

Q.1 One atomic mass unit is defined as a mass exactly equal to one twelfth the mass of one atom.

Options :

- a. Hydrogen
- b. Carbon-12
- c. Oxygen
- d. Sulphur

- Chosen Option : b
- Correct Answer: b

Q.2 In the modern periodic table, the period indicates the value of

Options :

- a. atomic number
- b. atomic mass
- c. principal quantum number
- d. Azimuthal quantum number

- Chosen Option : a
- Correct Answer: c

Q.3 One mole of H_2O + one mole of CO are taken in a 10 L vessel and heated to 725 K. At equilibrium 40% of water (by mass) reacts with CO according to the equation $\text{H}_2\text{O} (\text{g}) + \text{CO} (\text{g}) \rightleftharpoons \text{H}_2 (\text{g}) + \text{CO}_2 (\text{g})$ The equilibrium constant is equal to

Options :

- a. 0.88
- b. 0.66
- c. 0.44

d. 0.22

- Chosen Option : c
- Correct Answer: c

Q.4 What is the number of s-electron in the valence shell of alkaline earth metals.

Options :

- a. Zero
- b. One
- c. Two
- d. Three

- Chosen Option : b
- Correct Answer: c

Q.5 In the Lassaigne's test for nitrogen in an organic compound, the Prussian blue color is obtained due to the formation of

Options :

- a. $\text{Na}_4 [\text{Fe}(\text{CN})_6]_3$
- b. $\text{Fe}_4 [\text{Fe}(\text{CN})_6]_3$
- c. $\text{Fe}_2 [\text{Fe}(\text{CN})_6]_3$
- d. $\text{Fe}_3 [\text{Fe}(\text{CN})_6]_3$

- Chosen Option : b
- Correct Answer: b

Q.6 If $\log_x \left(\frac{16}{9} \right) = -\frac{1}{2}$, then the value of x is equal to

Options :

Options :

- a. $\frac{3}{4}$
- b. $\frac{4}{3}$
- c. $\frac{81}{256}$
- d. $\frac{256}{81}$

- Chosen Option : c
- Correct Answer: c

Q.7 The number of integral values of k for which the equation $7 \cos x + 5 \sin x = 2k + 1$ has a solution is

Options :

- a. 4
- b. 8
- c. 10
- d. 12

- Chosen Option : d
- Correct Answer: b

Q.8 The orthocenter of the triangle formed by the lines $x = 0, y = 0$ & $x + y = 1$ is

Options :

- a. $\left(\frac{1}{3}, \frac{1}{3}\right)$
- b. $\left(\frac{1}{2}, \frac{1}{2}\right)$
- c. $(0,0)$

d. (1,1)

- Chosen Option : b
- Correct Answer: c

Q.9

The value of $\lim_{x \rightarrow \pi/2} \frac{\left(1 - \tan\left(\frac{x}{2}\right)\right)(1 - \sin x)}{\left(1 + \tan\left(\frac{x}{2}\right)\right)(\pi - 2x)^3}$ is

Options :

- a. 0
- b. $\frac{1}{32}$
- c. ∞
- d. $\frac{1}{8}$

- Chosen Option : b
- Correct Answer: b

Q.10 The sum of the series ${}^{20}C_0 - {}^{20}C_1 + {}^{20}C_2 - \dots + {}^{20}C_{10}$ is

Options :

- a. 0
- b. ${}^{20}C_{10}$
- c. $-\frac{1}{2}({}^{20}C_{10})$
- d. $\frac{1}{2}({}^{20}C_{10})$

- Chosen Option : c
- Correct Answer: d

Q.11 Two charged spheres of radii R_1 and R_2 are having equal charge density. What is the ratio of their potential?

Options :

- a. R_2/R_1
- b. $(R_2/R_1)^2$
- c. $(R_1/R_2)^2$
- d. R_1/R_2

- Chosen Option : c
- Correct Answer: d

Q.12 The magnetic induction at a point P which is at a distance of 4 cm from a long current carrying wire is 10^{-8} tesla. The field of induction at a distance of 12 cm from the same current would be

Options :

- a. 3.33×10^{-9} tesla
- b. 1.11×10^{-4} tesla
- c. 3×10^{-3} tesla
- d. 9×10^{-2} tesla

- Chosen Option : b
- Correct Answer: a

Q.13 When light travels from an optically rarer medium to an optically denser medium, the velocity decreases because of change in

Options :

- a. Frequency

- b. Wavelength
- c. Amplitude
- d. Phase

- Chosen Option : c
- Correct Answer: b

Q.14 The ionization energy of hydrogen atom is 13.6 eV. The ionization energy of helium atom would be

Options :

- a. 27.2eV
- b. 13.6eV
- c. 54.4eV
- d. 6.8eV

- Chosen Option : a
- Correct Answer: c

Q.15 In Ge sample, gallium is added as impurity. The resultant sample will behave as

Options :

- a. Conductor
- b. A P- type semiconductor
- c. An N -type semiconductor
- d. An insulator

- Chosen Option : b
- Correct Answer: b

Q.16 The Anangpur Building Centre in Faridabad was established by which of the following Indian Architects?

Options :

- a. Bijoy Jain
- b. Laurie Baker
- c. B.V. Doshi
- d. Anil Laul

- Chosen Option : --
- Correct Answer: d

Q.17 The Bihar Museum at Patna was designed by which of the following architects?

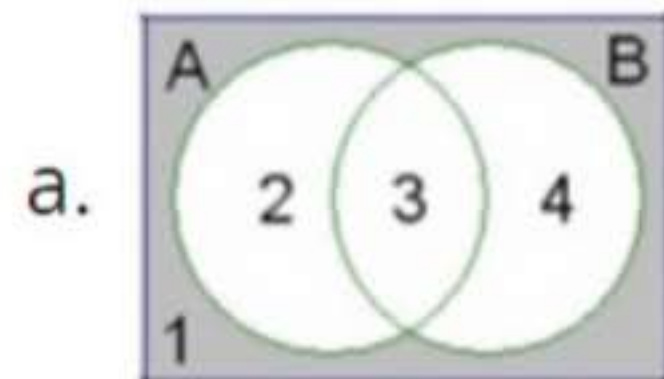
Options :

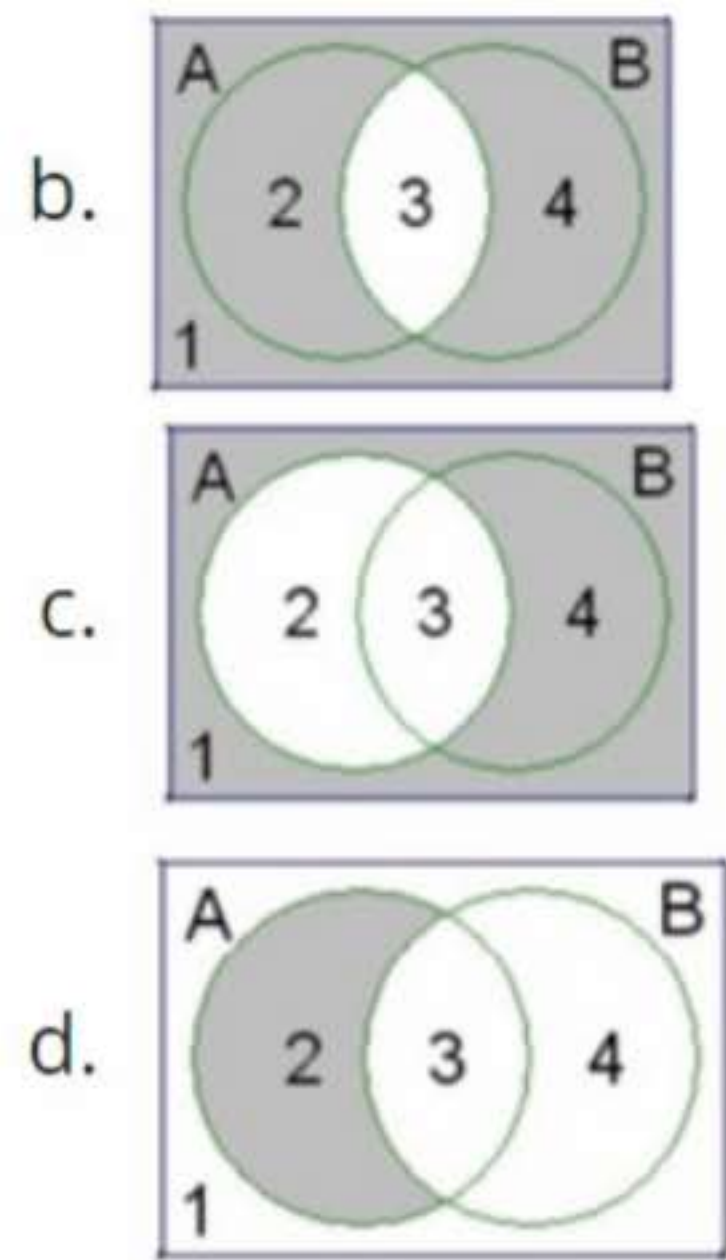
- a. Flying Elephant
- b. Maki and Associates
- c. Peter Zumthor
- d. Hafeez Contractor

- Chosen Option : --
- Correct Answer: b

Q.18 Which diagram would you use to represent $A \cap B'$

Options :





- Chosen Option : --
- Correct Answer: d

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Q.19 What is the minimum number of edges a regular octahedron have

Options :

- a. 6
- b. 8
- c. 12
- d. 18

- Chosen Option : --
- Correct Answer: c

Q.20 Which of the following is contra positive of the statement “You win the game if you know the rules but are not over confident.”

Options :

- If you lose the game then you don't know the rules or you are over confident.
- If you don't know the rules or are over confident you lose the game
- If you know the rules and are over confident then you win the game
- A necessary condition that you know the rules or you are not over confident is that you win the game.

- Chosen Option : c
- Correct Answer: a

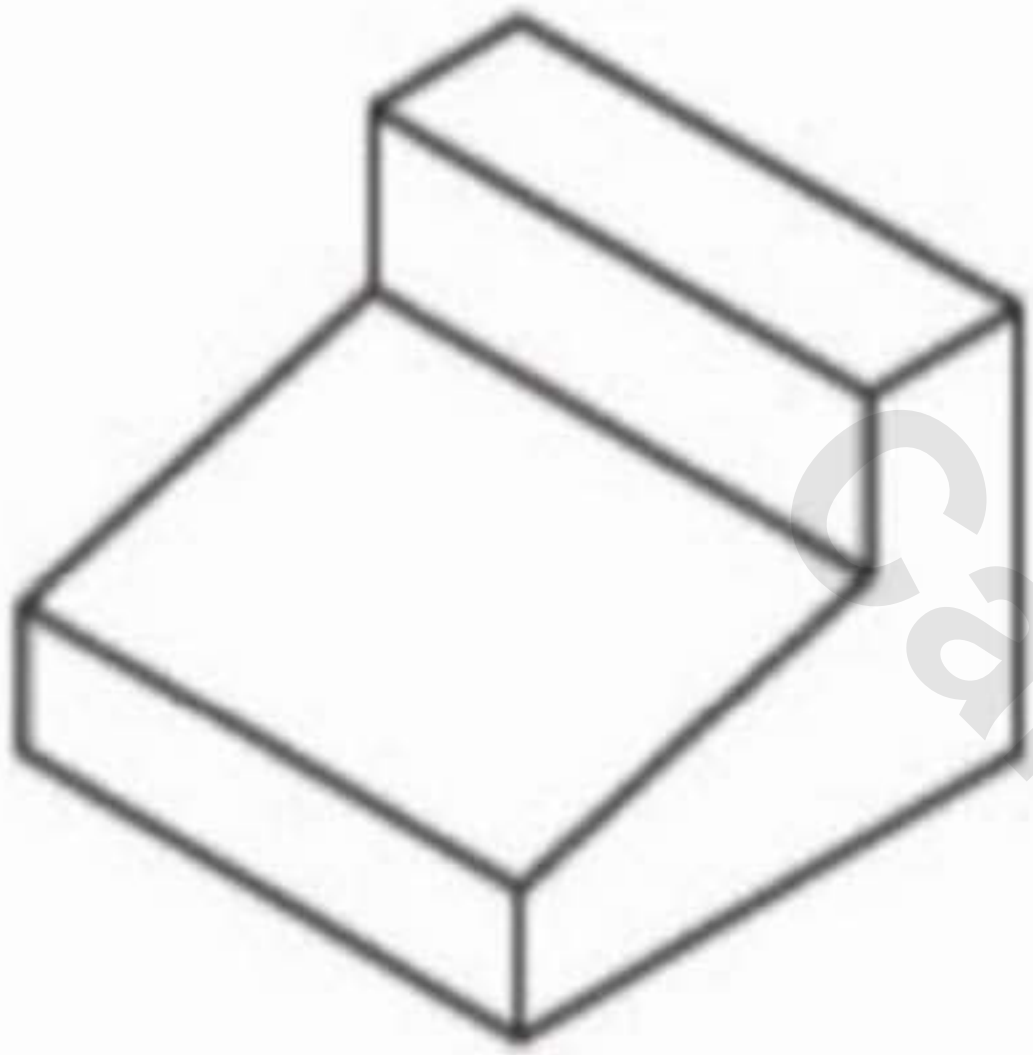
Q.21 Vertical element in a building is

Options :

- Architrave
- Pediment
- Cladding
- Pilaster

- Chosen Option : c
- Correct Answer: d

Q.22 How many edges are there in the object shown below?

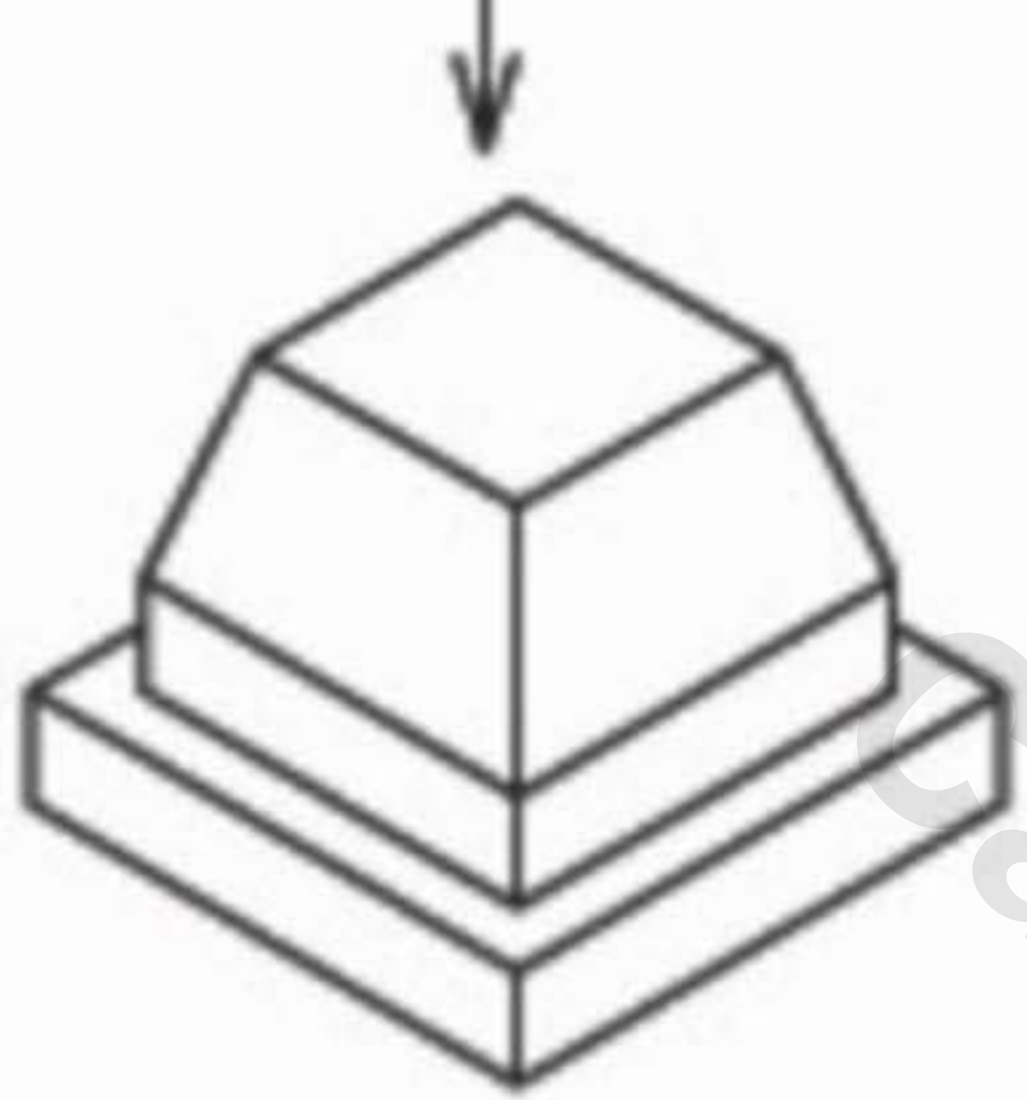


Options :

- a. 14
- b. 20
- c. 18
- d. 16

- Chosen Option : b
- Correct Answer: c

Q.23 How does the object appear when seen from the direction of the arrow



Options :

a.



b.



c.



d.



- Chosen Option : --
- Correct Answer: a

Q.24 Which architectural firm has been awarded the design of N Delhi's Central Vista?

Options :

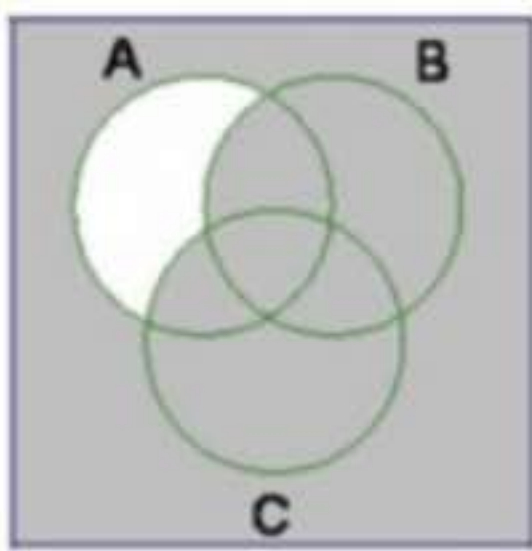
- a. Stup Consultants
- b. Foster and Partners
- c. HCP Designs
- d. Bjarke Ingels Group

- Chosen Option : b
- Correct Answer: c

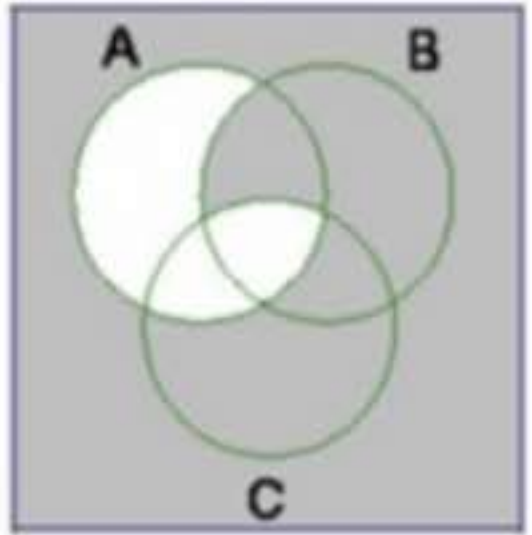
Q.25 Which Venn Diagram represents $A \cup (C \cap B)$

Options :

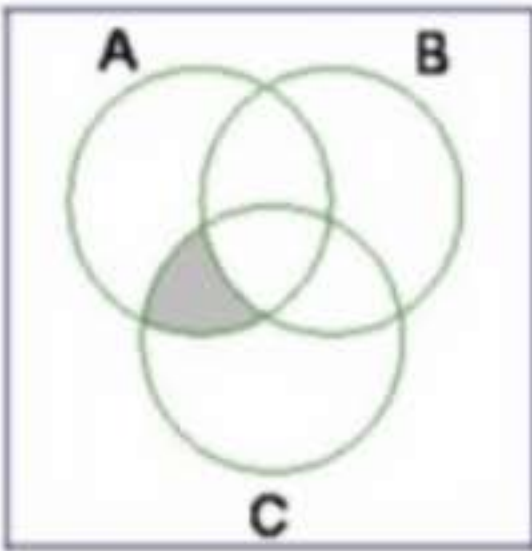
a.



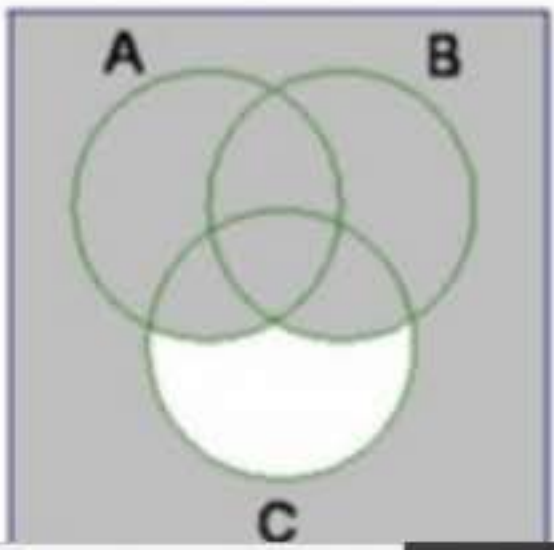
b.



c.



d.



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- Chosen Option : --
- Correct Answer: d

Q.26 Who was awarded the Pritzker award for architecture in 2019

Options :

- a. Shelley McNamara
- b. Shigeru Ban
- c. B. V. Doshi
- d. Arata Isozaki

- Chosen Option : --
- Correct Answer: d

Q.27 INTACH focuses on

Options :

- a. Construction management
- b. Heritage
- c. Urban Planning
- d. Rural Housing

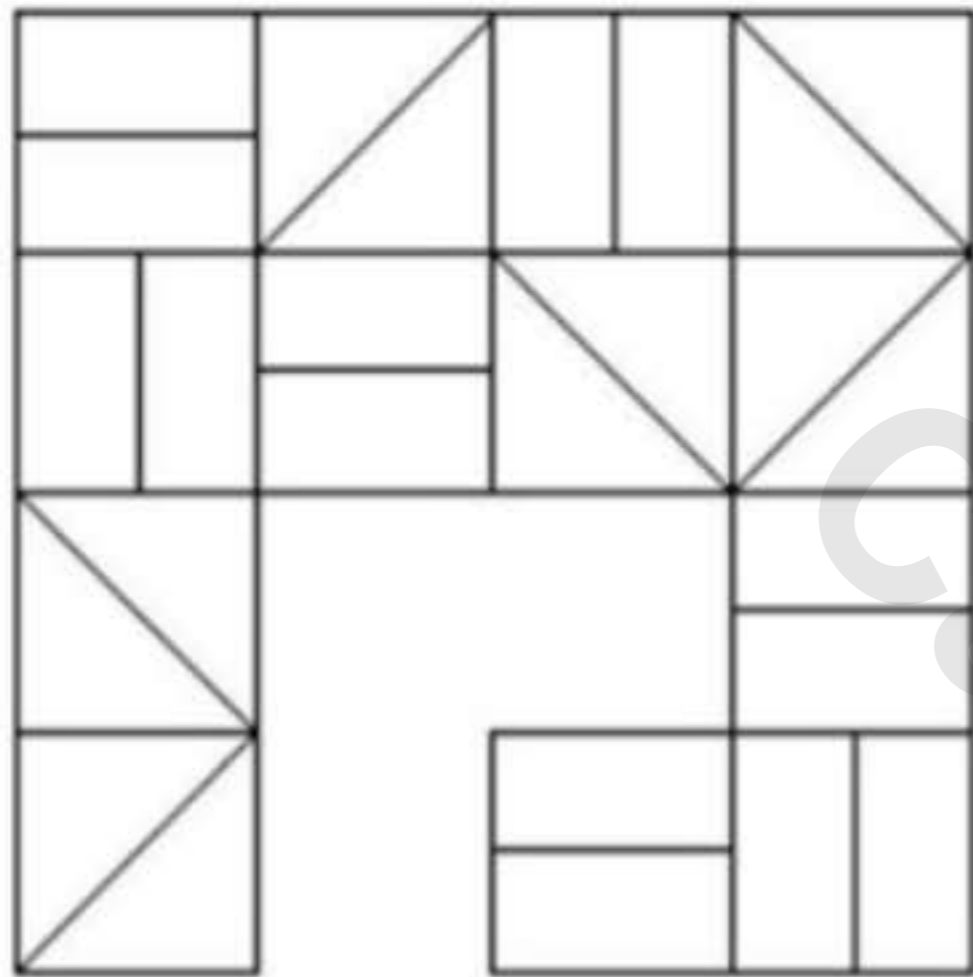
- Chosen Option : --
- Correct Answer: b

Q.28 IGBC stands for

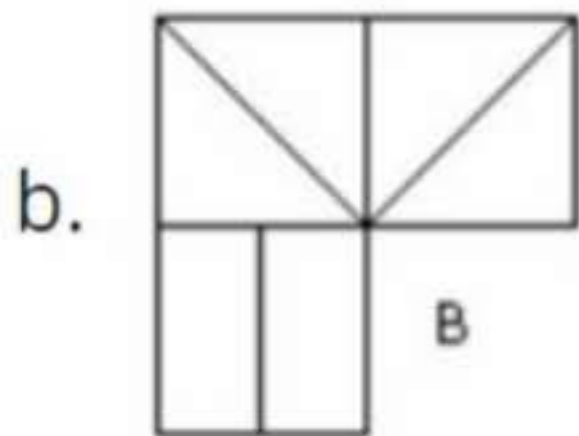
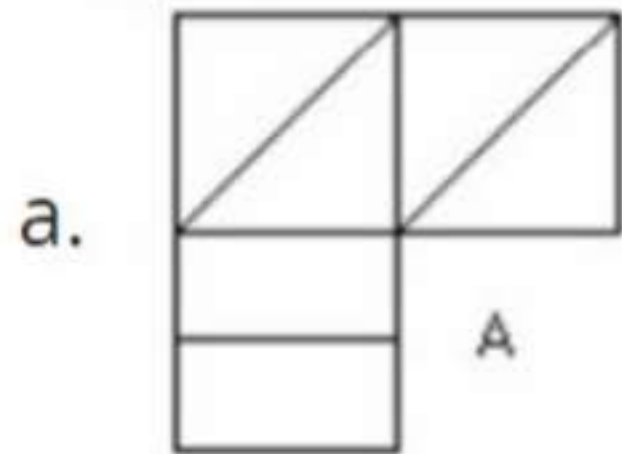
Options :

- a. International Green Building Council.
- b. Institute of Green Building and Conservation
- c. Indian Green Building Council

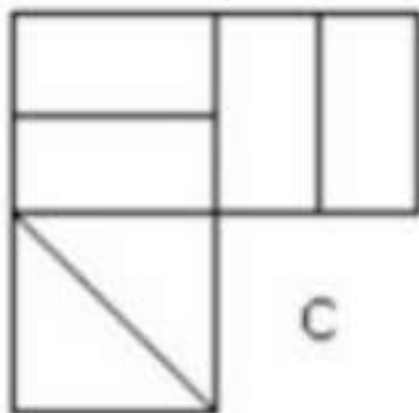
Q.29 Which of the answer figure best fits the missing space in the Question Figure



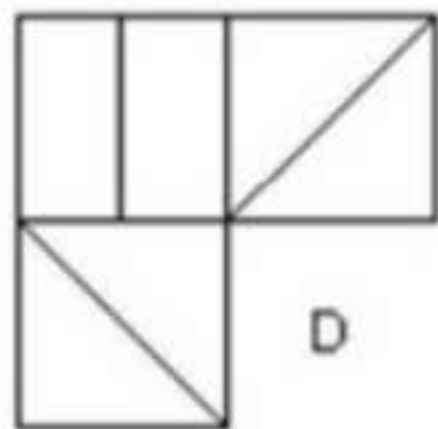
Options :



c.



d.



- Chosen Option : --
- Correct Answer: d

Q.30 Using DeMorgan's Law, which of the following is equivalent to the statement $A' \cap B$

Options :

- a. $A \cup B$
- b. $A' \cup B'$
- c. $A \cup B'$
- d. $(A \cup B)'$

- Chosen Option : --
- Correct Answer: d

Q.30 Using DeMorgan's Law, which of the following is equivalent to the statement $A' \cap B$

Options :

- a. $A \cup B$
- b. $A' \cup B'$
- c. $A \cup B'$
- d. $(A \cup B)'$

- Chosen Option : --
- Correct Answer: d

Q.31 BIM stands for

Options :

- a. Built Intervention Matrix
- b. Building Infrastructure Modeling
- c. Build Innovate Market
- d. Building Information Modeling

- Chosen Option : --
- Correct Answer: d

Q.32 Which of the following is a tautology?

Options :

- a. I went there at 8, two hours after 6.
- b. I went there at 8.
- c. I went there in the morning.

d. I went there past 7

- Chosen Option : --
- Correct Answer: a

Q.33 The following material is a metamorphic rock

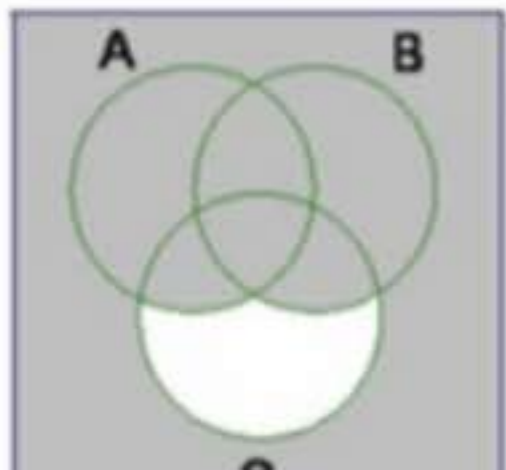
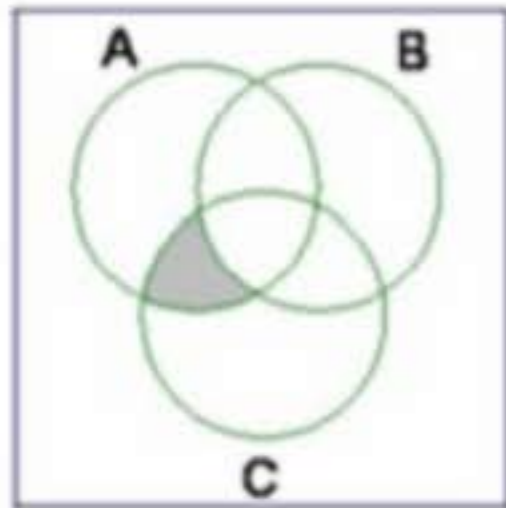
Options :

- a. Slate
- b. Sandstone
- c. Granite
- d. Limestone

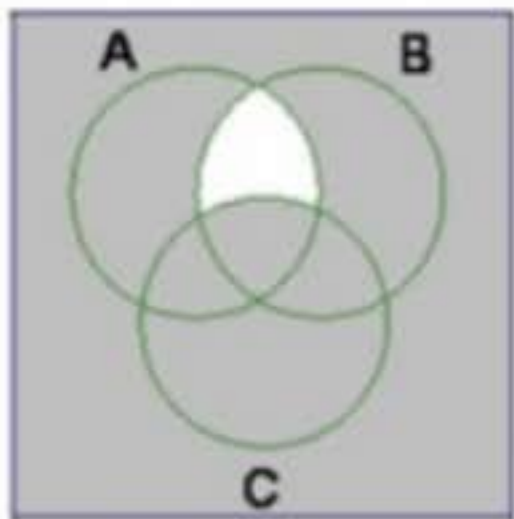
- Chosen Option : --
- Correct Answer: a

Q.34 Which Venn Diagram represents $(A \cap B)' \cup C$

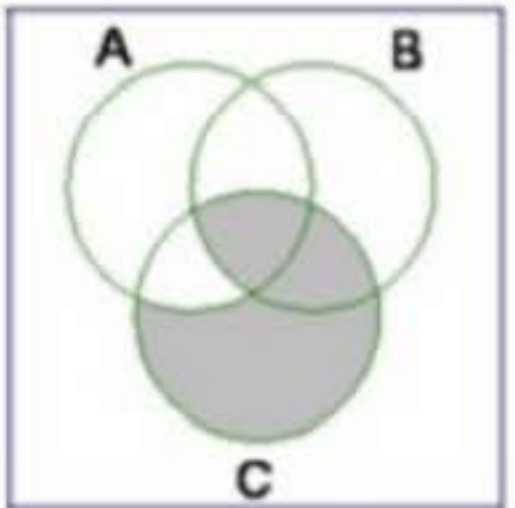
Options :



c.



d.



- Chosen Option : b
- Correct Answer: c

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Q.35 If n is divisible by 30 then n is divisible by 2 and by 3 and by 5'; which of the following statements is equivalent to this statement?

Options :

- a. If n is divisible by 2 or divisible by 3 or divisible by 5 then n is divisible by 30.
- b. If n is divisible by 2 and divisible by 3 and divisible by 5 then n is divisible by 30
- c. If n is not divisible by 30 then n is not divisible by 2 or not divisible by 3 or not divisible by 5
- d. If n is not divisible by 2 or not divisible by 3 or not divisible by 5 then n is not divisible by 30

- Chosen Option : --
- Correct Answer: d

Q.36 What is the base shape of a tetrahedron

Options :

- a. Square
- b. Triangle
- c. Rectangle
- d. Hexagon

- Chosen Option : b
- Correct Answer: b

Q.37 Which figure could be assembled using each of the provided pieces?



Options :

Q.36 What is the base shape of a tetrahedron

Options :

- a. Square
- b. Triangle
- c. Rectangle
- d. Hexagon

- Chosen Option : b
- Correct Answer: b

Q.37 Which figure could be assembled using each of the provided pieces?



Options :

- Chosen Option : --
- Correct Answer: a

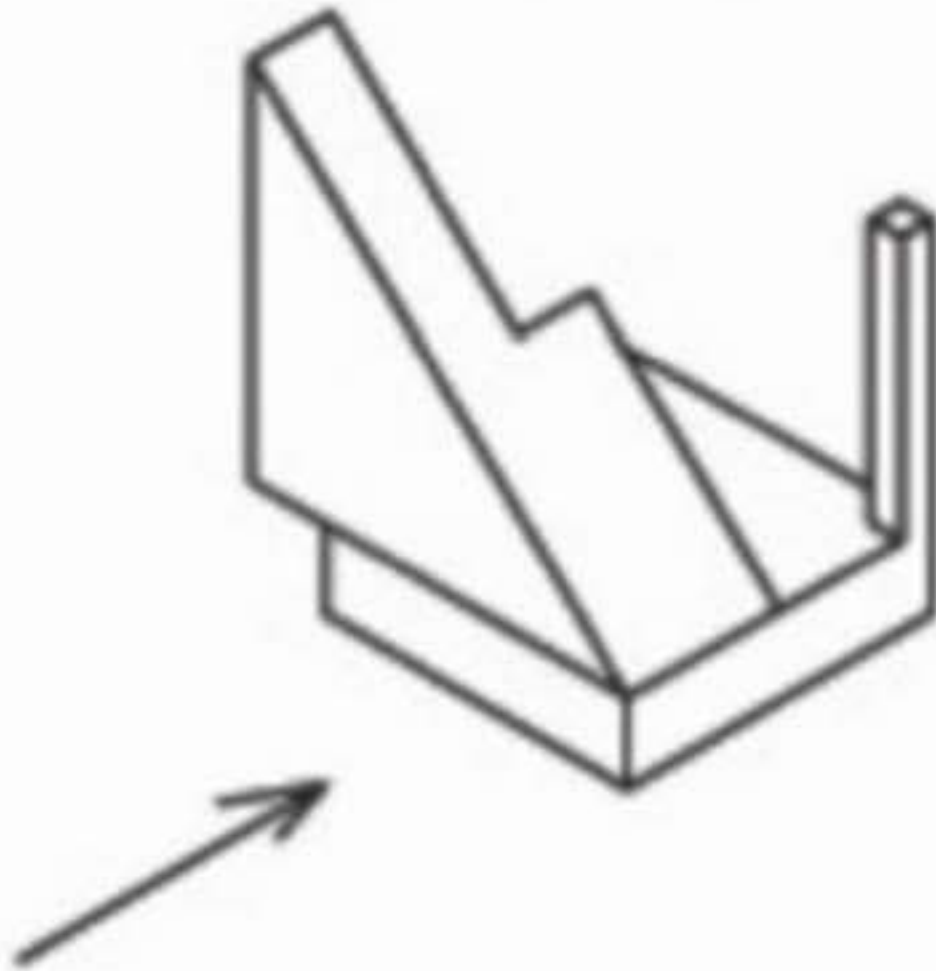
Q.38 On the colour wheel the combination of Violet -Yellow or Orange - Blue are best described as

Options :

- a. Complementary colours
- b. Supplementary colours
- c. Analogous colours
- d. Monochromatic colours

- Chosen Option : --
- Correct Answer: a

Q.39 How does the object appear when seen from the direction of the arrow.



Options :

a.



b.



c.

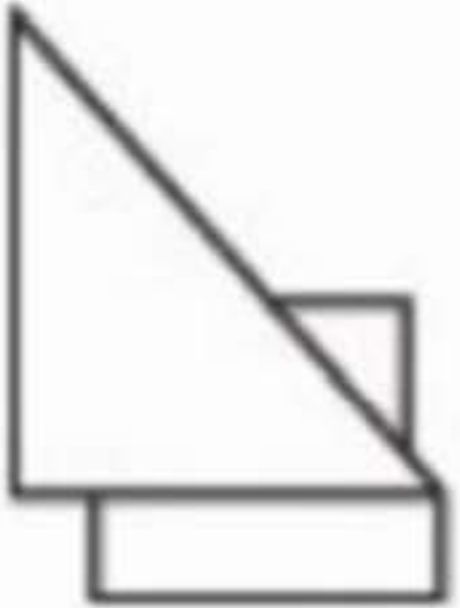


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c.



d.



- Chosen Option : --
- Correct Answer: a

Q.40 Contour lines join place of equal

Options :

- a. Rain fall
- b. Atmospheric Pressure
- c. Atmospheric Temperature

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Q.41 Which of the following statements is the negation of the statements “4 is odd or -9 is positive”?

Options :

- a. 4 is even or -9 is not negative
- b. 4 is odd or -9 is not negative
- c. 4 is even and -9 is negative
- d. 4 is odd and -9 is not negative

- Chosen Option : b
- Correct Answer: c

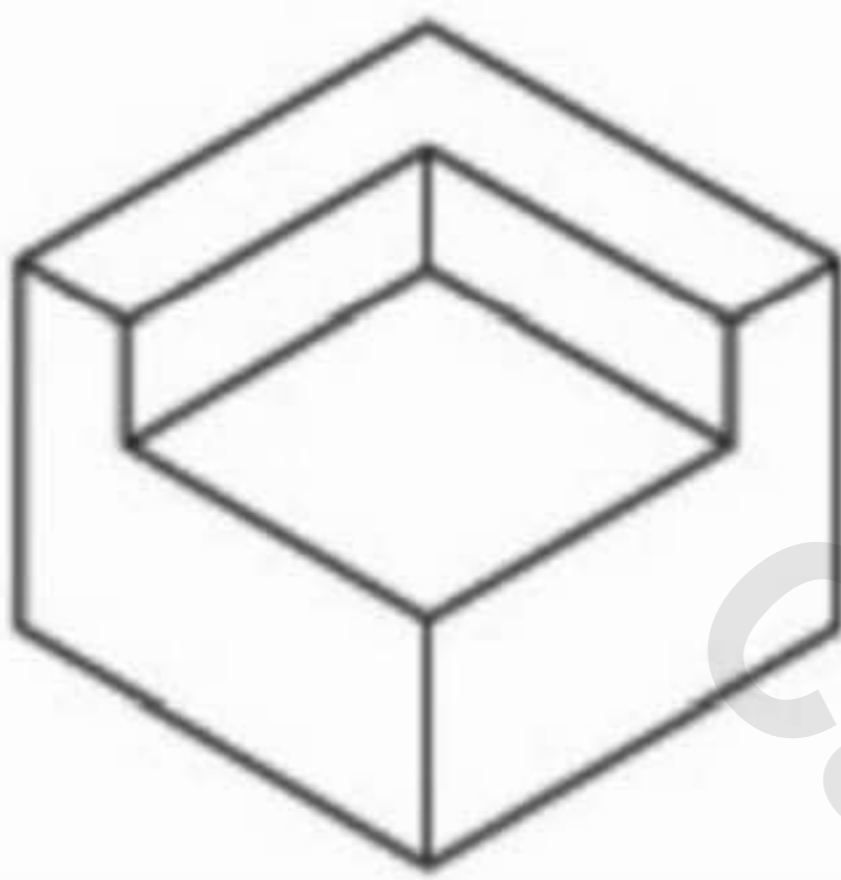
Q.42 What is tautology?

Options :

- a. A meaningfully repetitive phrase
- b. Saying the same thing twice in different words
- c. Saying different things in the same words
- d. A poetic repetitive phrase

- Chosen Option : c
- Correct Answer: b

Q.43 How many surfaces does the object below contain?



Options :

- a. 8
- b. 9
- c. 10
- d. 6

- Chosen Option : --
- Correct Answer: b

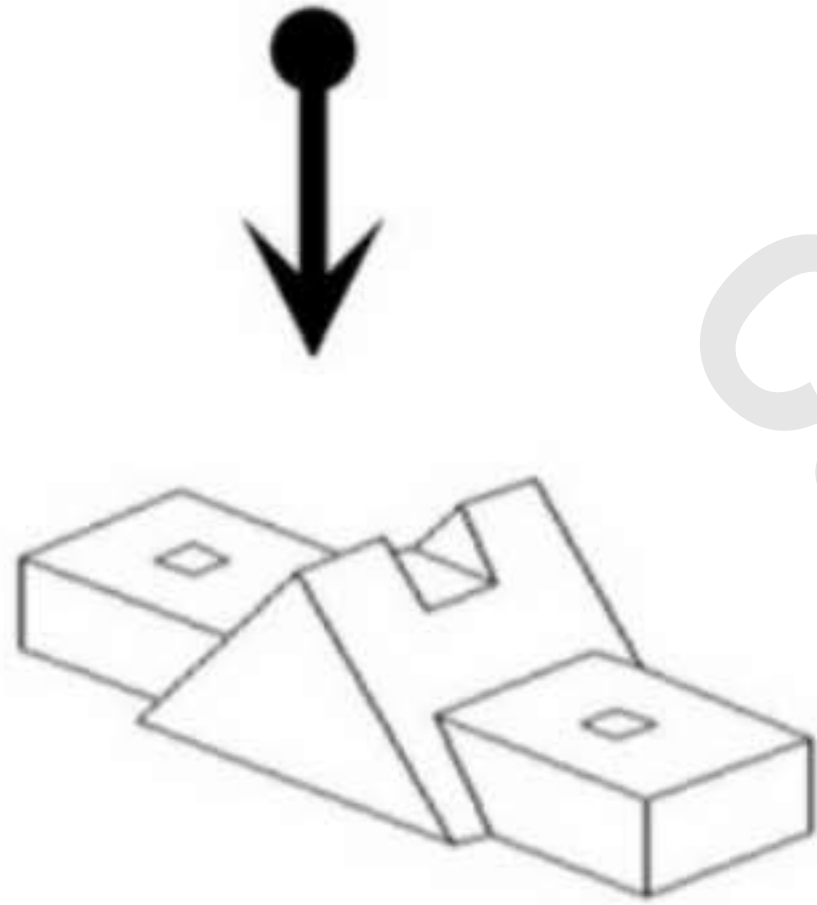
Q.44 A compound proposition that is neither a tautology nor a contradiction is called a

Options :

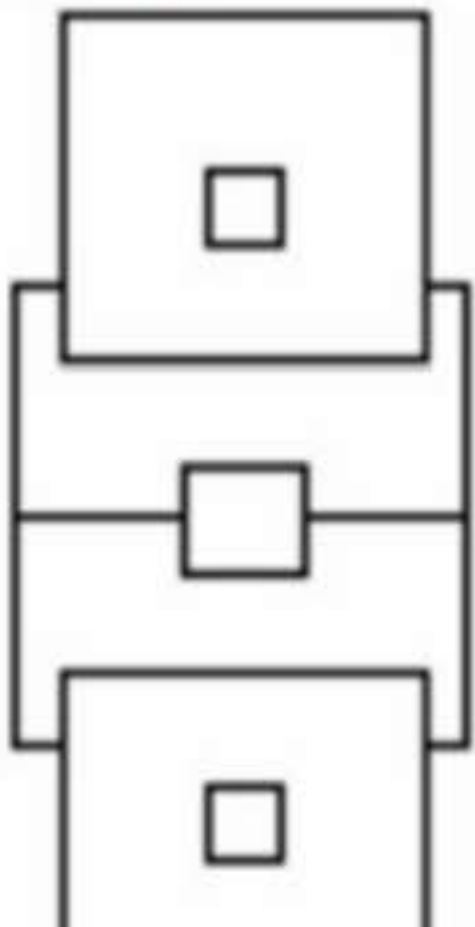
- a. Contingency
- b. Equivalence
- c. Condition
- d. Inference.

- Chosen Option : c
- Correct Answer: a

Q.45 The figure shows a 3 dimensional view of an object. Identify the correct 2 dimensional top view from among the answers based on the direction of the arrow.

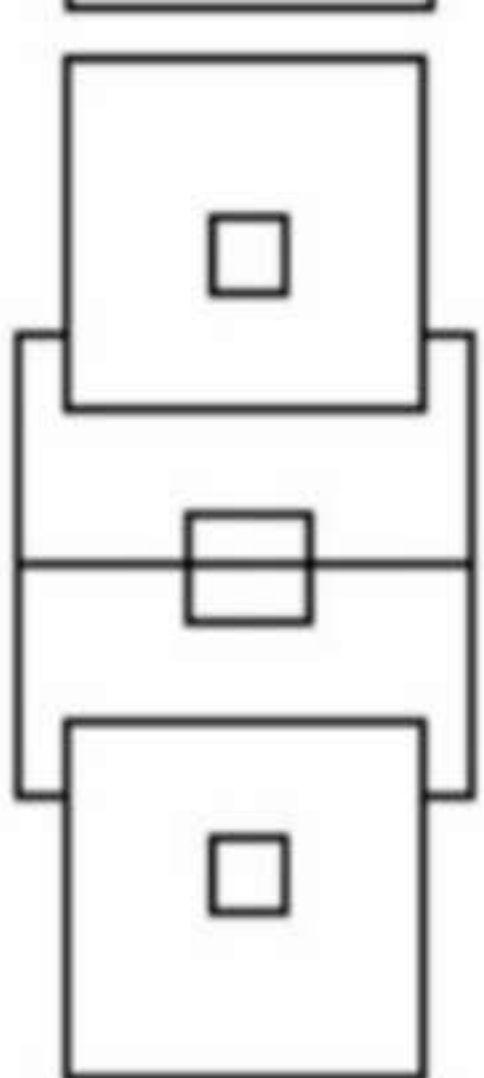


Options :

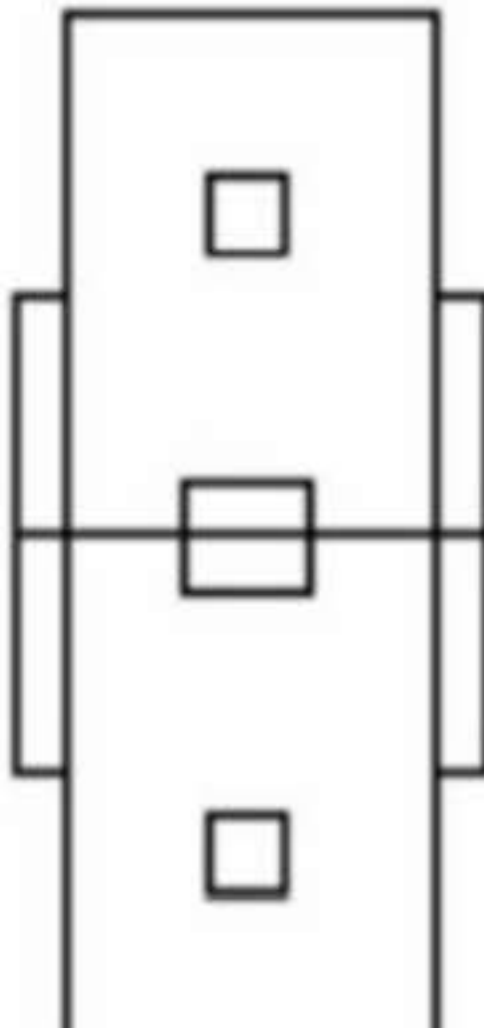


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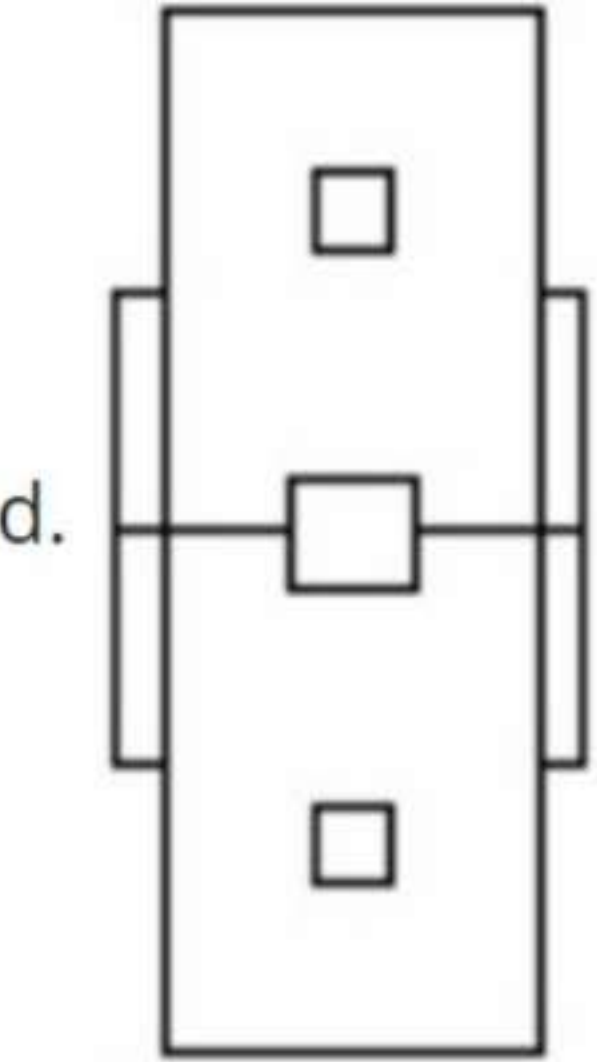
b.



c.



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- Chosen Option : d
- Correct Answer: a

Q.46 Identify the building in the picture below.



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Options :

- a. Empire State Building
- b. Chrysler Building
- c. Burj Khalifa
- d. Sears Tower

- Chosen Option : --
- Correct Answer: b

Q.47 What is the inverse of the conditional statement "A positive integer is a composite only if it has divisors other than 1 & itself"

Options :

- a. If a positive integer has no divisors other than 1 and itself, then it's not composite.
- b. If a positive integer is not composite, then it has no divisors other than 1 and itself.
- c. A positive integer is a composite if it has divisors other than 1 and itself.
- d. None of the above.

- Chosen Option : --
- Correct Answer: c

Q.48 Identify the suitable object from the given options which relates to plan.



Options :

a.

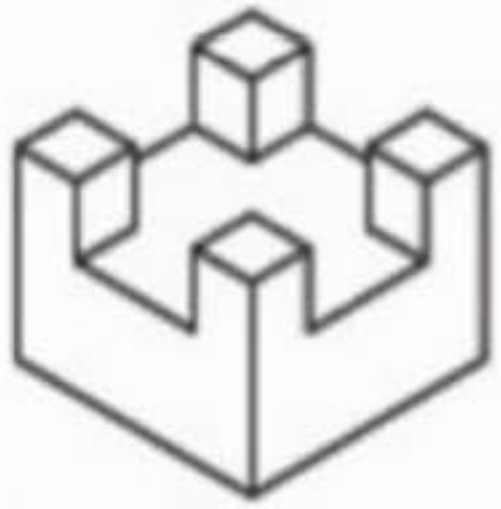


b.



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d.



- Chosen Option : b
- Correct Answer: d

Q.49 Who designed Guggenheim Museum, Bilbao?

Options :

- a. Frank Lloyd Wright
- b. Frank Gehry.
- c. Luis Barragan
- d. Jorn Utzon

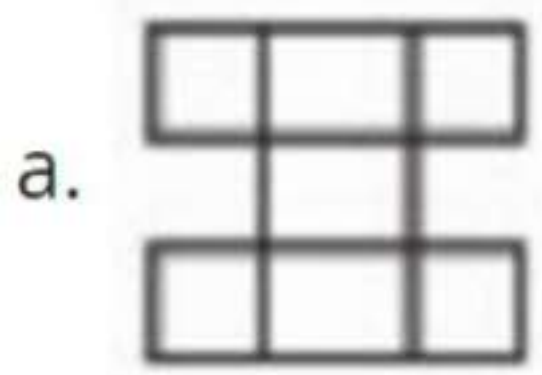
- Chosen Option : --
- Correct Answer: b

Q.50 How does the object appear when seen from the direction of the arrow





Options :



- Chosen Option : a
- Correct Answer: d

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