

21 Day Study Plan

Day-13



1. Root pressure of plants is measured by which instrument ?

- A. Auxanometer
- B. Galvanometer
- C. Hydrometer
- D. Sphygnomanometer

Ans. A

Sol.

- * Root pressure is measured by an instrument called an **auxanometer**.
- * The auxanometer measures plant growth as well as the pressure developed within the xylem cells of roots.

2. Which of the following is anatomically **correct** for the human body?

- A. Collar bones - 3 pairs
- B. Salivary glands - 1 pair
- C. Cranial nerves - 10 pairs
- D. Floating ribs - 2 pairs

Ans. D

Sol.

- There are 2 pairs of floating ribs (11th and 12th). These ribs are imperfectly formed and do not reach the sternum.
- There are 2 pairs of Collar bones (Clavicle).
- There are 3 pairs of Salivary glands.
- There are 12 pairs of Cranial nerves.

3. After birth, what link between the mother and baby is cut?

- A. The umbilical cord
- B. The placenta cord
- C. The uterus cord
- D. The cervix cord

Ans. A

Sol.

- The umbilical cord connects the baby to the placenta.
- The umbilical cord carries oxygen and food from the placenta to the baby.
- As soon as the baby is born, the provider places 2 clamps on the umbilical cord to stop the blood flow.

4. Which part of nephron is impermeable to water ?

- A. Proximal convulated tubule
- B. Distal convulated tubule
- C. Ascending limb of loop of hele
- D. Descending limb of loop of henle

Ans. C

Sol.

- Tubular reabsorption is the process that moves solutes and water out of the filtrate and back into your bloodstream.
- The walls of the thick **ascending limb are impermeable to water**, so in this section of the nephron water is not reabsorbed along with sodium.

5. Which of these hormone (s) are produced in pancreas?

- A. Insulin
- B. Amylase
- C. Lipase
- D. All of the above

Ans. A

- Sol.**
- Lipase breaks down fat molecules to be easily absorbed by the body
 - Amylase breaks down carbohydrates into sugar molecules o be easily absorbed by body
 - Insulin regulates sugar level in the body

6. Push or pull of an object is called _____.

- A. Pick
- B. Lift
- C. Force
- D. Shut

Ans. C

- Sol.** Push or pull of an object is called force. For instance: Force of friction between your feet and the ground is yet another example. Also, weight is the force of the earth's gravity exerted on the object concerned.



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7. The attribute _____ specifies (in pixels) the distance between two adjacent cells.

- A. Width
- B. Height
- C. Cellpadding
- D. Cellspacing

Ans. D

Sol.

- It's the cellspacing which specifies the distance between two cells.
- In such a command attribute, a designer can increase the size of the borders in a table without increasing the margin of what is inside a text box.
- In contrast to this, cellpadding involves increasing the amount of margin inside each cell or box to create more white space around the text area.

8. When light passes from one medium to another, this phenomenon of change in its direction is called _____.

- A. Refraction
- B. Diffraction
- C. Propagation
- D. No option is correct

Ans. A

Sol. Change in the direction of light due to the change in the medium of transmission is known as refraction. It so happens because the change in medium brings about the change in phase velocity, which involves change in the wavelength without the change in the frequency of the light particles, thus causing the alteration in the direction.

9. What is used as a reflector in the headlights of a vehicle?

- A. Concave mirror
- B. Concave lens
- C. Convex lens
- D. Convex mirror

Ans. A

Sol. A **Concave mirror** is used for headlights of vehicles. When a **lighted**

bulb is placed at the **focus** of a concave mirror, then the concave mirror collects all the **diverging rays** of the bulb and converts them into a powerful beam of light rays that can reach a large distance in the darkness of night and make us see things up to a considerable distance.

10. Which elements in the periodic table are chemically inactive?

- A. Representative elements
- B. Inert gases
- C. Transitional elements
- D. Inner transitional elements

Ans. B

Sol.

• An **inert gas** is a **gas** that has extremely low reactivity with other substances. The noble **gases**—helium, argon, neon, xenon, krypton, radon, and element 118 (Uuo)—exist in their elemental form and are found in Group 18 of the periodic table.

11. The important nitrogenous compound used in fertilizer is

- A. Calcium cyanamide
- B. Nitrous phosphate
- C. Triple phosphate
- D. Thomas slug

Ans. A

Sol. • Most plants need fertilizer to grow and blossom, and nitrogen is a key nutrient. Commercial fertilizers typically contain a mix of nitrogen, phosphorus and potassium, with nitrogen being responsible for foliage growth. This makes nitrogen especially important for leafy plants and lawns.

• The main use of calcium cyanamide is in agriculture as a fertilizer. In contact with water, it decomposes and liberates ammonia: $\text{CaCN}_2 + 3 \text{H}_2\text{O} \rightarrow 2 \text{NH}_3 + \text{CaCO}_3$.

• Calcium cyanamide is also used as a wire-fed alloy in steelmaking



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12. What is also called soda ash?

- A. Sodium carbonate
- B. Sodium bicarbonate
- C. Calcium carbonate
- D. None of these

Ans. A

Sol. * Sodium carbonate is also called washing soda, soda ash, and as crystal carbonate in monohydrate form

* It is carbonic acid's water-soluble sodium salt

* It mostly occurs as a crystalline decahydrate, which readily effloresces to form the monohydrate which is a white powder

13. Who is also known as Nigantha Natoputra?

- A. Gautam Buddha
- B. Vardhaman Mahavira
- C. Kautilya
- D. Aryabhata

Ans. B

Sol.

• Vardhaman Mahavira is also known as "Nigantha Natoputra".

• Vardhaman Mahavira was also called the Jaina or Jitendriya (one who conquered his senses), Kevalin (perfect learned), Nirgranthas (from all bonds), Arihant (blessed one), and Mahavira (the brave).

14. Who founded the first All India Kisan Sabha formed?

- A. Sahajanand Saraswati
- B. Mahatma Gandhi
- C. J.B Kriplani
- D. Sardar VallabhBhai Patel

Ans. A

Sol.

* All India Kisan Sabha was the name of the peasants front of the undivided **Communist Party of India**.

* It was formed by **Sahajanand Saraswati** in 1936 at Lucknow.

* It was formed during the session of the Indian National Congress in April 1936. Swami Sahajanand Saraswati was elected as its **first president**.

15. **Direction:** Select the segment which has an error.

It was a really bad movie- a worse movie I've ever seen in my life.

- A. I've ever seen
- B. a worse
- C. in my life
- D. was a really

Ans. B

Sol.

Here, the superlative degree will be used. It should be 'the worst movie' in place of 'a worse movie.' Hence, option B is the correct answer.

16. In the sentence, identify the segment which contains the grammatical error.

Mohini washes all her clothes and cooks food for the family before she going to the office. A. Mohini washes all her B. clothes and cooks food C. for the family before D. she going to the office

Ans. D

Sol. Option D has the grammatical incorrect part. Instead of going we should use goes because we uses present indefinite tense for showing habits. For example- He sings daily. Hence option D is the correct answer.

17. Select the most appropriate idiom (in the context) to fill in the sentence.

Just call us on this number if you have any problems, and we'll be back _____.

- A. for cut
- B. at a loss
- C. for nuts
- D. in a jiffy

Ans. D



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Sol.

The idiom 'in a jiffy' means immediately, very quickly, or at once.

Hence, option D is the correct answer.

18. Pick a word opposite in meaning to

Predecessor

A. lessor

B. successor

C. oppressor

D. processor

Ans. B

Sol.

Predecessor means a person who held a job or office before the current holder.

Successor means a person or thing that succeeds another.

Oppressor means a person or group that oppresses people.

Lessor means a person who leases or lets a property to another; a landlord.

Processor means a machine that processes something.

Hence, option b is the correct choice.

19. Select the most appropriate meaning of the given idiom.

A dog's life

A. a restful life

B. a life spent in guarding something

C. a life full of freedom

D. a miserable existence

Ans. D

Sol.

A dog's life is an idiom which is used to denote an unhappy existence, full of problems or unfair treatment.

Therefore, option (D) is the correct answer.

20. Select the synonym of the given word.

EXTRICATE

A. delete

B. intricate

C. remove

D. complicate

Ans. C

Sol.

Extricate means release from entanglement or difficulty.

Delete means cancel or erase.

Intricate means complex.

Remove means get rid of something abstract.

Complicate means make more complicated.

Therefore, option (C) is the correct answer.

21. Select the wrongly spelt word.

A. hospitable

B. humanitariun

C. hasten

D. hostile

Ans. B

Sol.

Option B has the wrongly spelt word. The correct spelling is *Humanitarian* which means someone who is devoted to the promotion of human welfare and to social reforms.

Hospitable means friendly and welcoming.

Hasten means to speed up the progress of something.

Hostile means aggressive.

Therefore, option (B) is the correct answer.

22. Select the word which means the same as the group of words given.

A large enclosure for keeping the birds in

A. apiary

B. aquarium

C. aviary

D. menagerie

Ans. C

Sol.

Apiary- a shed containing a number of beehives.

Aquarium- a place where fishes are kept.

Aviary- a place where birds are kept.

Menagerie- a collection of live animals for study or display or zoo.

Therefore, option (A) is the correct answer.

23. Arrange the given words in the sequence in a meaningful order.

- 1) Radio Waves,
- 2) Microwaves,
- 3) Infrared radiation,
- 4) Visible light,
- 5) Ultraviolet radiation

- A. 2, 3, 1, 4, 5
- B. 3, 2, 1, 5, 4
- C. 1, 2, 3, 4, 5
- D. 2, 3, 4, 5, 1

Ans. C

Sol.

In this question, we show that –
All the rays in the increasing their frequency form radio waves then microwaves then infrared radiation then visible light then ultraviolet radiation.
So the correct sequence is 1, 2, 3, 4, 5.
Hence, correct answer is option C.

24. 'Error' is related to 'Blunder' in the same way as 'Crime' is related to '_____':

- A. Disaster
- B. Thief
- C. War
- D. Sin

Ans. D

Sol.

The relationship is- word: intensity.
Extreme error is called Blunder and Extreme crime is called Sin.
Hence, the correct answer is option D.

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

(8, 27, 36)

- A. (9, 18, 56)
- B. (20, 31, 51)
- C. (4, 15, 20)
- D. (14, 23, 46)

Ans. C

Sol.

As,

$$8*3+3=27$$

$$8*4+4=36$$

Similarly,

$$4*3+3=15$$

$$4*4+4=20$$

Hence, option C is the correct answer.

26. Select the combination of letters that when sequentially placed in the gaps of the given

cab_cca_ccc_bcccab_cc_bcc

- A. cbbbbb
- B. cbaca
- C. cbcca
- D. acaca

Ans. B

Sol.

Logic- cabcc is repeated 5 times.
cabcc / cabcc / cabcc / cabcc / cabcc
Hence, the correct answer is option B.

27. Three of the following four words are alike in a certain way and one is different. Pick the odd word out.

- A. Drag
- B. Thrust
- C. Momentum
- D. Entropy

Ans. D

Sol.

Except Entropy, all are vector quantities.
Entropy is a scalar quantity.
Hence, the correct answer is option D.

28. Select the option which has same relationship as the number set given below.

(23, 57, 200)

- A. (25, 95, 120)
- B. (10, 56, 100)
- C. (19, 31, 125)
- D. (14, 99, 158)

Ans. C



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Sol.

Pattern is:

As,

$$(23 + 57) \times 5/2 = 80 \times 5/2 = 200$$

Similarly,

$$(19 + 31) \times 5/2 = 50 \times 5/2 = 125$$

Hence, the correct answer is option C.

29.If COMMENT is coded as 4171617102027 and SHARE is coded as 201042210, then how will LIKE be coded as?

- A. 1311149
- B. 1315149
- C. 2691149
- D. 1311169

Ans. A

Sol.

As,

COMMENT=

$$C(3)O(15)M(13)M(13)E(5)N(14)T(20)$$

=

$$C(3+1)O(15+2)M(13+3)M(13+4)E(5+5)N(14+6)T(20+7)$$

$$= C(4)O(17)M(16)M(17)E(10)N(20)T(27)$$

$$= 4171617102027$$

And

$$SHARE= S(19)H(8)A(1)R(18)E(5)$$

$$= S(19+1)H(8+2)A(1+3)R(18+4)E(5+5)$$

$$= S(20)H(10)A(4)R(22)E(10)$$

$$= 201042210$$

Similarly,

$$LIKE= L(12)I(9)K(11)E(5)=$$

$$L(12+1)I(9+2)K(11+3)E(5+4)$$

$$= L(13)I(11)K(14)E(9)$$

$$= 1311149$$

Hence, the correct answer is option A.

30.Which number in the given series is Incorrect?

7, 13, 25, 59, 67, 193

- A. 67
- B. 13
- C. 59
- D. 193

Ans. C

Sol.

Correct Series is- 7, 13, 25, **49**, 67, 193

Logic-

$$3*2+1=7$$

$$3*4+1=13$$

$$3*8+1=25$$

$$3*16+1=49$$

$$3*32+1=67$$

$$3*64+1=193$$

Hence, the correct answer is option C.

31.If a man sells a car at 7% profit and a bike at 16% profit, he earns Rs. 3255 as profit. But if he sells the car at 7/3% loss and bike at 5% profit then he bears no profit no loss. Find the cost price of the car and the bike?

- A. 15000, 7000
- B. 22500, 10500
- C. 30000, 14000
- D. None of these

Ans. B

Sol.

$$\frac{7}{3}\% \text{ of car} = 5\% \text{ of bike}$$

$$\frac{\text{car}}{\text{bike}} = \frac{15}{7}$$

Let the cost price of car and bike be 15x and 7x respectively.

Now,

$$15x * \frac{7}{100} + 7x * \frac{16}{100} = 3255$$

$$\Rightarrow \frac{21}{20}x + \frac{28}{25}x = 3255$$

$$\Rightarrow \frac{105x + 112x}{100} = 3255$$

$$\Rightarrow x = \frac{3255 * 100}{217} = 1500$$

Now cost price of car

$$= 15 * 1500 = 22500$$

$$\text{and bike} = 7 * 1500 = 10500$$



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32. Two guns are fired from the same place at an interval of 8 minutes. A person approaching the place observes that 7 minutes 56 seconds have elapsed between the hearings of the sound of the two guns. If the velocity of the sound is 595 m/sec, the man was approaching that place at what speed (in km/hr.)?

- A. 16
- B. 23
- C. 18
- D. 20

Ans. C
Sol.

Difference of time = 8 min. - 7 min. 56 sec = 4 seconds
Distance covered by man in 7 min. 56 sec
= Distance covered by sound in 4 seconds = $595 \times 4 = 2380 \text{ m}$

$$\therefore \text{Speed of man} = \frac{2380 \text{ m}}{7 \text{ min. } 56 \text{ sec}} = \frac{2380}{476} \text{ m/sec}$$

$$= 5 \text{ m/sec}$$

$$= 5 \times (18/5) \text{ kmph} = 18 \text{ kmph}$$

The correct response is option C.

33. If $x = \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}}$ and y is the reciprocal of x, then what is the value of $(x^3 + y^3)$?

- A. 476
- B. 472
- C. 504
- D. 48

Ans. D
Sol.

$$x = \frac{\sqrt{5} - \sqrt{3}}{\sqrt{5} + \sqrt{3}} = \frac{P - Q}{P + Q}$$

$$y = \frac{\sqrt{5} + \sqrt{3}}{\sqrt{5} - \sqrt{3}} = \frac{P + Q}{P - Q}$$

$$y = \frac{1}{x}$$

$$\text{Let } x + \frac{1}{x} = a$$

$$x^3 + y^3 = x^3 + \frac{1}{x^3} = a^3 - 3a$$

$$x + y = x + \frac{1}{x}$$

$$= \frac{2(P^2 + Q^2)}{(P^2 - Q^2)} = 2 \left(\frac{5 + 3}{5 - 3} \right)$$

$$= 8$$

$$x^3 + \frac{1}{x^3} = 512 - 24 = 488$$

34. The base of a right pyramid is an equilateral triangle with side 8 cm, and the height of the pyramid is $24\sqrt{3}$. The volume (in cm^3) of the pyramid is :

- A. 480
- B. 384
- C. 576
- D. 1152

Ans. B
Sol.

Side of equilateral triangle = 8cm

$$\text{Area of equilateral triangle} = \frac{\sqrt{3}}{4} a^2$$

$$= \frac{\sqrt{3}}{4} \times 8^2 = 16\sqrt{3} \text{ cm}^2$$

$$\text{Height of pyramid} = 24\sqrt{3} \text{ cm}$$

Vol. of

$$\text{pyramid} = \frac{1}{3} \times \text{base area} \times \text{Height}$$

$$= \frac{1}{3} \times 16\sqrt{3} \times 24\sqrt{3}$$

$$= 384 \text{ cm}^3$$

35. When a two-digit number is multiplied by the sum of its digits, the product is 424.

When the number obtained by interchanging its digits is multiplied by the sum of the digits, the result is 280. The sum of the digits of the given number is :

- A. 7
- B. 6
- C. 8
- D. 9

Ans. C
Sol.

Let the two digit number = ab

A.T.Q.

$$(10a + b)(a + b) = 424 \dots (i)$$



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$$(10b + a)(b + a) = 280 \dots (ii)$$

Dividing equation (i) by equation (ii), we get –

$$\frac{10a + b}{10b + a} = \frac{424}{280}$$

$$\frac{10a + b}{10a + b} = \frac{53}{35}$$

$$\frac{10b + a}{ab} = \frac{53}{35}$$

$$\frac{ba}{ba} = \frac{35}{35}$$

The number is 53.

Required, sum of digit of number = $5 + 3 = 8$

36. The value of $\tan^2\phi + \cot^2\phi - \sec^2\phi \operatorname{cosec}^2\phi$ is equal to :

- A. 0
- B. -2
- C. 1
- D. -1

Ans. B

Sol.

$$\begin{aligned} & \tan^2\phi + \cot^2\phi - \sec^2\phi \operatorname{cosec}^2\phi \\ &= \frac{\sin^2\phi}{\cos^2\phi} + \frac{\cos^2\phi}{\sin^2\phi} - \frac{1}{\cos^2\phi \sin^2\phi} \\ &= \frac{\sin^4\phi + \cos^4\phi - 1}{\cos^2\phi \sin^2\phi} \\ &= \frac{(\sin^2\phi + \cos^2\phi)^2 - 2\sin^2\phi \cdot \cos^2\phi - 1}{\cos^2\phi \sin^2\phi} \\ &= \frac{1 - 2\sin^2\phi \cdot \cos^2\phi - 1}{\cos^2\phi \sin^2\phi} \\ &= \frac{-2\sin^2\phi \cdot \cos^2\phi}{\cos^2\phi \sin^2\phi} = -2 \end{aligned}$$

37. If $x + y + z = 2$, $xy + yz + zx = -11$ and $xyz = -12$, then what is the value

of $\sqrt{x^3 + y^3 + z^3 - 2}$?

- A. 9
- B. 12
- C. 8
- D. 6

Ans. D

Sol.

$$x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$$

$$x^3 + y^3 + z^3 = 3xyz + (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx) \dots (i)$$

$$(x + y + z)^2 = x^2 + y^2 + z^2 + 2xy + 2yz + 2zx \dots (ii)$$

$$x + y + z = 2, xy + yz + zx = -11$$

$$\text{and } xyz = -12$$

Putting the values in eqn. (i) we get-

$$x^3 + y^3 + z^3 = 26$$

Putting the values in eqn. (ii) we get –

$$x^3 + y^3 + z^3 = 3 \times (-12) + 2(26 + 11)$$

$$x^3 + y^3 + z^3 = 38$$

Required –

$$\sqrt{x^3 + y^3 + z^3 - 2} = \sqrt{38 - 2} = 6$$



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