National Testing Agency

Question Paper Name :	JEE Main 2023 Paper 2B (B.Planning) Apr 12 Shift 2
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Paper 2B (B.Planning)

Group Id :	36669478

Mathematics Section A

Section Number :	1
Number of Questions :	20
Number of Questions to be attempted :	20
Section Marks :	80

Question Number : 1 Question Id : 3666947594 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If $f(x)=\frac{x^3}{x-1}+\frac{x^3}{x+1}$ and $g(x)=\sqrt{x}$, then $fog:[0,2]-\{1\}\to\mathbb{R}$ is :

Options :

36669424041. one-one but not onto

36669424042. one-one and onto

36669424043. onto but not one-one

36669424044. neither one-one nor onto

Question Number : 2 Question Id : 3666947595 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The sum of squares of the values of $\alpha\in\mathbb{R}$ such that the argument of $\frac{\alpha+i}{\alpha-i}$ is 60°, $i=\sqrt{-1}$, is :

Options :

36669424045. 3

36669424046. $\frac{10}{3}$

36669424047. $\frac{11}{3}$

36669424048. 4

Question Number : 3 Question Id : 3666947596 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

For the system of equations

$x + \lambda y - z = 1$

$x + 2y + \lambda z = 2$

$x + 2y + z = 2,$

which one of the following is **NOT** correct?

Options :

36669424049. it has unique solution if λ is not a root of the equation $t^2 - 3t + 2 = 0$

36669424050. it has unique solution if λ is not a root of the equation $t^2 - t - 2 = 0$

36669424051. it has infinitely many solutions if $\lambda = 1$

36669424052. it has no solution if $\lambda = 2$

Question Number : 4 Question Id : 3666947597 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If $a_n = (2n^2 - n + 2)\,(n!)$ then $\sum_{n=1}^{20} a_n$ is equal to :

Options :

36669424053. $37\,(20!) - 1$

36669424054. $37\,(20!) + 1$

36669424055. $39\,(21!) + 1$

36669424056. $39\,(21!) - 1$

Question Number : 5 Question Id : 3666947598 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

$$\lim_{x \to 0^+} \frac{1}{\sqrt{x}} \left(\frac{1}{\sin x} - \frac{1}{x} \right)$$

Options :

36669424057. is equal to 0

36669424058. is equal to $\frac{1}{5}$

36669424059. is equal to 1

36669424060. does not exist

Question Number : 6 Question Id : 3666947599 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $x = x(t)$ be the solution curve of the differential equation $\frac{dx}{dt} = -kx$, and $x(0)=100$, $x\left(\frac{1}{2}\right) = 80$. If $x(t_\alpha)=5$, then t_α is equal to :

Options :

36669424061. $\frac{\log_e 5 + \log_e 4}{2(\log_e 5 - \log_e 4)}$

36669424062. $\frac{\log_e 5 + \log_e 4}{\log_e 5 - \log_e 4}$

36669424063. $\frac{\log_e 5 - \log_e 4}{2(\log_e 5 + \log_e 4)}$

36669424064. $\frac{\log_e 5 - \log_e 4}{\log_e 5 + \log_e 4}$

Question Number : 7 Question Id : 3666947600 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The slope of the tangent to the curve $y = y(x) = \int_{\sin^{-1}(x)}^{\cos^{-1}(x)} \sqrt{1+4\sin^2 t}\, dt;\ 0 \le x \le 1$ at the point $\left(\frac{1}{\sqrt{2}}, 0\right)$ on the curve is :

Options :

36669424065. $-2\sqrt{6}$

36669424066. $2\sqrt{6}$

36669424067. $-4\sqrt{3}$

36669424068. $4\sqrt{3}$

Question Number : 8 Question Id : 3666947601 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $\alpha,\beta,\gamma\left(0 < \alpha, \beta, \gamma < \frac{\pi}{2}\right)$ be the angles between non-zero vectors $\vec{a}$ and $\vec{b}$, $\vec{b}$ and $\vec{c}$, $\vec{c}$ and $\vec{a}$ respectively. If θ is the angle that the vector $\vec{a}$ makes with the plane containing $\vec{b}$ and $\vec{c}$, then

Options :

36669424069. $\cos^2\theta = \operatorname{cosec}^2\beta\,(\cos^2\alpha + \cos^2\gamma - 2\cos\alpha\cos\beta\cos\gamma)$

36669424070. $\cos^2\theta = \sec^2\beta\,(\cos^2\alpha + \cos^2\gamma + 2\cos\alpha\cos\beta\cos\gamma)$

36669424071. $\sin^2\theta = \operatorname{cosec}^2\beta\,(\cos^2\alpha + \cos^2\gamma - 2\cos\alpha\cos\beta\cos\gamma)$

36669424072. $\sin^2\theta = \sec^2\beta\,(\cos^2\alpha + \cos^2\gamma + 2\cos\alpha\cos\beta\cos\gamma)$

Question Number : 9 Question Id : 3666947602 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The domain of the function

$f(x) = \sin^{-1}(\log_2((x-1)(x-2)))$ is :

Options :

36669424073. $[0, 3]$

36669424074. $\left[0, \frac{3-\sqrt{3}}{2}\right] \cup \left[\frac{3+\sqrt{3}}{2}, 3\right]$

36669424075. $\left(\frac{3-\sqrt{3}}{2}, 1\right) \cup \left(2, \frac{3+\sqrt{3}}{2}\right)$

36669424076. $\left[0, \frac{3-\sqrt{6}}{2}\right] \cup \left[\frac{3+\sqrt{6}}{2}, 3\right]$

Question Number : 10 Question Id : 3666947603 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let α and β be the roots of the equation $2x^2 - 5x - 1 = 0$. For $n \in N$, let $P_n = \alpha^n + \beta^n$.

Then $\frac{2P_{11}(2P_{10} - 5P_9)}{P_8(5P_{10} + P_9)}$ is equal to :

Options :

36669424077. $-\frac{1}{2}$

36669424078. $\frac{1}{2}$

36669424079. -1

36669424080. 1

Question Number : 11 Question Id : 3666947604 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the image of the point (1, 1, 2) in the plane $2x - y + z + 3 = 0$ is the point P, then the distance of P from origin is

Options :

36669424081. $2\sqrt{3}$

36669424082. $3\sqrt{2}$

36669424083. 4

36669424084. 6

Question Number : 12 Question Id : 3666947605 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

For three non-coplanar vectors $\vec{a},\vec{b},\vec{c}$, if $\left(\vec{b}+\vec{c}\right)\cdot\left\{\left(\vec{c}+\vec{a}\right)\times\left(\vec{a}+\vec{b}\right)\right\}=\alpha\left[\vec{a}\ \vec{b}\ \vec{c}\right]$ and $\left(\vec{a}+\vec{b}\right)\cdot\left\{\left(\vec{b}+\vec{c}\right)\times\left(\vec{a}+\vec{b}+\vec{c}\right)\right\}=\beta\left[\vec{a}\ \vec{b}\ \vec{c}\right]$, then $\alpha+\beta$ is equal to :

Options :

36669424085. -3

36669424086. -1

36669424087. 1

36669424088. 3

Question Number : 13 Question Id : 3666947606 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If $I(x)=\int\frac{dx}{1-2\sin^2 x\cos^2 x}$, then $\tan\left(\sqrt{2}\left(I\left(\frac{\pi}{8}\right)-I(0)\right)\right)$ is equal to :

Options :

36669424089. $\frac{1}{\sqrt{2}}$

36669424090. 1

36669424091. $\sqrt{2}$

36669424092. 2

Question Number : 14 Question Id : 3666947607 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let X have a binomial distribution B (6, p). If the sum of the mean and the variance of X is $\frac{21}{8}$, then $\frac{P(2\le X<4)}{P(4<X<6)}$ is equal to :

Options :

36669424093. 65

36669424094. 195

36669424095. $\frac{195}{2}$

36669424096. $\frac{225}{2}$

Question Number : 15 Question Id : 3666947608 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the statement

$((p * (\sim q)) \wedge (p \vee q)) \Leftrightarrow p$

is a tautology, then $*$ is :

Options :

36669424097. $\wedge$

36669424098. $\vee$

36669424099. $\Rightarrow$

36669424100. $\Leftrightarrow$

Question Number : 16 Question Id : 3666947609 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the circles $x^2 + y^2 - 2x - 4y + 4 = 0$ and $x^2 + y^2 - 6x - 10y + 20 + 2\sqrt{13} = 0$ touch each other at the point (a, b), then $(3a - 2b)^2$ is equal to :

Options :

36669424101. 1

36669424102. 4

36669424103. 9

36669424104. 13

Question Number : 17 Question Id : 3666947610 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the angle between the line $l : \frac{x-1}{2} = \frac{y+1}{1} = \frac{z-2}{2}$ and the plane P : $\lambda x + 4y - 7 = 0, \lambda \neq 0$, is $\operatorname{cosec}^{-1}\left(\frac{3}{2}\right)$, then the sum of co-ordinates of the point where line l crosses the plane P is :

Options :

36669424105. -33

36669424106. -2

36669424107. 3

36669424108. 6

Question Number : 18 Question Id : 3666947611 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let three distinct normal be drawn to the parabola $y^2 + 4y - 6x - 8 = 0$ from a point (a, b) on the axis of the parabola. Then :

Options :

36669424109. $a \in (1, \infty)$ and $b = -2$

36669424110. $a \in (0, \infty)$ and $b = -2$

36669424111. $a \in (1, \infty)$ and $b = 2$

36669424112. $a \in (2, \infty)$ and $b = 2$

Question Number : 19 Question Id : 3666947612 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given ${}^{n}C_{r} = \dfrac{n!}{r!(n-r)!}$, $0 \leq$ r $\leq$ n and n is a non-negative integer. Then a possible value of k for which the equality

$${}^{50}C_{k-1} + \sum_{r=1}^{50} {}^{100-r}C_{k-2} = {}^{100}C_{49}$$ holds, is

Options :

36669424113. 40

36669424114. 49

36669424115. 50

36669424116. 25

Question Number : 20 Question Id : 3666947613 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If an unbiased die, marked with –3, –2, –1, 0, 1, 2 on its faces, is thrown four times, then the probability of getting –1 as the sum of outputs is :

Options :

36669424117. $\dfrac{7}{81}$

36669424118. $\dfrac{35}{324}$

36669424119. $\dfrac{8}{81}$

36669424120. $\dfrac{26}{243}$

Mathematics Section B

Section Number :	2
Number of Questions :	10
Number of Questions to be attempted :	5
Section Marks :	20

Question Number : 21 Question Id : 3666947614 Question Type : SA Correct Marks : 4 Wrong Marks : 1

$(\sin 5^\circ \sin 55^\circ \sin 65^0 \sin 75^\circ)^{-1}$ is equal to _____.

Question Number : 22 Question Id : 3666947615 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If the shortest distance between the lines

$3x + 2y - 4z - 5 = 0 = 5x - 7y - 17z + 2$ and $\frac{x-2}{3} = \frac{y-1}{-5} = \frac{z+1}{2}$ is $\frac{10}{\sqrt{k}}$, then k is equal to _____.

Question Number : 23 Question Id : 3666947616 Question Type : SA Correct Marks : 4 Wrong Marks : 1

For $p \in \mathbb{N}$, if the angle between pair of tangents drawn to the ellipse $3x^2 + 2y^2 = 5$ from the point $(1, p)$ is $\tan^{-1}\left(\frac{12}{\sqrt{5}}\right)$, then the distance of the vertex of the parabola $y = x^2 - px + p + 1$ from the point $(-7, 8)$ is equal to _____.

Question Number : 24 Question Id : 3666947617 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let P be a polygon with n vertices such that the line segment joining any two points of P remains entirely in P. If the number of diagonals of P is $n+25$, then n is equal to _____.

Question Number : 25 Question Id : 3666947618 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let $f(x)$ be a polynomial of degree 5 such that $\lim\limits_{x\to 0} \frac{f(x)}{x^2} = 1$, $f(-1) = -1$, $f(x) - 14x$ has an extrema at $x = 1$ and $f(x) - 10x$ has an extrema at $x = -1$. Then $f(2)$ is equal to _____.

Question Number : 26 Question Id : 3666947619 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The number of 7 digits integers formed by using the digits 2, 3, 4, 5 only and having the sum of digits equal to 18 is _____.

Question Number : 27 Question Id : 3666947620 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The remainder when $(556)^{40}$ is divided by 7 is _____.

Question Number : 28 Question Id : 3666947621 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let [t] denote the greatest integer less than or equal to t. Then the value of $10 - 10\int_{-2}^{2} [x + x^3]\,dx$ is _____.

Question Number : 29 Question Id : 3666947622 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let $A = \frac{1}{\sqrt{2}}\begin{bmatrix} 1 & 1 \\ -1 & 1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$. If $k, l \in \mathbb{N}$ be such that $A^k B^l = I$, then the minimum value of $k + l$ is _____.

Question Number : 30 Question Id : 3666947623 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let $A_1 = [1]$, $A_2 = \begin{bmatrix} 2 & 3 \\ 4 & 5 \end{bmatrix}$, $A_3 = \begin{bmatrix} 6 & 7 & 8 \\ 9 & 10 & 11 \\ 12 & 13 & 14 \end{bmatrix}$,.... Then the sum of the diagonal elements of A_{20} is _____.

Aptitude Test

Section Number : 3
Number of Questions : 50
Number of Questions to be attempted : 50
Section Marks : 200

Question Number : 31 Question Id : 3666947624 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following is not a sustainable development goal targeted to be achieved by 2030?

Options :

36669424131. gender equality

36669424132. zero hunger

36669424133. good health & well being

36669424134. space Research

Question Number : 32 Question Id : 3666947625 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

KANDARIYA MAHADEV TEMPLE is situated in which state of India?

Options :

36669424135. Madhya Pradesh

36669424136. Maharashtra

36669424137. Rajasthan

36669424138. Karnataka

Question Number : 33 Question Id : 3666947626 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Vertical elements in a building are:-

Options :

36669424139. Column, Lintel, Wall

36669424140. Lintel, Beam, Arch

36669424141. Column, Pier, Post

36669424142. Floor, Column, Arch

Question Number : 34 Question Id : 3666947627 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Cavity Walls are used for

Options :

36669424143. Waterproofing

36669424144. Heat Insulation

36669424145. Aesthetics

36669424146. Cost saving

Question Number : 35 Question Id : 3666947628 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Lintel is related to:

Options :

36669424147. Window

36669424148. Roof

36669424149. Foundation

36669424150. Pipe

Question Number : 36 Question Id : 3666947629 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Choose the correct option among the following by looking at the image given above:

Options :

36669424151. Lodhi Garden

36669424152. Jantar Mantar

36669424153. Rajghat

36669424154. Bahai Temple

Question Number : 37 Question Id : 3666947630 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

ARCHITECT ACT 1972 was enforced in which month

Options :

36669424155. 31st Dec

36669424156. 31st May

36669424157. 31st July

36669424158. 31st March

Question Number : 38 Question Id : 3666947631 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The dome of Rashtrapati Bhawan is influenced by which of the following:

Options :

36669424159. Gurudwara

36669424160. Mosque

36669424161. Stupa

36669424162. Temple

Question Number : 39 Question Id : 3666947632 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Dominion tower is designed by

Options :

36669424163. Bjarke Ingels

36669424164. Zaha Hadid

36669424165. Frei otto

36669424166. F.L. Wright

Question Number : 40 Question Id : 3666947633 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The largest river island of the world is present in which state of India?

Options :

36669424167. Maharastra

36669424168. Assam

36669424169. Uttar Pradesh

36669424170. West Bengal

Question Number : 41 Question Id : 3666947634 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who prepared the first layout of the town of Jamshedpur?

Options :

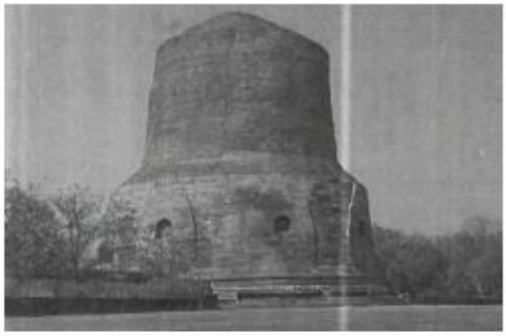
36669424171. Charles Correa

36669424172. Otto Konigsberger

36669424173. Le Corbuseir

36669424174. Messrs Julin Kennedy Sahhin

Question Number : 42 Question Id : 3666947635 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Identify the historical monument which is given in the image.

Options :

36669424175. Sanchi Stupa

36669424176. Victory Tower

36669424177. Sarnath Stupa

36669424178. Nalanda

Question Number : 43 Question Id : 3666947636 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who was known as "Father of modern concrete"?

Options :

36669424179. John Paul

36669424180. John Nash

36669424181. John Smeaton

36669424182. Joseph Stein

Question Number : 44 Question Id : 3666947637 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is the architect of TWA Airport, New York?

Options :

36669424183. Eero Saarinen

36669424184. Mies Vander Rohe

36669424185. Joseph Allen Stein

36669424186. Alvar Aalto

Question Number : 45 Question Id : 3666947638 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Starting from a point, Maria walked 12 meters towards North, she turned right and walked 10 meters. She again turned right and walked 12 meters, then she turned left and walked 5 meters. How far is she now and in which direction from the starting point? Consider the starting point is in south direction.

Options :

36669424187. 27 meters towards East

36669424188. 5 meters towards East

36669424189. 10 meters towards West

36669424190. 15 meters towards East

Question Number : 46 Question Id : 3666947639 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who among the following is not Pritzker prize winner?

Options :

36669424191. Wang Shu

36669424192. B.V. Doshi

36669424193. Arata Isozaki

36669424194. Denise Scott Brown

Question Number : 47 Question Id : 3666947640 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following is not Antonio Gaudi's project?

Options :

36669424195. Casa Mila

36669424196. Sagrada Familia

36669424197. Casa Batllo

36669424198. Casa Milano

Question Number : 48 Question Id : 3666947641 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which one of the following is most earthquake resistant structure?

Options :

36669424199. RCC framed structure

36669424200. Load bearing structure

36669424201. Mud walls structure

36669424202. Random stone masonary structure

Question Number : 49 Question Id : 3666947642 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

"CHALK" belongs to which category?

Options :

36669424203. Rock

36669424204. Mineral

36669424205. Wood

36669424206. Polymer

Question Number : 50 Question Id : 3666947643 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What are the three parts of colour theory?

Options :

36669424207. hyper, value and chrome

36669424208. honey, violet and chroma

36669424209. hue, value and chroma

36669424210. hue, chrome and violet

Question Number : 51 Question Id : 3666947644 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the three primary colours?

Options :

36669424211. Red, Blue and Green

36669424212. Red, Yellow and Blue

36669424213. Black, White and Yellow

36669424214. Blue, White and Yellow

Question Number : 52 Question Id : 3666947645 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II:

List I	List II
A. Kamakhya Temple	I. Madhya Pradesh
B. Padmanabha Temple	II. Rajasthan
C. Kandariya Mahadev	III. Assam
D. Karni Mata Temple	IV. Kerala

Choose the ***correct*** answer from the options given below:

Options :

36669424215. A-II, B-I, C-III, D-IV

36669424216. A-IV, B-III, C-II, D-I

36669424217. A-III, B-IV, C-I, D-II

36669424218. A-I, B-II, C-IV, D-III

Question Number : 53 Question Id : 3666947646 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A square has an area of 100 sq.mt. How much will be its area on a scale of 1 : 20?

Options :

36669424219. 5 sq.mt.

36669424220. 50 sq.mt.

36669424221. 0.25 sq.mt.

36669424222. 25 sq.mt.

Question Number : 54 Question Id : 3666947647 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I: Shakti Sthal is a memorial in Raj Ghat marking the cremation site of Indira Gandhi.

Statement II: A.P. Kanvinde in the landscape designer known for designing Shakti Sthal.

In the light of the above statements, choose the **correct** answer from the options given below

Options :

36669424223. Both Statement I and Statement II are true

36669424224. Both Statement I and Statement II are false

36669424225. Statement I is true but Statement II is false

36669424226. Statement I is false but Statement II is true

Question Number : 55 Question Id : 3666947648 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What is the full form of 'UDAY'?

Options :

36669424227. Ujjwala Discom Assitance Yojana

36669424228. Unnati Development Ayojan Yojana

36669424229. Ujwal Distribution Assurance Yojana

36669424230. Ujwal Discom Assurance Yojana

Question Number : 56 Question Id : 3666947649 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What is the acronym for 'AYUSH'?

Options :

36669424231. Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy

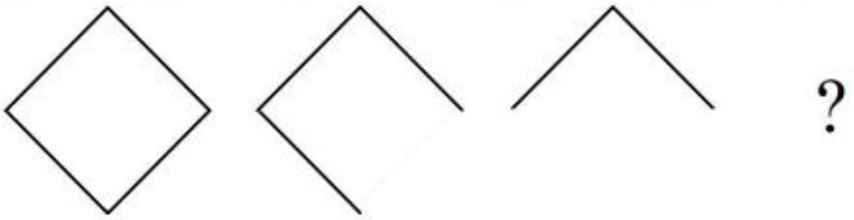
36669424232. Ayurveda, Yogic and Unani Siddha and Homeopathy

36669424233. Acroveda, Yoga, Unani, Siddha and Homeopathy

36669424234. Ayurveda, Yoga, Naturopathy, Unani Surgery and Homeopathy

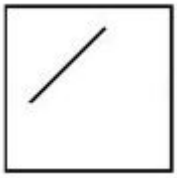
Question Number : 57 Question Id : 3666947650 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

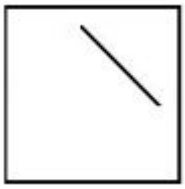
Select the correct option from answer figure which will be best suitable to continue the same pattern as established by the problem figure.



Options :

36669424235. 

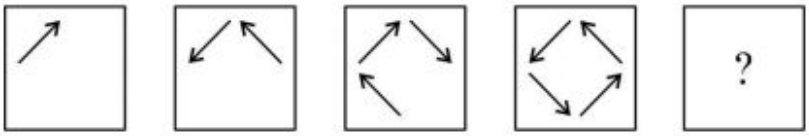
36669424236. 

36669424237. 

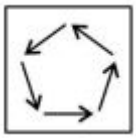
36669424238. 

Question Number : 58 Question Id : 3666947651 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Choose the correct option from the answer figures which completes the question series.

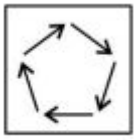


Options :

36669424239. 

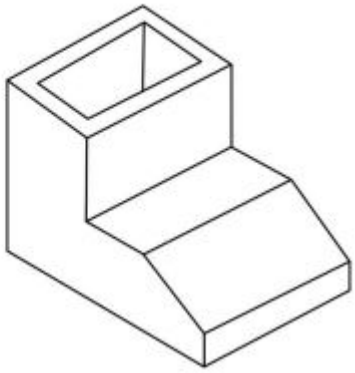
36669424240. 

36669424241. 

36669424242. 

Question Number : 59 Question Id : 3666947652 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the number of surfaces in the given 3D object.



Options :

36669424243. 12

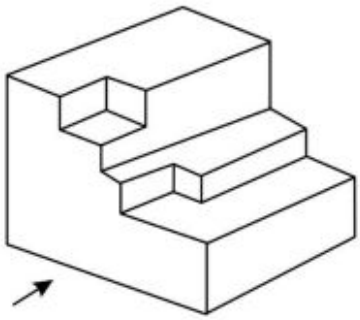
36669424244. 13

36669424245. 10

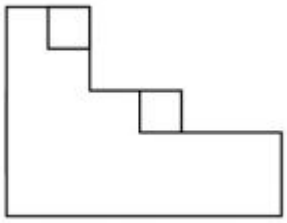
36669424246. 9

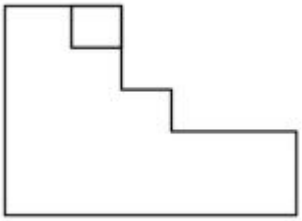
Question Number : 60 Question Id : 3666947653 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

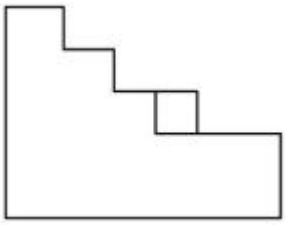
The question figure shows the 3D view of an object. Identify the view of the object looking in the direction of the arrow.

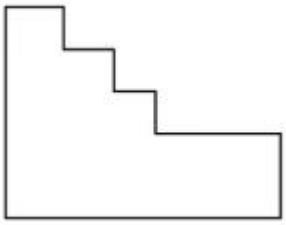


Options :

36669424247. 

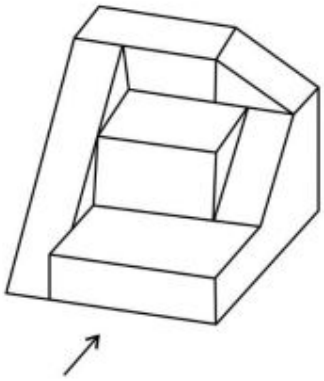
36669424248. 

36669424249. 

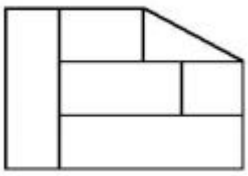
36669424250. 

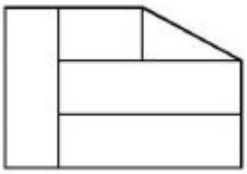
Question Number : 61 Question Id : 3666947654 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

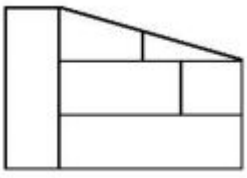
The 3D figure shows the view of an object. Identify the correct view looking in the direction of arrow, amongst the answer figures.

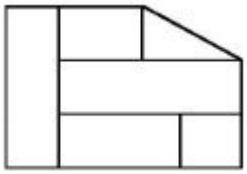


Options :

36669424251. 

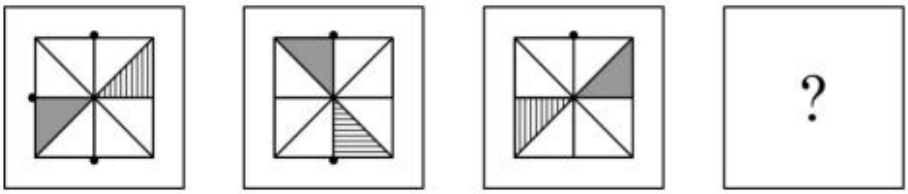
36669424252. 

36669424253. 

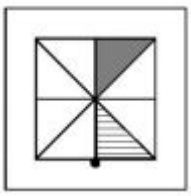
36669424254. 

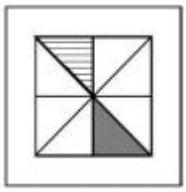
Question Number : 62 Question Id : 3666947655 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

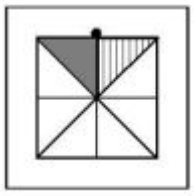
Choose the correct option from the answer figures which completes the sequence.

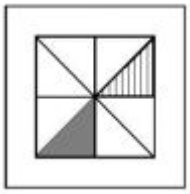


Options :

36669424255. 

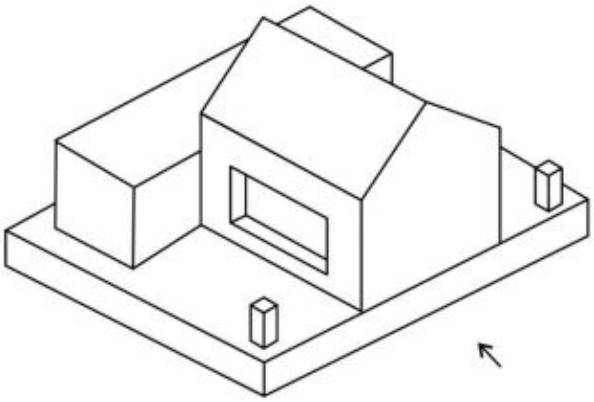
36669424256. 

36669424257. 

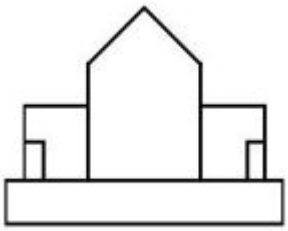
36669424258. 

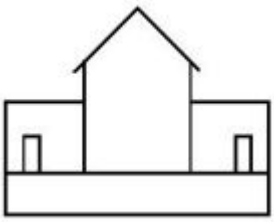
Question Number : 63 Question Id : 3666947656 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

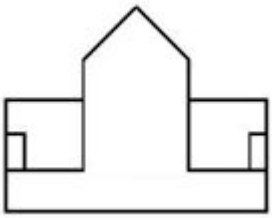
The question figure shows the 3D view of an object, identify the correct view looking in the direction of the arrow?

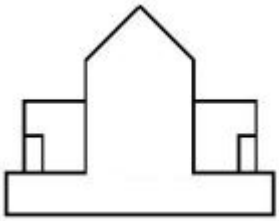


Options :

36669424259. 

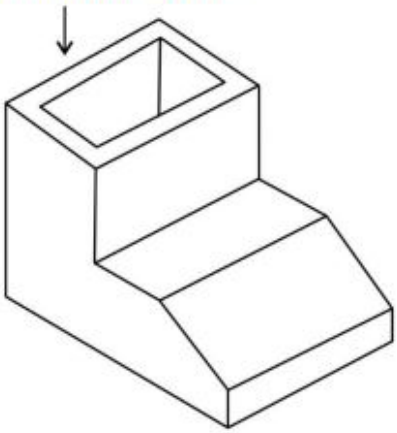
36669424260. 

36669424261. 

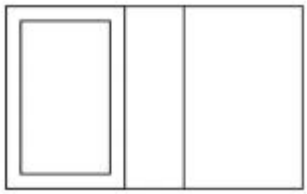
36669424262. 

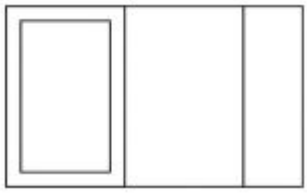
Question Number : 64 Question Id : 3666947657 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

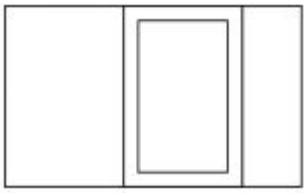
The question figure shows the 3D view of an object. Identify the top view of the object in the direction of the arrow.

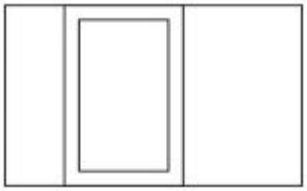


Options :

36669424263. 

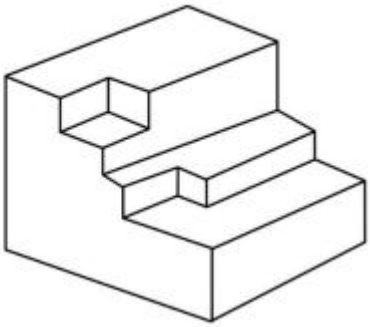
36669424264. 

36669424265. 

36669424266. 

Question Number : 65 Question Id : 3666947658 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the total number of surfaces in the given 3D object.



Options :

36669424267. 12

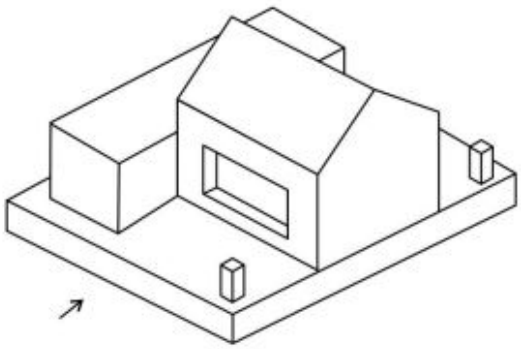
36669424268. 13

36669424269. 15

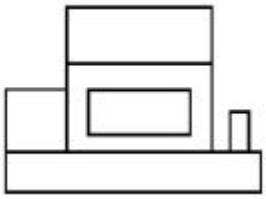
36669424270. 16

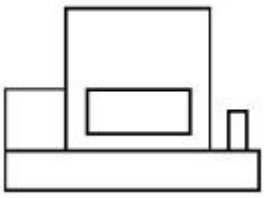
Question Number : 66 Question Id : 3666947659 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

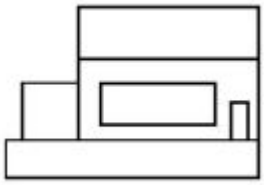
The question figure shows the 3D view of an object. Identify the correct view looking in the direction of the arrow.

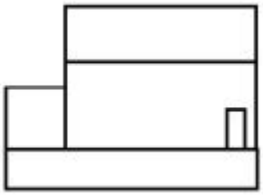


Options :

36669424271. 

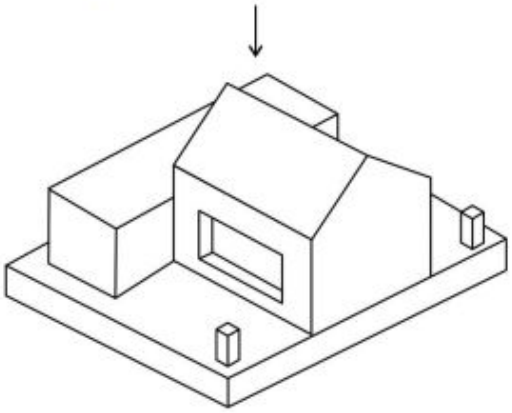
36669424272. 

36669424273. 

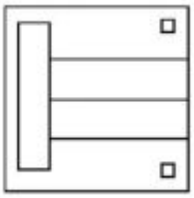
36669424274. 

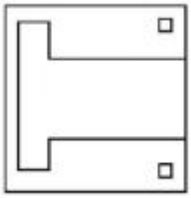
Question Number : 67 Question Id : 3666947660 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

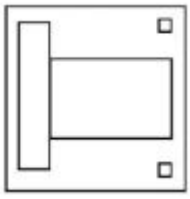
In the question figure it is a 3D view of an object. Identify the correct top view among the given options.

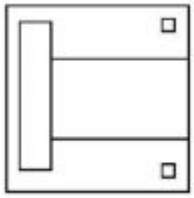


Options :

36669424275. 

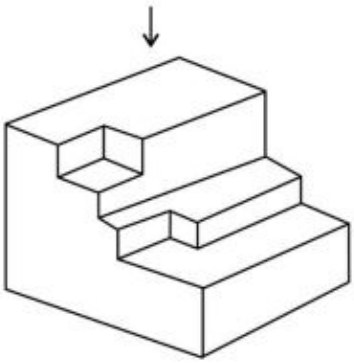
36669424276. 

36669424277. 

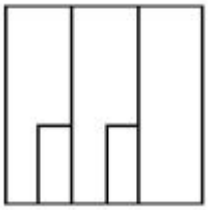
36669424278. 

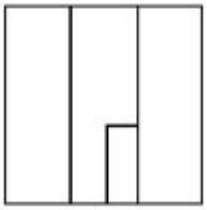
Question Number : 68 Question Id : 3666947661 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

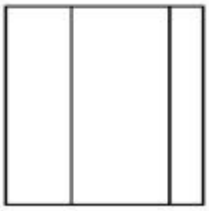
The question figure shows the 3D view of an object. Identify the most appropriate top view of the object from the given direction of the arrow.

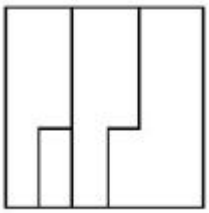


Options :

36669424279. 

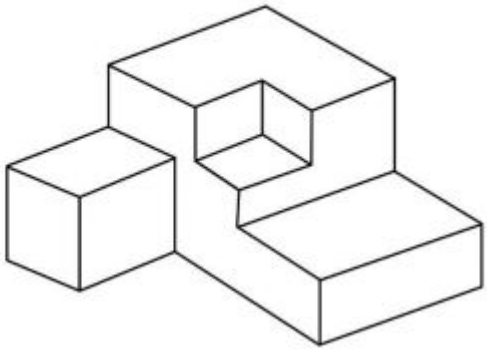
36669424280. 

36669424281. 

36669424282. 

Question Number : 69 Question Id : 3666947662 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the total number of surfaces in the given object.



Options :

36669424283. 13

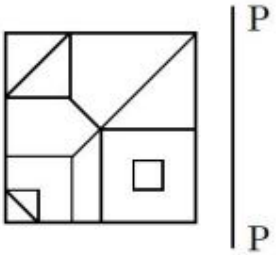
36669424284. 14

36669424285. 11

36669424286. 10

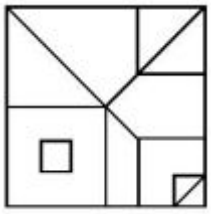
Question Number : 70 Question Id : 3666947663 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the mirror image of the question figure, amongst the answer figures with respect to P-P.

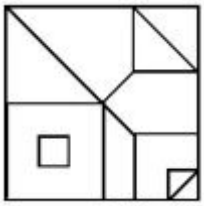


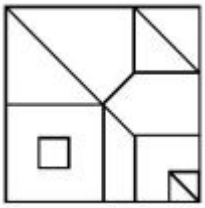
Options :

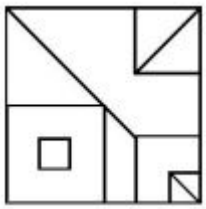
36669424287.



36669424288.



36669424289. 

36669424290. 

Question Number : 71 Question Id : 3666947664 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the correct mirror image of the question image with respect to P-P.



Options :

36669424291. 

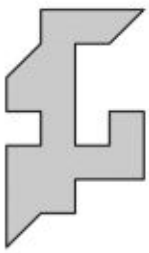
36669424292. 

36669424293. 

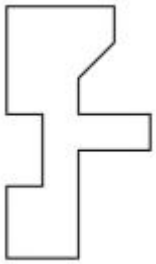
36669424294. 

Question Number : 72 Question Id : 3666947665 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

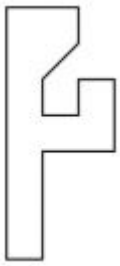
Which of the answer figures fit best to the left side of the given question figure?

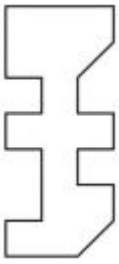


Options :

1. 

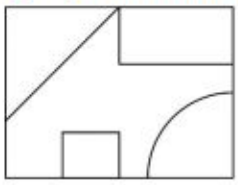
2. 

3. 

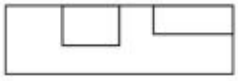
4. 

Question Number : 73 Question Id : 3666947666 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

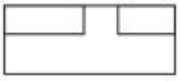
In the question figure, the top, front and right side view is given. Identify the most appropriate 3D view of the object from the answer figures.



Top view

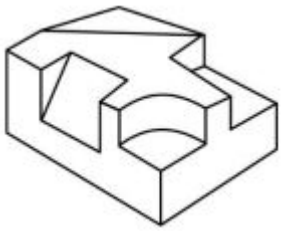


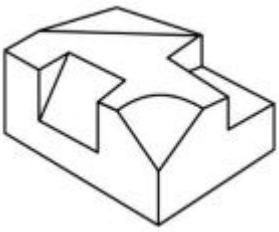
Front view

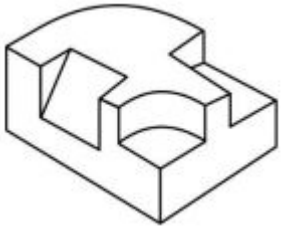


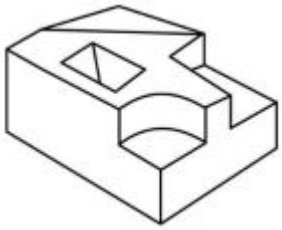
Right side view

Options :

36669424299. 

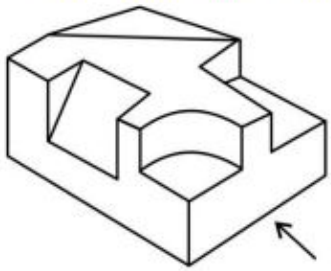
36669424300. 

36669424301. 

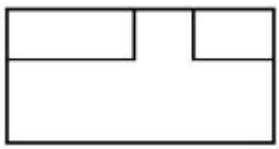
36669424302. 

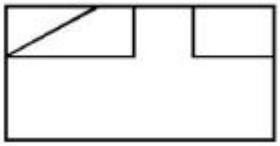
Question Number : 74 Question Id : 3666947667 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

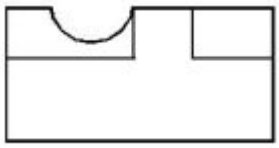
The question figure shows the 3D view of an object. Identify the most appropriate elevation (front view) looking in the direction of arrow.

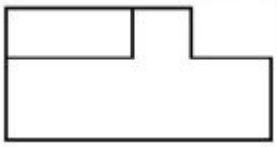


Options :

36669424303. 

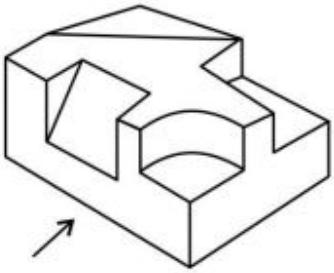
36669424304. 

36669424305. 

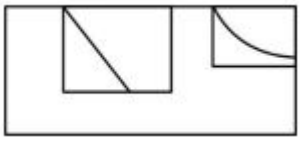
36669424306. 

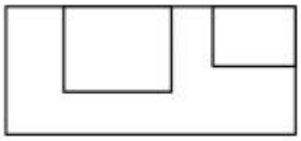
Question Number : 75 Question Id : 3666947668 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

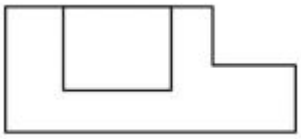
The question figure shows the 3D view of an object. Identify the most appropriate view of the object looking in the direction of the arrow.

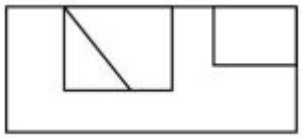


Options :

36669424307. 

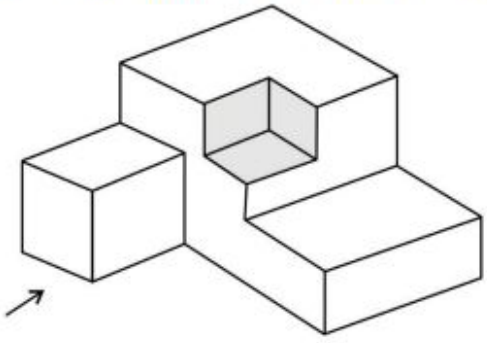
36669424308. 

36669424309. 

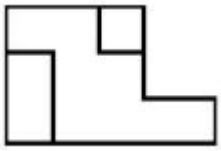
36669424310. 

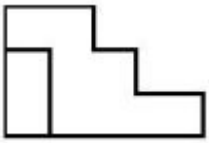
Question Number : 76 Question Id : 3666947669 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

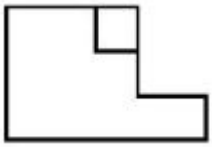
The question figure is the 3D view of an object. Identify the most appropriate front view of the object looking in the direction of the arrow.

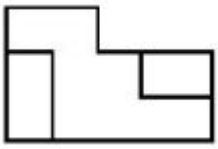


Options :

36669424311. 

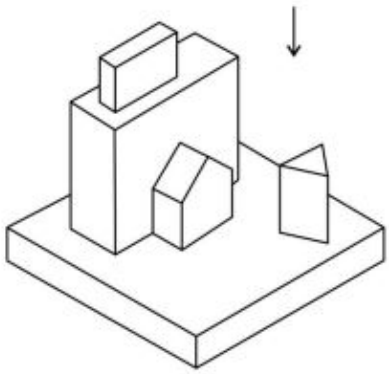
36669424312. 

36669424313. 

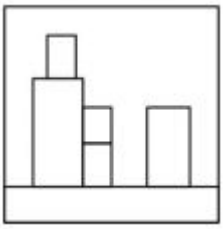
36669424314. 

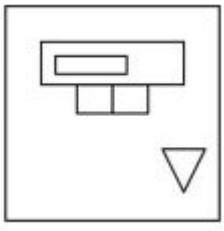
Question Number : 77 Question Id : 3666947670 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

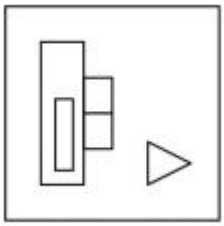
Question figure shows 3D view of an object. Identify the most appropriate top view of the given 3D object looking in the direction of an arrow, from the given answers figures.

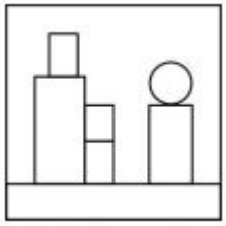


Options :

36669424315. 

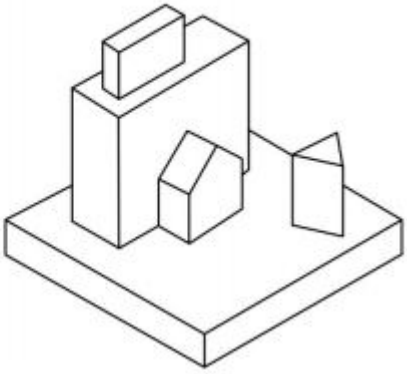
36669424316. 

36669424317. 

36669424318. 

Question Number : 78 Question Id : 3666947671 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the number of surfaces in the problem figure.



Options :

36669424319. 24

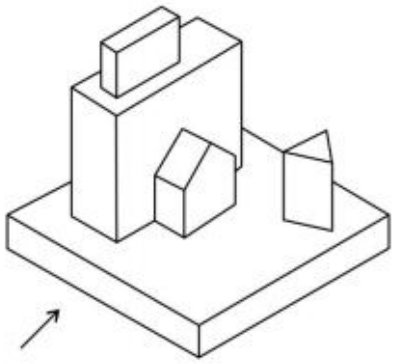
36669424320. 25

36669424321. 23

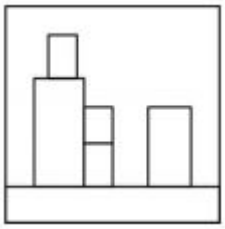
36669424322. 20

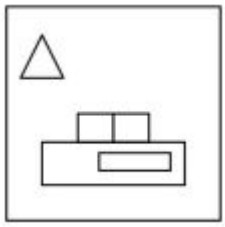
Question Number : 79 Question Id : 3666947672 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

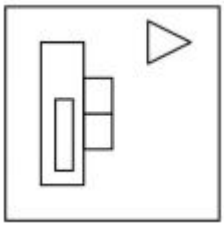
The question figure shows 3D view of an object. Identify the most appropriate elevation of the given 3D object, looking in the direction of an arrow, from the given answer figures.

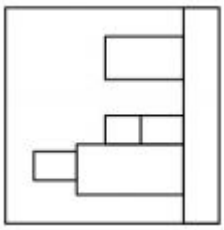


Options :

36669424323. 

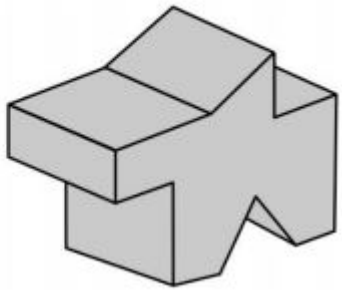
36669424324. 

36669424325. 

36669424326. 

Question Number : 80 Question Id : 3666947673 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Find out the total number of surfaces of the 3D object.



Options :

36669424327. 12

36669424328. 13

36669424329. 14

36669424330. 15

Planning

Section Number :	4
Number of Questions :	25
Number of Questions to be attempted :	25
Section Marks :	100

Question Number : 81 Question Id : 3666947674 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

GIS as a tool used for spatial connectedness for

Options :

36669424331. Topology

36669424332. Topography

36669424333. Ecology

36669424334. Climatology

Question Number : 82 Question Id : 3666947675 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Smart city scheme has been launched in which year?

Options :

36669424335. 2012

36669424336. 2016

36669424337. 2015

36669424338. 2014

Question Number : 83 Question Id : 3666947676 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

With reference to the area which one among the following is the largest?

Options :

36669424339. Zonal Plan

36669424340. Master Plan

36669424341. Regional Plan

36669424342. Layout Plan

Question Number : 84 Question Id : 3666947677 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I:	Full form of NFDB is "National Fisheries Development Board".
Statement II:	Full form of NFDB is "National Forest Development & Board.

In the light of the above statements, choose the **correct** answer from the options given below

Options :

36669424343. Both Statement I and Statement II are true

36669424344. Both Statement I and Statement II are false

36669424345. Statement I is true but Statement II is false

36669424346. Statement I is false but Statement II is true

Question Number : 85 Question Id : 3666947678 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The Gandhian plan was presented by

Options :

36669424347. Sriman Narayan Agarwal

36669424348. J.L. Nehru

36669424349. M.M. Roy

36669424350. P.V. Narasimha Rao

Question Number : 86 Question Id : 3666947679 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In which 5 year plan, the growth, social justice and equality was focused.

(A) Second Five year plan

(B) Ninth Five year plan

(C) Third Five year plan

(D) Fourth Five year plan

Choose the correct answer from the options given below:

Options :

36669424351. A only

36669424352. B and D

36669424353. B only

36669424354. C only

Question Number : 87 Question Id : 3666947680 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In Urban Land Development, the model of sector theory was proposed by

Options :

36669424355. Charles Corea

36669424356. Ebenezer Howard

36669424357. Le-Corbusier

36669424358. Homer Hoyt

Question Number : 88 Question Id : 3666947681 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who was the first Deputy Chairman of Planning Commission?

Options :

36669424359. Gulzarilal Nanda

36669424360. Sriman Narayan

36669424361. M.M. Roy

36669424362. P.V. Narasimha Rao

Question Number : 89 Question Id : 3666947682 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Grand Innovation Challenge was launched by:-

Options :

36669424363. "NITI" Aayog

36669424364. Finance Commission

36669424365. Planning Commission

36669424366. National Planning Committee

Question Number : 90 Question Id : 3666947683 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is the father of Indian Planning.

Options :

36669424367. Jawaharlal Nehru

36669424368. M.K. Gandhi

36669424369. Sir M. Vishveshshwariah

36669424370. B.R. Ambedkar

Question Number : 91 Question Id : 3666947684 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In master plan, a zone is shown in yellow colour. What is the land use of that zone?

Options :

36669424371. Residential

36669424372. Commercial

36669424373. Industrial

36669424374. Water Bodies

Question Number : 92 Question Id : 3666947685 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In master plan by which color, we show the industrial land use.

Options :

36669424375. Purple

36669424376. Grey

36669424377. Red

36669424378. Green

Question Number : 93 Question Id : 3666947686 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The book "Image of the City" is written by

Options :

36669424379. Christopher Alexander

36669424380. Kevin Lynch

36669424381. Oxford Newman

36669424382. Gorden Cullen

Question Number : 94 Question Id : 3666947687 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II.

List I	List II
(A) Carpet Area	(I) Built up area plus proportionate area of common areas
(B) Super built up Area	(II) Usable Area
(C) Set Back Area	(III) Entire carpet area plus external wall.
(D) Plinth Area	(IV) Minimum open space around the building

Choose the correct answer from the options given below:

Options :

36669424383. (A) – III, (B) – I, (C) – IV, (D) – II

36669424384. (A) – IV, (B) – II, (C) – I, (D) – III

36669424385. (A) – II, (B) – I, (C) – IV, (D) – III

36669424386. (A) – II, (B) – IV, (C) – III, (D) – I

Question Number : 95 Question Id : 3666947688 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II.

List I	List II
(A) Kolkata	(I) Radial
(B) Delhi	(II) Linear
(C) Chandigarh	(III) Organic
(D) Varanasi	(IV) Grid Iron

Choose the correct answer from the options given below:

Options :

36669424387. (A) – II, (B) – I, (C) – III, (D) – IV

36669424388. (A) – I, (B) – III, (C) – II, (D) – IV

36669424389. (A) – II, (B) – I, (C) – IV, (D) – III

36669424390. (A) – III, (B) – IV, (C) – I, (D) – II

Question Number : 96 Question Id : 3666947689 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In which year, HRIDAY Launched?

Options :

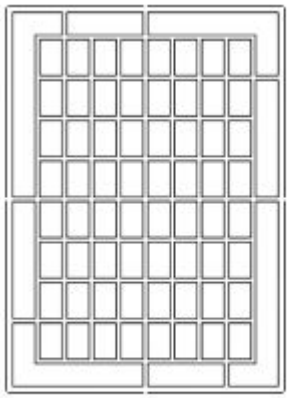
36669424391. 2014

36669424392. 2012

36669424393. 2015

36669424394. 2011

Question Number : 97 Question Id : 3666947690 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Which type of plan is this?

Options :

36669424395. Dandaka

36669424396. Chaturmukha

36669424397. Padmaka

36669424398. Karmukha

Question Number : 98 Question Id : 3666947691 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The roman "FORUM" is also referred as:

Options :

36669424399. River

36669424400. Building

36669424401. Park

36669424402. Market Place

Question Number : 99 Question Id : 3666947692 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If all the directions are changed in the manner that North becomes South and Vice-Versa, then North-West will be

Options :

36669424403. South-East

36669424404. North-East

36669424405. South-West

36669424406. North-West

Question Number : 100 Question Id : 3666947693 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Inspector Shyam started from Police Station on inspection. After travelling straight for a distance of four (4) KM, he turned left for market and travelled straight 600 meters. He now turned left again and travelled straight for another 200 meters, and turned left and travelled straight for 600 meters. How far is Shyam from Police Station?

Options :

36669424407. 3.4 Km

36669424408. 4.8 Km

36669424409. 3.8 Km

36669424410. 4.4 Km

Question Number : 101 Question Id : 3666947694 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The highest body which approves five year plans of India is:

Options :

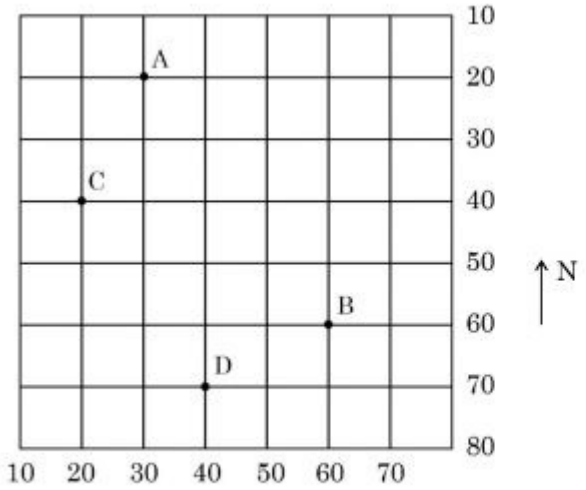
36669424411. Parliament

36669424412. Planning Commission

36669424413. Union Cabinet

36669424414. National Development Council

Question Number : 102 Question Id : 3666947695 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In the given diagram, from A point to C point, how much you have to move

Options :

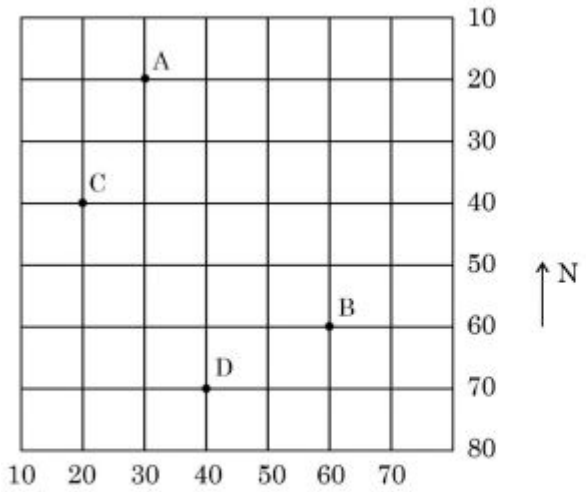
36669424415. 20

36669424416. 30

36669424417. 10

36669424418. 40

Question Number : 103 Question Id : 3666947696 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In the given diagram, from point C to point B, which direction you have to move

Options :

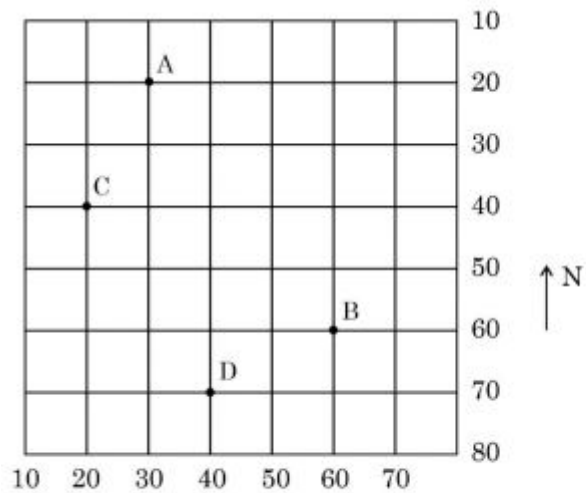
36669424419. East – North

36669424420. North – South

36669424421. South – East

36669424422. West – South

Question Number : 104 Question Id : 3666947697 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



With the reference to the diagram, choose the correct statement.

Options :

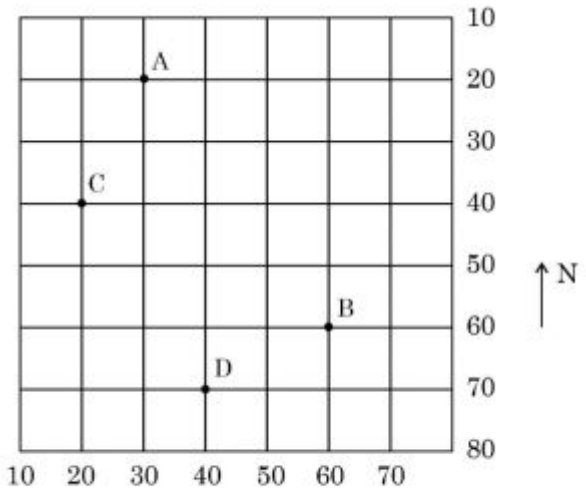
36669424423. The distance from B to D is 20

36669424424. The distance from B to D is 10

36669424425. The distance from B to C is 10

36669424426. The distance from B to D is 30

Question Number : 105 Question Id : 3666947698 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In the given diagram, northern most point is

Options :

36669424427. C only

36669424428. D only

36669424429. B only

36669424430. A only