

21-Days Study Plan (Day 3)



1. Which one of the following began with the Dandi March?
A. Home rule Movement
B. Non-Cooperation Movement
C. Civil disobedience Movement
D. Quit India Movement

Answer ||| C

Solution ||| **Dandi March** was a march initiated by **Mohandas Gandhi** to illegally produce salt from seawater. It began on 12 March 1930. The **march** became an **important part** of the Indian independence movement and started the nationwide **Civil Disobedience Movement**.

2. Find out the correct one in the following European countries, who has become the first to sign the MoU on establishment of Nalanda University?

- A. Germany
B. Portugal
C. France
D. Denmark

Answer ||| B

Solution |||

Portugal became the first European country to sign the MoU on establishment of Nalanda University at Rajgir, Bihar. With this, Portugal became the 17th country overall and the fourth outside the East Asia Summit to do so. The ancient Nalanda University was established in 427 AD during the reign of Gupta king Sakraditya. The revived university is located at Rajgir in Nalanda District in Bihar.

3. In which state was the Nalanda University located in India?

- A. Bengal
B. Bihar
C. Orissa
D. Uttar Pradesh

Answer ||| B

Solution ||| Nalanda University (also known as **Nalanda International University**) is located in Rajgir, near Nalanda, Bihar, India.

4. Who was the last ruler of Shishunaga dynasty?

- A. Kalashoka
B. Mahanandin
C. Naga-Dasak
D. Udayin

Answer ||| B

Solution |||

- Nandivardhana as the ninth Shishunaga king and his son **Mahanandin** as the tenth and the last Shishunaga king.
- Mahanandin was killed by his illegitimate son from a Shudra wife named Mahapadma.

5. Which one is the longest epic of the world?

- A. Ramayana
B. Ramcharitmanas
C. Mahabharata
D. Hanuman Chalisa

Answer ||| C

Solution |||

- The Mahabharata by Vedvyas is the longest epic of the world .
- **The Mahābhārata** is the longest epic poem known and has been described as "the longest poem ever written". Its longest version consists of over 100,000 śloka or over 200,000 individual verse lines (each shloka is a couplet), and long prose passages.

6. Who among the following was an illiterate?

- A. Jahangir
B. Shah Jahan
C. Akbar
D. Aurangzeb



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Answer ||| C

Solution ||| Akbar was the illiterate and could not read. He had his courtiers read aloud to him so that he could remain informed.

7. Which Governor General is associated with Doctrine of Lapse?

- A. Lord Ripon
B. Lord Dalhousie
C. Lord Bentinck
D. Lord Curzon

Answer ||| B

Solution |||

- The Doctrine of Lapse was an annexation policy purportedly devised by Lord Dalhousie, who was the Governor General for the East India Company in India between 1848 and 1856.
- According to the Doctrine, any princely state or territory under the direct influence (paramountcy) of the British East India Company (the dominant imperial power in the subcontinent), as a vassal state under the British Subsidiary System, would automatically be annexed if the ruler was either "manifestly incompetent or died without a male heir.

8. One time associate of Mahatma Gandhi, broke off from him and launched a radical movement called self-respect movement. Who was he?

- A. P.Thyagaraja Shetti
B. Chhatrapati Maharaj
C. E.V. Ramaswamy Naicker
D. Jyotriaro Govindrao Phulc

Answer ||| C

Solution ||| The Self-Respect Movement is a movement with the aim of achieving a society where backward castes have equal human rights, and encouraging backward castes to have self-respect in the context of a caste based society that considered them to be a lower end of the hierarchy.

9. In September, 1932 Mahatma Gandhi began a fast unto death in yervada Jail against _____.

- A. British repression of the Sataygrahis.
B. Vilation of the Gandhi-Irwin pact.
C. Communal award of Ramsay Macdonald.
D. Communal riots in Calcutta.

Answer ||| C

Solution |||

- On **September 16th** of 1932, Mahatma Gandhi began a "fast unto death" to protest British support of a new Indian Constitution that would separate the Indian electorate by caste, thereby segregating the "untouchables" & ensuring that the social classes would remain unfairly divided .
- In 1932, a round table conference was organized and Ambedkar, an eminent lawyer and a Dailt leader was invited to attend the same.

10. Where is Lothal situated?

- A. Pakistan
B. Gujarat
C. Rajasthan
D. Haryana

Answer ||| B

Solution ||| Lothal is one of the most prominent cities of the ancient Indus valley civilization, located in the Bhal region of the modern state of Gujarat and dating from 3700 BCE.



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11. Choose the most appropriate option to change the voice (active/passive) form of the given sentence.

Our task had been completed before sunset.

- A. We completed our task before sunset.
- B. We have completed our task before sunset.
- C. We complete our task before sunset.
- D. We had completed our task before sunset.

Answer ||| D

Solution |||

The given sentence is of past perfect tense and it is in passive form. The structures for active/passive voices are:

Active: Subject + had + verb (IIIrd form) + object...

Passive: Object + had + been + verb (IIIrd form) + by + subject...

So, the active voice of the given sentence would be:

We had completed our task before sunset.

Hence, option D is the correct answer.

12. Choose the most appropriate option to change the voice (active/passive) form of the given sentence.

I have lost my book.

- A. My book had been lost.
- B. My book has been lost.
- C. My book must have been lost.
- D. My book have been lost.

Answer ||| B

Solution |||

The given sentence is of present perfect tense and it is in active form. The structures for active/passive voices are:

Active : Subject + has/have + verb (IIIrd form) + object...

Passive: Object + has/have + been + verb (IIIrd form) + by + subject...

So, the passive voice of the given sentence would be:

My book has been lost.

13. Choose the most appropriate option to change the voice (active/passive) form of the given sentence.

She is putting in many hours of work.

- A. Many hours of work will be put in by her.
- B. Many hours of work would be put in by her.
- C. Many hours of work are being put in by her.
- D. Many hours of work is being put by her.

Answer ||| C

Solution |||

Subject in active voice becomes object in passive and object in active becomes subject in passive.

Match the helping verb according to the numerical value of the elements and change the verb form to participle.

The given sentence is in active voice. Its tense is present continuous. The structures for active/passive voices are:

Active: Subject + is/are/am + verb (ing) + object...

Passive: Object + is/are/am + being + verb (IIIrd form) + by + subject...

So, with the help of the above structures, we can convert the given sentence into passive voice:

Many hours of work are being put in by her.

Some aspirants might think that option D is correct where the verb is taken as "is" rather than "are". However it is incorrect. When time, distance, money, and weight are



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considered as collective units of measure, they are considered singular because they're collectives.

Fifty kilometers is a long distance.

However, when the units are considered as separate entities, they're considered plural:

Many hours **are** lost in arguing over even obvious errors.

14. In the following question, a set of labelled sentences is given. Out of the four alternatives, select the most logical order of the sentences to form a coherent paragraph.

P. The introduction of a uniform and modern system of government by the British throughout the country unified it administratively

Q. These factors inspired the Indians with a new spirit of patriotism and nationalism.

R. India was unified and welded into a nation during the 19th and 20th centuries.

S. Furthermore, the introduction of the railways, telegraph and unified postal systems had brought the different parts of the country together and promoted mutual contact

A. RPSQ

B. PQSR

C. SPQR

D. SRQP

Answer ||| A

Solution |||

Statement R should be the opening sentence since it describes the essence of the statements i.e unification of India.

Statement P should follow since it further defines unification on the administrative front.

Statement S should follow since it further talks about unification. It is a following sentence since it states 'furthermore'.

Statement Q should follow since it is a concluding sentence for the factors which brought about the unification.

Hence, the correct sequence is RPSQ.

15. In the following question, a set of labelled sentences is given. Out of the four alternatives, select the most logical order of the sentences to form a coherent paragraph.

P. Thus, the initial goal of any intended weight loss transformation should be to first increase one's exercise capacity.

Q. The target should be reach a critical point called catching point.

R. People must exercise enough not only to burn calories for weight loss but to keep weight off.

S. Simply put, if a person can walk for only five minutes today, he or she cannot expect to be successful on a program that calls for hours of exercise beyond that amount each time, tomorrow.

A. RPQS

B. RSPQ

C. PQRS

D. SRQP

Answer ||| B

Solution |||

Sentence R should be the first sentence since it introduces the central idea i.e exercise and its importance.

Sentence S should follow since it defines the expression in R.

Sentence P should follow since it concludes the two preceding statements. It draws a conclusion between R and S and states that their inference is the reason for setting up the initial goal.

Sentence Q should follow since it defines the target. It states 'this target' which is mentioned in the preceding statements.

Hence, the correct sequence is RSPQ.



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16.

|||Common||| In the following question, a set of labelled sentences is given. Out of the four alternatives, select the most logical order of the sentences to form a coherent paragraph. |||End|||

P. We fail to understand that what gets registered in our lives is the corollary of worship and our deeds.

Q. The ever-increasing number of crimes against women make us doubt the once infamous 'Mother India'.

R. On one hand, we worship the female form while on the other we wish to explore the form at the wish of our hands.

S. The value associated with 'Mother' needs to be reworked upon or done away with completely. A. QSRP

B. QSPR

C. RSQP

D. PSRQ

Answer ||| A

Solution |||

Statement Q should be the first sentence since it introduces the central idea i.e increase in crimes against women.

Statement S should follow since it continues on the same line and talks about the title 'Mother' and its diminishing value.

Statement R should follow since it introduces worship and action, the relationship between which is established in statement P.

Hence, the correct sequence is QSRP.

17.

|||Common||| In the following question, a set of labelled sentences is given. Out of the four alternatives, select the most logical order of the sentences to form a coherent paragraph. |||End|||

P. In this way we can build better habits as individuals, create better products as companies, and develop better living spaces as communities.

Q. The researchers and scientists who study behavioural psychology, are trying to understand why we behave the way we do and they are concerned with discovering patterns in our actions and behaviours.

R. The idea is to use behavioural psychology to help us predict how humans will behave.

S. Behavioral psychology is the study of the connection between our minds and our behaviour. A. SQRP

B. SPRQ

C. SPQR

D. RQSP

Answer ||| A

Solution ||| Sentence S should be the first sentence as it introduces the subject "behavioral psychology". Sentence Q explains the study and research conducted on the subject. It should be followed by Sentence R as it suggests how the idea is further thought to be utilized after the study and research. Sentence P afterwards implies how the usage of the idea can be beneficial. The correct sequence is thus SQRP.

18. In each of the following questions, choose the correct alternative from the given ones that will complete the series.

480, ?, 24, 8, 4



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- A. 98
- B. 96
- C. 104
- D. 88

Answer ||| B

Solution ||| If we look the series in reverse order then,

$$8 = 4 \times 2;$$

$$24 = 8 \times 3;$$

→ Multiplier increased by '1' in every next step.

$$\text{Therefore } ? = 24 \times 4 = 96$$

$$\rightarrow 480 = 96 \times 5$$

$$\text{Hence '}' = 96$$

Hence, the correct option is B.

19. Choose the correct alternative from the given ones that will complete the series.

A, Z, B, Y, C, X, ?, ?

- A. EV
- B. WD
- C. DW
- D. YV

Answer ||| C

Solution ||| The series can be divided into two different series.

A, B, C, ? & Z, Y, X, ?

Clearly first series is increasing by 1 in every next step and second series is decreasing by 1 in every next step

Therefore A, B, C, ? = D & Z, Y, X, ? = W

⇒ ?, ? = D, W

Hence, the correct option is C.

20. In the following question, select the related word from the given alternatives.

Poem : Rhyme :: Movie : ?

- A. Popcorn
- B. Cold-drink
- C. Scenes
- D. Places

Answer ||| C

Solution ||| As, poem contains rhymes. Similarly, movie contains scenes in it.

Hence, option (C) is the correct response.

21. In the following question, select the related word pair from the given alternatives.

Owl : Owlet :: Cow : ?



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- A. Calf
- B. kid
- C. cowlet
- D. fawn

Answer ||| A

Solution ||| Young ones of the owl are owlet and the young ones of the cow are heifer.

Hence, option A is the correct response.

22. In each of the following questions, select the related letter.

EBHF : YHX?

- A. U
- B. V
- C. L
- D. T

Answer ||| C

Solution ||| Pattern follows here:

$E(5) = 5 \times 5 = 25$ Which is place value of Y

$B(2) = 2 \times 4 = 8$ Which is place value of H

$H(8) = 8 \times 3 = 24$ Which is place value of X

$F(6) = 6 \times 2 = 12$ Which is place value of **L**

Hence, option C is the correct answer.

23. In the following question, select the related number from the given alternatives.

17 : 96 :: 23 : ?

- A. 212
- B. 413
- C. 132
- D. 246

Answer ||| C

Solution ||| As,

$$(17 \times 6) - 6 = 102 - 6 = 96$$

Similarly,

$$(23 \times 6) - 6 = 138 - 6 = 132$$

Hence, option (C) is the correct response.

24. Select the related word/letter/number from the given alternatives.

P19: G10 :: M16: ?

- A. S20
- B. R21
- C. Q26
- D. P26

Answer ||| B



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Solution ||| The position values of the alphabets as per the alphabetical series are used where A=1, B=2, C=3 and so on.

P-16, $16+3=19$

G-7, $7+3=10$

Similarly,

M-13, $13+3=16$

R - 18, $18+3=21$

Hence, option B is the correct response.

25.If a sum of money compounded annually comes 1.5129 times of itself in 2 years, then the rate of interest per annum is:

A. 13%

B. 22%

C. 21%

D. 23%

Answer ||| D

Solution |||
$$1.5129P = P \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1.23^2 = \left(1 + \frac{R}{100}\right)^2$$

$$\Rightarrow 1.23 = 1 + \frac{R}{100}$$

$$\Rightarrow R = 23\%$$

26.Hitest lent some money to Mukesh for 2 years. If Hitesh uses the compound interest

rate of $12\frac{1}{2}\%$, after 2 years Mukesh gives Rs. 510 as interest. If Hitesh uses the simple interest rate on the same amount, for same period and at same rate, then how much interest Mukesh will pay after 2 years.

A. Rs. 400

B. Rs. 450

C. Rs. 460

D. Rs. 480

E. Rs. 490

Answer ||| D

Solution ||| SI, $I = (P \times r \times t)/100$

For CI:

$$A = P \left(1 + \frac{r}{100}\right)^t ; CI = A - P$$

Given, compound interest on a sum for 2 years at $12\frac{1}{2}$ p.a. is rs. 510.

$$A = P \left(1 + \frac{12.5}{100}\right)^2$$

$$\Rightarrow A = P(1.125)^2$$

$$\Rightarrow A = 1.265625P$$



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$$\begin{aligned} CI &= A - P \\ \Rightarrow CI &= 1.265625P - P \\ \Rightarrow CI &= 0.265625P \\ \text{Given, } CI &= \text{Rs. } 510 \\ \therefore 0.265625P &= 510 \\ \Rightarrow P &= \text{Rs. } 1920 \end{aligned}$$

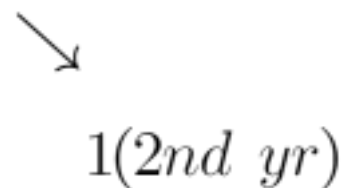
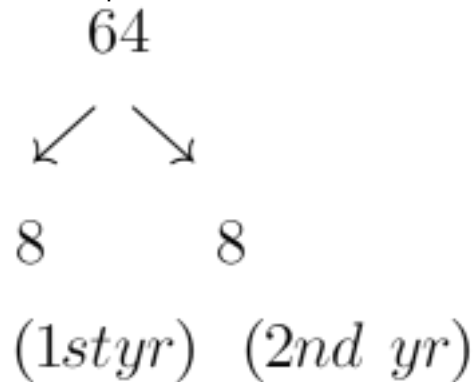
SI on the same sum at the same rate for the same period of time is:

$$\begin{aligned} SI &= (1920 \times 12.5 \times 2)/100 \\ \Rightarrow SI &= \text{Rs. } 480 \end{aligned}$$

Short Trick:

$$12.5\% = 1/8$$

Take square of denominator as sum



So, total interest is 17 which is equal to 510

So, 64 will be equal to 1920

$$(1920 \times 12.5 \times 2) \div 100$$

Now calculate SI =

SI= 480 Rs

27. Two spheres of equal radius are taken out by cutting from a solid cube of side

$$(12 + 4\sqrt{3})$$

cm. What is the maximum volume (in cm^3) of each sphere ?

- A. 1077.31
- B. 905.14
- C. 966.07
- D. 1007.24

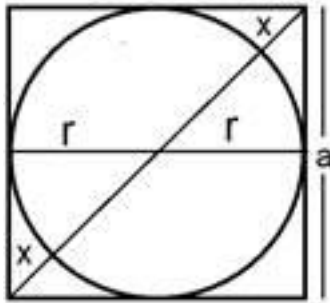
Answer ||| B

Solution ||| We need the value of x .

Let the side of cube be a .



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$$a = 2r$$

Body diagonal of a sphere = $a\sqrt{3}$

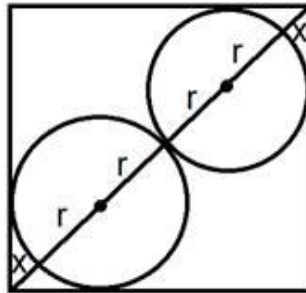
$$\sqrt{3}a = \sqrt{3} \times 2r$$

$$2x = 2\sqrt{3}r - 2r$$

$$2x = 2r(\sqrt{3} - 1)$$

$$x = (\sqrt{3} - 1)r$$

If we need maximum value of two sphere then we cut it diagonally.



Let the radius of sphere be r

$$\text{Diagonal of cube} = 4r + 2r(\sqrt{3} - 1)$$

$$\sqrt{3}(12 + 4\sqrt{3}) = 4r + 2r\sqrt{3} - 2r$$

After solving above equation, we get

$$r = 6$$

Required

$$= \frac{4}{3} \times \frac{22}{7} \times 6^3$$

$$= 216 \times \frac{88}{21} = 905.14.$$

28. Three toys are in the shape of the cylinder, hemisphere, and cone. The three toys have the same base. The height of each toy is cm. What is the ratio of the total surface areas of the cylinder, hemisphere and cone respectively?



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- A. $4:3:[(\sqrt{2})+1]$
- B. $4:3:[2+(\sqrt{2})]$
- C. $4:3:2\sqrt{2}$
- D. $2:1:(1+\sqrt{2})$

Answer ||| A

Solution ||| Height of each toys = $2\sqrt{2}$

Height of hemisphere is equal to its base radius so radius of hemisphere is also $2\sqrt{2}$

As base of all three shapes are equal so radius of each will be $2\sqrt{2}$ and height also be $2\sqrt{2}$ so $r = h$

Slant height of cone = $\sqrt{[(2\sqrt{2})^2 + (2\sqrt{2})^2]} = \sqrt{16} = 4 = \sqrt{2} \times r$

Required ratio = $2\pi r(h + r) : 3\pi r^2 : \pi r(l + r)$

= $2r \times 2r : 3r^2 : r(\sqrt{2}r + r)$

= $4:3:[\sqrt{2}+1]$

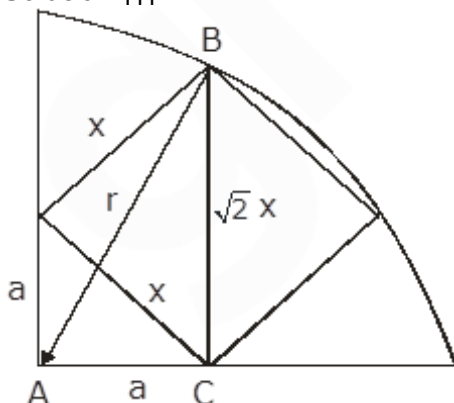
29. A square is inscribed in a quarter circle in such a way that two of its adjacent vertices on the radius are equidistant from the centre and other two vertices lie on the

circumference. If the side of square is $\sqrt{(\frac{5}{2})}cm$, then what is the radius (in cm) of the circle?

- A. 2
- B. 2.5
- C. 5
- D. 10

Answer ||| B

Solution |||



Let the side of square = $\sqrt{(\frac{5}{2})}cm = x \text{ cm}$



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$$\begin{aligned} \Rightarrow a^2 + a^2 &= x^2 \\ \Rightarrow 2a^2 &= x^2 \\ \Rightarrow x &= \sqrt{2}a \text{ or } a^2 = \frac{x^2}{2} \\ \text{Diagonal of square} &= \sqrt{2} \times \text{side} = \sqrt{2}x = BC \\ \text{Now in right angle triangle ABC} \\ \Rightarrow AB^2 &= AC^2 + BC^2 \\ \Rightarrow r^2 &= a^2 + 2x^2 \\ \Rightarrow &= a^2 + 2(\sqrt{2}a)^2 \\ \Rightarrow &= a^2 + 2(2a^2) = 5a^2 \\ \Rightarrow r^2 &= \frac{5x^2}{2} \\ \Rightarrow r^2 &= \frac{5}{2} \times \frac{5}{2} = \frac{25}{4} \\ \Rightarrow r &= \frac{5}{2} = 2.5 \text{ cm} \end{aligned}$$

30. The base of a prism is a trapezium. The length of the parallel sides are 15cm and 18cm and the distance between the parallel sides is 10cm, if the volume of the prism is 1485 cm^3 , then the height of the prism is:

- A. 44cm
- B. 16.5cm
- C. 7cm
- D. 9cm

Answer ||| D
Solution |||

$$\begin{aligned} \text{Area of trapezium} &= \frac{1}{2} \times h (AB + CD) \\ &= \frac{1}{2} \times 10 \times (15 + 18) = 5 \times 33 = 165 \text{ cm}^2 \end{aligned}$$

Volume of prism = height of prism \times area of base

$$\Rightarrow 1485 = \text{height} \times 165 \text{ (given)} = 9 \text{ cm}$$

31. The radius of two cylinders are in the ratio of 3:2 and their heights are in the ratio 3:7. The ratio of their volumes is :

- A. 4:7
- B. 7:4
- C. 28:27
- D. 27:28

Answer ||| D

Solution ||| Let r_1, r_2 be the radius of two cylinders and h_1, h_2 be the heights of those cylinders respectively.

Therefore,



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$$\frac{r_1}{r_2} = \frac{3}{2} \quad \text{and} \quad \frac{h_1}{h_2} = \frac{3}{7}$$

Volume of I cylinder, $V_1 = \pi r_1^2 h_1$

Volume of II cylinder, $V_2 = \pi r_2^2 h_2$

$$\frac{V_1}{V_2} = \frac{\pi r_1^2 h_1}{\pi r_2^2 h_2}$$

$$\frac{V_1}{V_2} = \left(\frac{r_1}{r_2}\right)^2 \times \frac{h_1}{h_2}$$

$$\frac{V_1}{V_2} = \left(\frac{3}{2}\right)^2 \times \frac{3}{7}$$

$$\frac{V_1}{V_2} = \frac{9}{4} \times \frac{3}{7} = \frac{27}{28}$$

$$V_1 : V_2 = 27 : 28$$



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