

Explanation:

$\frac{1}{2} + \frac{1}{6} + \frac{1}{12} + \ldots + \frac{1}{n(n+1)} = \frac{1}{1} - \frac{1}{(n+1)} = \frac{n}{n+1}$

20.

(c) $\frac{1}{3}$

Explanation:

Suppose the fraction is $\frac{x}{y}$,

The denominator of the fraction is 2 more than the numerator $\Rightarrow y = x + 2$ When the numerator is multiplied by 3 and the denominator is multiplied by 2, the fraction becomes $\frac{1}{2}$,

$\Rightarrow \frac{3x}{2 \times (x+2)} = \frac{1}{2} \Rightarrow x = 1$

Hence, the given fraction is $\frac{x}{y} = \frac{1}{3}$

21.

(d) - 9.

Explanation:

Let the number be x

According to the question,

$\frac{x}{3} - x = 6 \Rightarrow \frac{-2x}{3} = 6$

So $x = -9$

22.

(b) 55

Explanation:

Male	the day	Work
45	200	4.5
x	150	7.5

$\Rightarrow \frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$

$\Rightarrow \frac{45 \times 200}{4.5} = \frac{x \times 150}{7.5}$

$\Rightarrow 2000 = 20x \Rightarrow x = 100$

additional men $= 100 - 45 = 55$

23.

(b) PQ

Explanation:

Time taken by P = 15 days, $Q = 20$ days and $R = 30$ days

Hence the total work $= P, Q$ and R of LCM

Total work $= 60$

Hence the efficiency of $P = 4, Q = 3$ and $R = 2$

So P and Q are the best options to work with.

24.

(c) 9

Explanation:

We know,

lower limit $=$ middle value $- \frac{\text{width}}{2}$

So, the lower limit of the class is $= \left(12 - \frac{6}{2}\right) = 9$

25.

(b) 2000

Explanation:

Given, the wheel radius (r) $= \frac{7}{4}m$

Circumference of wheel $\rightarrow 2\pi r = 2 \times \frac{22}{7} \times \frac{7}{4} = 11\ m$

Now, the number of turns $= \frac{22000}{11} = 2000$

26. **(a)** $500Km/h$

Explanation:

In this case both cars have the same time $= 9\ h$

Distance $= 4500$ km

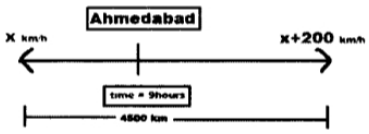
Let the speed of both cars be $= x$ and y km/h

For the opposite direction,

Relative speed $= x + y$ km/h

Relative speed $= \frac{4500}{9} = 500$ km/h

Short Tricks :-



Additional distance covered by $B = 1800$ km due to additional speed of 200 km / h in 9 hours

Now, the remaining distance = 4500 km - 1800 km $= 2700$ km

A distance of 2700 km is covered equally by A and B due to the same speed.

The speed of $A = \frac{1350}{9} = 150\ km/h$ is then,

Speed of $B = 150 + 200 = 350\ km/h$

The sum of the speeds of the two cars $= 350 + 150 = 500\ km/h$

27.

(b) 7.00 kg

Explanation:

18 Total weight of jackfruit $= 7.2 \times 18 = 129.6$

When two more jackfruits are added the new average $= 7.2 - 0.02 = 7.18$

Total weight of jackfruit $= 7.18 \times 20 = 143.6$

Weight of each jackfruit added $= \frac{143.6 - 129.6}{2} = 7.00\ kg$

28.

(d) ₹ 525.00

Explanation:

The effective percentage difference $= \{5 - (-5)\}\% = 10\%$, equal to ₹ 50.

Cost price (100%) is equal to $= \frac{50}{10} \times 100$ = 500

So, the basic selling price is $= \frac{105}{100} \times 500 = 525$

29.

(d) 4 years

Explanation:

Let the ages of the four children be $x, x - 2$, $x - 4$, and $x - 6$ years.

The sum of their ages is 28

Therefore, $(x + x - 2 + x - 4 + x - 6) = 28$

$4x = 40 \rightarrow x = 10$

The youngest child is now $(x - 6) = 4$ years old.

30.

(d) 16

Explanation:

Average of AQI in Kolkata

$= \frac{306 + 288 + 274 + 172}{4} = 260$

Average of AIQ in Delhi

$= \frac{248 + 246 + 246 + 236}{4} = 244$

So, the difference between the average of AQI in Kolkata and Delhi in the month of February is 16.

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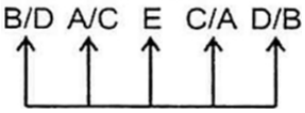
31.

(d) E

Explanation:



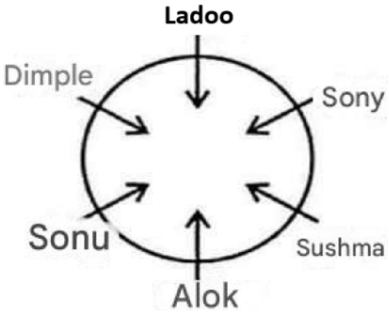
From the above figure, it can be concluded that E is sitting exactly in the middle of the row.

32.

(c) Ladoo

Explanation:

As per the instruction given in the question,



From the above arrangement we can see that Laddu is sitting second to the right of Sushma.

33.

(d) Coffee

Explanation:

Just as the **bowl serves** soup serves , the **cup serves** coffee serves .

34.

(c) 41636

Explanation:

The square of the place value

$A = 1^2 = 1, C = 3^2 = 9, E = 5^2 = 25$

Similarly, BDF = 41636

35.

(d) $343 : 728$

Explanation:

Pattern: $n^3 : (n + 2)^3$

$4^3 : 6^3 = 64 : 216$

$6^3 : 8^3 = 216 : 512$

$5^3 : 7^3 = 125 : 343$

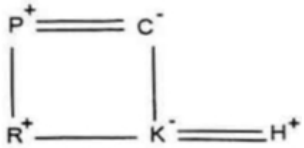
$7^3 : 9^3 = 343 : 729$

This option is correct.

36.

(c) Wife

Explanation:



Hence, C is the wife of P.

37. **(a)** HBNIQT

Explanation:

Logic ORANGE is coded as QOCKIB.

$O+2=Q, R-3=O, A+2=C$, $N-3=K$, $G+2=I, E-3=B$

Similarly, FELLOW will be coded as HBNIQT

38. **(c)** Economics

Explanation:

We studied about Newton in physics and physics is called economics.

39. **(b)** 21

Explanation:

$24 \times 6 \div 5-3+2=?$

After substituting the signs according to the given instructions, we get,

$24 \div 6 \times 5+3-2=20+3-2=21$

40. **(a)** 30

Explanation:

After correct marking,

$=\frac{2}{3} \div \frac{1}{3}-7+7 \times 5$

$=2-7+35=30$

41. **(d)** Both 1 and 2 are implicit.

Explanation:

Both 1 and 2 are implied.

42. **(a)** The information provided is not sufficient to answer the question.

Explanation:

In the given case, nowhere is the movement of passengers in condition I at station A mentioned, hence the information given is insufficient to answer the question.

43. **(d)** X

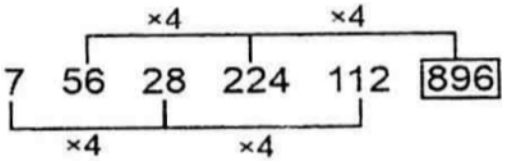
Explanation:

$D+5=I, I+5=N, N+5=S$,

Similarly, $S+5=X$

44. **(d)** 896

Explanation:

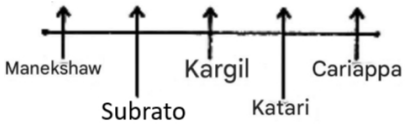


45.

(d) Kargil

Explanation:

From the given information, we can draw the following diagram,



So, here we can see that the house 'Kargil' is in the middle.

46.

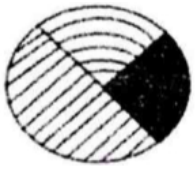
(b) Shorter than Sohan

Explanation:

Geeta > Sohan > Mohan / Meghna > Komal

47. **(a)** D

Explanation:



48. **(a)** Maya

Explanation:

5	Krishna
4	Jagriti
3	Laxman
2	Maya
1	Nirupam

From the above table, we can clearly see that Maya lives on the second floor.

49. **(a)** BOUT

Explanation:

The word 'BOUT' cannot be formed from the given word 'FLAM BOYANT', as' U 'is not used in the given word.

50.

(b) 9

Explanation:

$13 + 7 = 20 \div 5 = 4$

$13 + 7 = 20 \div 4 = 5$

$(x + 9) \div 3 = 6$

$x + 9 = 18 \Rightarrow x = 9$

51.

(c) 178

Explanation:

Logic: In the first line, the sum of (the product of the second and third numbers) (sum of the first and fourth numbers) is given by

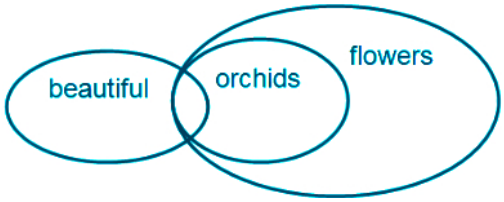
Example: (i) $15 \times 5 = 75, 6 + 10 = 16$, then $75 + 16 = 91$

(iii) $13 \times 12 = 156, 4 + 18 = 22$ then $156 + 22 = 178$

52.

(c) Only the conclusion I follows.

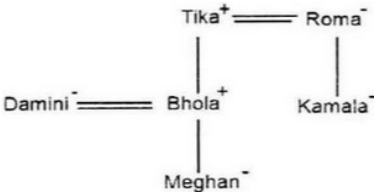
Explanation:



Softly, some flowers are beautiful. Only conclusion I follows.

53. **(a)** Both statement I and II together are sufficient to answer the question.

Explanation:

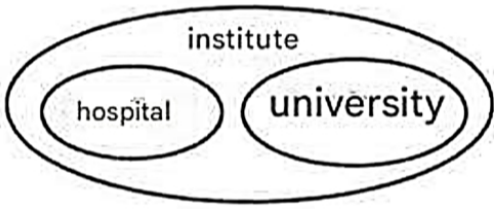


Therefore, both statement I and II together suffice to answer the question.

54.

(b) 

Explanation:

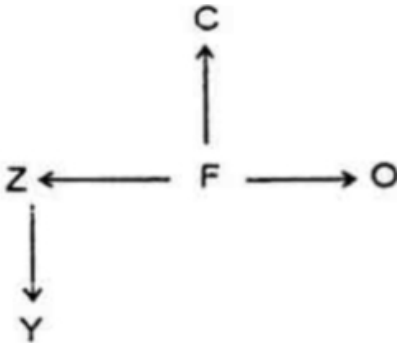


55.

(c) North-East

Explanation:

According to the instruction in question



Therefore, we can see from the above figure that the position of city C with respect to city z is in the north-east.

56. **(a)** 60

Explanation:

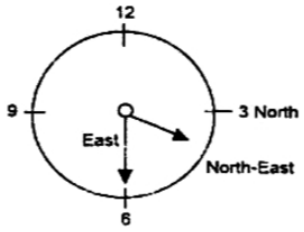
Total number of days from 1 February to 31 March

= 29 + 31 = 60

57.

(d) North East

Explanation:

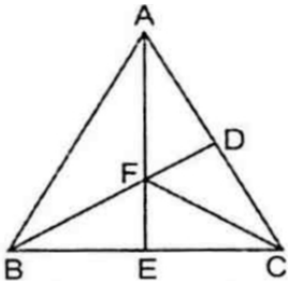


From the above diagram, it is clearly seen that the hour hand points in the **North East** direction.

58.

(c) 12

Explanation:



Here triangles are :- (afd), (fdc), (fce), (fbe), (abf), (abd), (abe), (acf), (aec), (fbc), (bdc) (abc).

So total number of triangles in above figure $= 12$

59.

(d) $B < J$

Explanation:

Given **statement:**

$J > H = N \geq B \leq C < E$

a. $H < B =$ false (as $H = N \geq B$) Here, B is smaller than H.

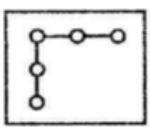
b. $B < J =$ true (as $J > H = N \geq B$)

c. $N > C =$ false (as $N \geq B \leq C$) Here, N and C has no connection between them.

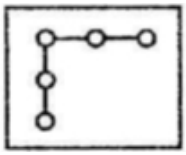
d. $N > E =$ false (as $N \geq B \leq C < E$) Here, N and E has no connection between them.

So, the only option ($B < J$) is true.

60.

(b) 

Explanation:



सामान्य अध्ययन

61.

(c) Humayun

Explanation:

The city of Dinpanah on the banks of the Yamuna River was founded by Humayun, who was the son of Babur, the founder of the Mughal Empire in India. Humayun played an important role in the foundation of the Mughal Empire. He founded the city of Dinpanah in 1533 AD.

62.

(c) Pal

Explanation:

Pal. Founder - Gopal. The Palas were considered patrons of many Buddhist monastic sites, and the temples in that region were famous for reflecting the local Vanga style. The most prominent feature among these was the curved or sloping shape of the bamboo roof of the Bengali hut, which later came to be known as the Ahom style in and around Guwahati.

63.

(c) Narsingh Mehta

Explanation:

Mahatma Gandhi's favourite bhajan "Vaishnav Jan To" was composed by Narsinh Mehta. Narsinh Mehta was a famous Vaishnavite saint and poet from Gujarat.

64.

(c) Puna

Explanation:

Dhondo Keshav Karve: A prominent social reformer in the field of women's welfare. He supported widow remarriage and married a widow himself. At the same time, he was instrumental in promoting the education of widows. He was awarded the Bharat Ratna in 1958. Karve wrote two autobiographical works: "Atmavritta" (1928) in Marathi and "Looking Back" (1936) in English. According to the 2011 census, the literacy rate of Indian women is 64.6%.

65. **(a)** Four

Explanation:

The four steps are known as ashrams. First stage (Brahmacharya) - This is the student's stage. Second stage (Grihastha) - This is called the "Grihastha" stage. The third stage (vanaprastha) - It begins when the person fulfills his obligations towards his family. Fourth stage (Sannyasa) - This is the stage of renunciation, the goal of which is to attain liberation from the cycle of birth and rebirth.

66.

(c) Surendra Nath Banerjee

Explanation:

Surendra Nath Banerjee. The Congress party split into two in Surat in 1907: liberal leaders such as Dadabhai Naoroji, Feroz Shah Mehta, Badruddin Tyabji, W.C Bonnerjee, Romesh Chandra Datta, & S. Subramania Iyer was on one side. Militant leaders Sri Aurobindo Ghosh, Bal Gangadhar Tilak, Bipin Chandra Pal and Lala Lajpat Rai were on the other side.

67.

(b) Prarthana Samaj

Explanation:

The Prarthana Samaj, also known as the "Prayer Society", was a movement for religious and social reform in Bombay, based on earlier reform movements. It was founded on 31 March 1867 by Atmaram Pandurang after Keshub Chandra Sen toured Maharashtra to make people believe in and worship one God. The Samaj gained popularity after Mahadev Govind Ranade joined.

68.

(d) Chhatrapati Shivaji Maharaj Terminus

Explanation:

Chhatrapati Shivaji Maharaj Terminus , recognised as a UNESCO World Heritage Site in 2004, was formerly known as Victoria Terminus. It was also known as Bori Bunder railway station. The station was renamed Chhatrapati Shivaji Terminus in 1996 in honour of Emperor Chhatrapati Shivaji, the founder of the Maratha Empire. The terminus was designed by British architect Frederick William Stevens, and opened in 1887.

69. **(a)** Bihar

Explanation:

Bihar. Henry Walter is considered the father of the Indian census. The first census in India was conducted in 1872, but the process of regular censuses began from 1881.

70.

(d) Preparation of building bye-laws

Explanation:

The concept of Directive Principles of State Policy (DPSP) for preparation of building bye-laws is inspired from the Irish Constitution. It is included under Part IV (Article 36-51) of the Constitution of India.

71.

(b) Nagaland

Explanation:

The Panchayati Raj system (Part IX, Articles 243 to 243O, 11th Schedule) has been implemented in all the states except Nagaland, Meghalaya and Mizoram and all the Union Territories except Delhi. The system was first adopted by Rajasthan in 1959. The major committees dealing with the subject are: Balwant Rai Mehta Committee (1957), Ashok Mehta Committee (1977), G. V. K. Rao Committee (1985), and L. M. Singhvi Committee (1986).

72.

(b) Related Banks

Explanation:

Related banks may choose to offer a higher interest rate on personal savings accounts than the interest rate set by RBI. The RBI determines the interest rate on savings bank deposits.

73. **(d)** The real wage rate is equal to the marginal productivity of labour.

Explanation:

The real wage rate is an indicator that is the cost of a commodity divided by its price, and it shows how much output is obtained from an hour of work. It is an important measure of the standard of living of workers and their productivity.

74. **(a)** The glucose produced is converted into starch.

Explanation:

Glucose $C_6H_{12}O_6$**,** produced by the process of photosynthesis, is a type of carbohydrate that can be used in three main ways: it can be converted into chemicals necessary for the growth of plant cells such as cellulose, it is converted into starch which can be converted back into glucose when the plant needs it, and during the process of respiration, it can be broken down to release energy stored in glucose molecules.

75. **(d)** Pepsin

Explanation:

Pepsin: It is secreted by the main cells, called pepsin-secreting cells, in its inactive form "pepsinogen." The parietal cells within the stomach lining secrete hydrochloric acid, which lowers the pH of the stomach. Low pH activates pepsin. **Trypsin**: It is an enzyme that initiates the process of digestion of protein molecules in the small intestine.

76. **(c)** 1.8 litres

Explanation:

An adult typically excretes 1 to 5021 litres of urine a day. The color of urine is yellow due to urochrome.

77. **(d)** from the air gaps that exist between soil particles.

Explanation:

Main root type - Stem root: This is a main central root, with smaller roots attached around it. Fibrous Roots: These are bushy structured roots with thin and medium branching roots emerging from the stem. Functions of the root: absorption, providing stability, storage, etc.

78. **(a)** Golgi apparatus

Explanation:

The Golgi apparatus is made up of a series of flattened and stacked pouches called cisterns. The endoplasmic reticulum is an organ responsible for lipid synthesis and protein modification. It is of two types: Rough endoplasmic reticulum: This cell organelle participates in the synthesis of enzymes and proteins. Smooth endoplasmic reticulum:

This cell organ synthesizes glycogen, lipids, and steroids. Ribosomes (Ribosomes) are thought to be the cell's protein synthesis factory.

79. **(d)** Compound
Explanation:
A compound is a substance of two or more different chemical elements combined in a fixed proportion. For example, there are CO_2 (carbon dioxide) and HO_2 (hydroperoxyl). An element is a fundamental substance that cannot be broken down into simpler components by any non-nuclear chemical reaction. For example, h (hydrogen), he (helium), and li (lithium) are elements. Atoms are composed of three subatomic particles: electrons, protons, and neutrons.

80. **(c)** Decomposition reaction
Explanation:
Decomposition reaction. A decomposition reaction is a chemical process in which a single reactant breaks down into multiple products. The electrolysis of water is a good example of an electrolytic decomposition reaction. $2H_2O$ (water) $+O_2$ (oxygen) $\rightarrow 2H_2$ (hydrogen) $+2O_2$ (oxygen). Combination reactions: Reactions in which two or more reactants combine to form a product. Example: mg (magnesium) $+O_2$ (oxygen) $\rightarrow 2MgO$ (magnesium oxide).

81. **(a)** six times.
Explanation:
Six times.- since power is equal to the product of voltage and current.
$P = VI$
is the new power $P' = (3)V \times (2)I = (6)VI = 6P$.
Therefore, the power (power) will increase by 6 times.

82. **(a)** resistor
Explanation:
Resistance (R) is an electrical component that limits or controls the flow of electric current in an electronic circuit. It is measured in the SI unit ohm (Ω). A capacitor is a two-terminal electrical device that has the ability to store energy in the form of electrical charge. A transistor is a miniature semiconductor device that amplifies electrical signals, generates electrical signals and acts as a switch/gate as well as controlling current or voltage flow. A diode is a semiconductor device that primarily acts as a one-way switch for current.

83. **(a)** thermometer
Explanation:
A thermometer is a device used to measure temperature.
- The thermometer relies on the principle of thermal expansion.
- Anemometers are used to measure wind speed.
- Eudiometers are used to measure the volume of gases.
- The burette is used to measure the volume of a substance.

84.

(b) Hydrogen bomb

Explanation:

Hydrogen bomb - When detonated, it produces a chain reaction in which isotopes of hydrogen combine to form helium. In the thermonuclear fusion process, the kinetic energy required to overcome the coulomé repulsive force between particles is obtained by raising the temperature. Thermonuclear fusion is the main source of energy production in the star's core.

85.

(d) Spam

Explanation:

Spam refers to unsolicited spam, which are e-mails sent in bulk without any request or permission, often including advertisements.

With the growth of e-mail, spam has been a constant problem, especially since the 1990s as it plagues e-mail users, wasting their time and money. A study conducted in April 2008 showed that at least 100 billion spams are sent every day.

86. **(a)** .wav files, .mid files

Explanation:

.wav files, .mid files. The full name of WAV is Waveform Audio File Format, developed by Microsoft and IBM. Whereas, MIDI stands for Musical Instrument Digital Interface.

87.

(c) Bangalore

Explanation:

India's first cyber police station was established in Bengaluru in 2001.

This cybercrime station serves to register cases related to cybercrime throughout the state under the Information Technology Act, 2000.

Through this, citizens can file complaints online without coming to the station.

The station will be manned by a DySP (Deputy Superintendent of Police) rank officer, and assisted by three inspectors.

88.

(b) Lakshadweep

Explanation:

Lakshadweep, located off the coast of Kerala, is a tropical archipelago of 36 atolls and coral reefs in the Lakshadweep Sea. It has a total area of, and its capital is Kavaratti. In terms of **forest cover,** Chandigarh has 20.7%, Haryana has 3.63%, Goa has 59.94% and Mizoram has 84.53%, the highest in percentage terms. The forest cover of Madhya Pradesh is significant from the point of view of area.

89. **(a)** Geostationary earth orbit

Explanation:

Geostationary Earth orbit (GEO) has an altitude of about 35,786 kilometres (22,236 mi) above Earth's equator. GEO Satellites are used for various applications, such as television broadcasting, weather monitoring, and telecommunications. In addition to GEO, other types of orbits exist, such as Low Earth Orbit (LEO), which occurs at an

altitude of about 2000 kilometers, and Medium Earth Orbit (MEO), which has an altitude between GEO and LEO.

90. **(d)** IIT - Hyderabad
Explanation:
IIT-Hyderabad (established in 2008). India's first building made of biobricks from agro-waste was inaugurated in Hyderabad in 2021. Bio bricks exhibit excellent thermal insulation and fire retardant properties. It is part of the Bold Unique Ideas Lead Development (BUILD) project to showcase the strength and versatility of the material.

91. **(d)** 6
Explanation:
Dadra Taal - It is a Hindustani classical taal (rhythmic cycle) consisting of six beats in two equal parts of three. It is mostly used in bhajans, thumris and some film songs. **Other important taal:** Teen Taal (16 Taal), Keherwa Taal (8 Taal), Rupak Taal (7 Taal), Jhaap Taal (10 Taal), Ek Taal (12 Taal).

92. **(a)** 2019
Explanation:
International Year of Indigenous Languages (IYIL) Five key areas: increasing understanding, reconciliation, and international cooperation; creating conditions conducive to knowledge-sharing and the dissemination of good practices; integrating indigenous languages into a standard setting; empowering through capacity building; expanding new knowledge to foster growth and development.

93. **(a)** Pawan Kampli
Explanation:
Pawan Kampelly won India's first medal at the Asian eSports Games, securing a bronze medal in the e-football event. The Games take place in Bangkok, Thailand from November 25 to December 1, 2024. Kampelly defeated 2022 eFootball World Finals winner Asgard Azizi of Indonesia 2-1 to win the bronze. Kampelly won a cash prize of $500 for this achievement. Nattawut Namburi of Thailand won the gold medal, and Ahmad Muhaimin Abdul Razak of Malaysia got the silver medal. Esports, which are played on devices such as phones and gaming consoles, are becoming increasingly popular worldwide. The International Olympic Committee will host the inaugural Olympic eSports Games in Saudi Arabia in 2025.

94. **(c)** Russia
Explanation:
Russia

95. **(a)** Anahat Singh
Explanation:
Anahat Singh

96. **(a)** Narendra Modi
Explanation:

Narendra Modi

97. **(b)** Karnataka
Explanation:
The Karanja Irrigation Project, located in the Bidar district of Karnataka, has led to significant disputes over compensation for displaced farmers. The Karnataka government has set up a technical committee to address these issues. The committee advocates for fair compensation following judgments of various courts. This position highlights broader themes such as land acquisition, farmers' rights, and government responsibilities in India's agricultural policy. The Karanja Irrigation Project is located in Karnataka and is in the Godavari basin and uses the Karanja River.
98. **(a)** Gajendra Singh Shekhawat
Explanation:
Gajendra Singh Shekhawat
99. **(a)** Jasprit Bumrah
Explanation:
Jasprit Bumrah
100. **(b)** Virus
Explanation:
Tamil Nadu has requested the central government to include mumps vaccine in the Universal Immunisation Programme (UIP). UIP provides free vaccination against 12 diseases, including diphtheria, tetanus, polio, measles, hepatitis B and others. Mumps is a contagious viral infection that affects the salivary glands, it is usually mild and self-limiting. It mainly affects children and young people, its symptoms include swelling of the jaw, fever, fatigue, loss of appetite and headache. Mumps spreads through direct contact or through airborne droplets from the upper respiratory tract of an infected person.