National Testing Agency

Question Paper Name :	JEE Main 2023 Paper 2B (B.Planning) Jan 28 Single sitting
Subject Name :	Paper 2B (B.Planning)
Creation Date :	2023-01-28 23:48:18
Duration :	180
Total Marks :	400

Paper 2B (B.Planning)

Group Id :	71550528

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 : 7155052464 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let R_1 and R_2 be two relations on $\mathbb{R}^2$ defined as

$(a, b)\ R_1\ (c, d)$ if $ad - bc \geq 0$

$(a, b)\ R_2\ (c, d)$ if $a + d \geq b + c$. Then :

Options :

7155057691. R_1 is transitive but R_2 is not transitive

7155057692. R_2 is transitive but R_1 is not transitive

7155057693. Both R_1 and R_2 are transitive

7155057694. Neither R_1 nor R_2 is transitive

Question Number : 2 Question Id : 7155052465 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let α and β be the roots of $x^2 - 3x + 9 = 0$. Then $\left(\frac{\beta^{30}}{(9\alpha)^{10}} + \frac{\alpha^{30}}{(9\beta)^{10}}\right)^2$ is equal to

Options :

7155057695. 1

7155057696. $\frac{1}{9}$

7155057697. 3

7155057698. 9

Question Number : 3 Question Id : 7155052466 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

For $z = 2 + 5i$, the modulus of $2z^3 + 21z^2 - 58z + 4$ is :

Options :

7155057699. 1153

7155057700. 947

7155057701. 537

7155057702. 837

Question Number : 4 Question Id : 7155052467 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the system of equations

$$Kx - \sqrt{2}y + \sqrt{5}z = \sqrt{7}$$

$$\sqrt{5}x + \sqrt{3}y - \sqrt{2}z = \sqrt{11}$$

$$30x + (3\sqrt{15} - 5\sqrt{6})y + (5\sqrt{15} - 3\sqrt{10})z = 5\sqrt{21} + 3\sqrt{55}$$

has infinitely many solutions, then K^2 is

Options :

7155057703. 27

7155057704. $\frac{1}{3}$

7155057705. 9

7155057706. 3

Question Number : 5 Question Id : 7155052468 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

For $\alpha, \beta \in \mathbb{R}$, if the matrices $A = \begin{pmatrix} \alpha & 0 \\ 0 & \beta \end{pmatrix}$, $B = \begin{pmatrix} \alpha & 0 \\ 0 & \alpha \end{pmatrix}$ and $I = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ satisfy the equation $(A * B) * 2I = 20I$, where $*$ is defined as $A * B = A^2 + B^2$, then $|\alpha\beta|$ is equal to :

Options :

7155057707. $2\sqrt{3}$

7155057708. $2\sqrt{2}$

7155057709. 4

7155057710. 2

Question Number : 6 Question Id : 7155052469 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The sum of the first eleven terms of the series is $\frac{1}{1+1^2+1^4} + \frac{2}{1+2^2+2^4} + \frac{3}{1+3^2+3^4} + \ldots$

Options :

7155057711. $\frac{61}{133}$

7155057712. $\frac{66}{133}$

7155057713. $\frac{16}{33}$

7155057714. $\frac{33}{67}$

Question Number : 7 Question Id : 7155052470 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

$\lim_{x\to 0}(1+3x)^{\frac{x+2}{x}}$ is equal to

Options :

7155057715. e

7155057716. e^3

7155057717. e^6

7155057718. e^9

Question Number : 8 Question Id : 7155052471 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $P(\alpha,\beta,\lambda)$ be the image of the point Q(1,2,0) in the line $\frac{x-5}{3}=\frac{y-12}{1}=\frac{z-10}{2}$, then $(PQ)^2$ is equal to

Options :

7155057719. 90

7155057720. 180

7155057721. 360

7155057722. 270

Question Number : 9 Question Id : 7155052472 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A box contains 7 red and 9 white balls.The number of ways of drawing 8 balls such that there are at least three balls of each colour, is :

Options :

7155057723. 8820

7155057724. 10584

7155057725. 1764

7155057726. 3515

Question Number : 10 Question Id : 7155052473 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let [t] denote the greatest integer function. If $\int_0^1 \left[1+x^2+x^4\right]dx = a$, then $36a-25a^2+8a^3-a^4$ is equal to

Options :

7155057727. 19

7155057728. -19

7155057729. 18

7155057730. -21

Question Number : 11 Question Id : 7155052474 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let PL = 8 units and QM = 2 units be two parallel line segments such that the line segments PM and QL intersect at the point R. If PL and QM are tangents to a circle passing through points P, Q, R then radius of this circle is

Options :

7155057731. $\sqrt{2}$

7155057732. 2

7155057733. $2\sqrt{2}$

7155057734. 4

Question Number : 12 Question Id : 7155052475 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

For some $\alpha \in \mathbb{N}$, let PQR be a triangle with two fixed vertices P(2, 5) and Q(α, –11). If the point R moves on the line l_1: $9x + 7y + \alpha = 0$, then the centroid of ΔPQR moves on the line l_2, which is parallel to l_1 at a distance $\frac{20}{3\sqrt{130}}$ units from it. If the distance of Q from l_2 is $\frac{k}{3\sqrt{130}}$, then k is equal to :

Options :

7155057735. 117

7155057736. 129

7155057737. 131

7155057738. 133

Question Number : 13 Question Id : 7155052476 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $A_i(x_i, y_i)$, i = 1,2,3 be points on the circle $x^2 + y^2 = 10$ such that A_1 lies in the 1st quadrant and it is the image of point A_2 with respect to y-axis. If the distance of point A_1 from each of the points A_2 and A_3 is 2, then twenty times the area of the $\Delta A_1 A_2 A_3$ is

Options :

7155057739. 12

7155057740. 30

7155057741. 24

7155057742. 48

Question Number : 14 Question Id : 7155052477 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The remainder when 7^{89} is divided by 15 is

Options :

7155057743. 5

7155057744. 7

7155057745. 9

7155057746. 11

Question Number : 15 Question Id : 7155052478 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the plane $y = \alpha x - \beta z + \gamma$ passing through the point $(1, -1, 3)$ is perpendicular to each of the planes $2x + y + z = 1$ and $3x - 2y + 2z = 0$, then $\alpha + \beta + \gamma$ is equal to :

Options :

7155057747. 5

7155057748. 13

7155057749. 19

7155057750. 27

Question Number : 16 Question Id : 7155052479 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $\vec{a}=\hat{i}+2\hat{j}+3\hat{k}, \vec{b}=\hat{i}-\hat{j}+2\hat{k}, \vec{c}=2\hat{i}+\hat{j}-4\hat{k}$ be three vectors. If $\vec{r}$ is the vector such that $\vec{r}\times\vec{a}=\left(\vec{b}+\vec{c}\right)\times\vec{a}$ and $\vec{r}\cdot\left(\vec{b}-\vec{c}\right)=0$, then $\vec{r}\cdot\left(\hat{i}+\hat{j}-\hat{k}\right)$ is equal to :

Options :

7155057751. 3

7155057752. 4

7155057753. 5

7155057754. 6

Question Number : 17 Question Id : 7155052480 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The probability that a randomly selected root of the equation $1 + x + x^2 + ... + x^{118} = 0$ satisfies the equation $x^7 = 1$, is

Options :

7155057755. 0

7155057756. $\frac{1}{59}$

7155057757. $\frac{3}{59}$

7155057758. $\frac{7}{118}$

Question Number : 18 Question Id : 7155052481 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let X have the binomial distribution B(n, p). If its mean is 3 and variance is 2, then $P(X < \frac{n}{4})$ is equal to :

Options :

7155057759. $\frac{29\times 2^8}{3^9}$

7155057760. $\frac{25\times 2^9}{3^9}$

7155057761. $\frac{163}{3^9}$

7155057762. $\frac{835}{3^9}$

Question Number : 19 Question Id : 7155052482 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The domain of the function $f(x)=\cos^{-1}\left(\frac{x^2-3x+2}{x^2+2x-1}\right)$ is :

Options :

7155057763. $\left(\sqrt{2}-1, \frac{3}{5}\right]$

7155057764. $\left[\frac{3}{5}, \infty\right)$

7155057765. $\mathbb{R}-\{-\sqrt{2}-1,\ \sqrt{2}-1\}$

7155057766. $(-\infty, -1-\sqrt{2}) \cup (\sqrt{2}-1, \infty)$

Question Number : 20 Question Id : 7155052483 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following statements is a tautology ?

Options :

7155057767. $((p \Rightarrow q) \vee p) \Rightarrow q$

7155057768. $((p \wedge q) \Rightarrow p) \Rightarrow q$

7155057769. $((p \wedge q) \wedge (\sim q)) \Rightarrow p$

7155057770. $((p \Rightarrow q) \vee p) \Rightarrow p$

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 : 7155052484 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The curve $y = x^2 + 1$ divides the area enclosed by the curves $y + |x| = 3$ and $y = |x-1|$ in the ratio m : n , where m and n are coprime, then m + n is equal to _____ .

Question Number : 22 Question Id : 7155052485 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The number of ways in which 30 identical pens can be distributed among 12 students so that each student gets at least one pen and exactly two students get at least two pens each, is _____.

Question Number : 23 Question Id : 7155052486 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let $\left(1+x^2-x^4\right)^{12} = \sum_{n=0}^{48} a_n x^n$. Then $a_0 + a_2 + a_4 + ... + a_{44}$ is equal to

Question Number : 24 Question Id : 7155052487 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If S_n denotes the sum of first n terms of the series $7 + 10 + 16 + 25 + 37 + ...$, then $S_{30} - S_{20}$ is equal to _____.

Question Number : 25 Question Id : 7155052488 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If [t] denotes the greatest integer $\le$ t, then the number of points , at which the function $f(x)=\left[x+x^3\right]+\left|x-x^3\right|+\left|x+\frac{1}{2}\right|$ is not differentiable in the open interval (–10, 10), is _____.

Question Number : 26 Question Id : 7155052489 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If $\int \frac{dx}{(3x^2+5)\sqrt{10x^2+7}} = -\frac{1}{\sqrt{580}} \log_e |f(x)| + C$ where C is an arbitrary constant, then $f(0)$ is equal to

Question Number : 27 Question Id : 7155052490 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let the equation of the hyperbola with foci (1, 5), (1, –1) and eccentricity $\sqrt{3}$ be $x^2 - 2y^2 + ax + by + c = 0$. Then $|a + b + c|$ is equal to _____.

Question Number : 28 Question Id : 7155052491 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let α_1, α_2 be the values of α such that the distance between the point (2, 4, 3) and the plane $3x + y + \alpha z + 10 = 0$ is $\sqrt{35}$ units. Then the area of the triangle with vertices $(\alpha_1, \alpha_2, 0)$, $(\alpha_2, \alpha_1, 0)$ and $\left(\frac{164}{13}, 5, 0\right)$ is _____ unit^2.

Question Number : 29 Question Id : 7155052492 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let O be the origin and let the vectors $\overrightarrow{OA} = -3\hat{i} + 7\hat{j} + 5\hat{k}$, $\overrightarrow{OB} = -5\hat{i} + 7\hat{j} - 3\hat{k}$ and $\overrightarrow{OC} = \hat{u}$ represent three sides of a parallelopiped, where $\hat{u}$ is a unit vector in the xy- plane. If the maximum volume of the parallelopiped is $2\sqrt{\alpha}$, then α is equal to _____.

Question Number : 30 Question Id : 7155052493 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If the solution curve of the differential equation $\frac{x+y-2}{x+y-1}\frac{dy}{dx} = \frac{x+y+2}{x+y+1}$, $x + y > 2$ passes through the points $\left(\sqrt{2}, \sqrt{2}\right)$ and $(2, \alpha)$, then $2\alpha - \log_e\left(\frac{\alpha^2+4\alpha+2}{6}\right)$ is equal to _____ .

Aptitude Test

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

Question Number : 31 Question Id : 7155052494 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Adobe is a

Options :

7155057781. Type of cement

7155057782. Type of floor finish

7155057783. Type of paint

7155057784. Type of Brick

Question Number : 32 Question Id : 7155052495 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : Chandigarh is the first planned city of Independent India

Statement II : Chandigarh city was designed by Swiss French architect Le Corbusier

In the light of above statements, choose the **most appropriate** answer form the options given below

Options :

7155057785. Both Statement I and Statement II are correct

7155057786. Both Statement I and Statement II are incorrect

7155057787. Statement I is correct but statement II is incorrect

7155057788. Statement I is incorrect but statement II is correct

Question Number : 33 Question Id : 7155052496 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : Glass has low thermal conductivity

Statement II : Glass can absorb, refract and transmit light.

In the light of above statements, choose the most appropriate answer form the options given below

Options :

7155057789. Both Statement I and Statement II are correct

7155057790. Both Statement I and Statement II are incorrect

7155057791. Statement I is correct but statement II is incorrect

7155057792. Statement I is incorrect but statement II is correct

Question Number : 34 Question Id : 7155052497 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	PMUY	I.	KAUSHAL VISKAS YOJNA
B.	PMAY	II.	JAN DHAN YOJANA
C.	PMKVY	III.	UJJWALA YOJANA
D.	PMJDY	IV.	AWAS YOJANA

Choose the correct answer from the options given below:

Options :

7155057793. A-I, B-III, C-II, D-IV

7155057794. A-III, B-IV, C-I, D-II

7155057795. A-IV, B-II, C-III, D-I

7155057796. A-IV, B-III, C-I, D-II

Question Number : 35 Question Id : 7155052498 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	CP Kukreja	I.	IIM Ahmedabad
B.	Louis I Kahn	II.	Jawahar Lal Nehru University
C.	B.V Doshi	III.	IIT Kanpur
D.	Achyut Kanvinde	IV.	IIM Bengaluru

Choose the correct answer from the options given below:

Options :

7155057797. A-IV, B-II, C-I, D-III

7155057798. A-III, B-I, C-II, D-IV

7155057799. A-II, B-I, C-IV, D-III

7155057800. A-I, B-IV, C-III, D-II

Question Number : 36 Question Id : 7155052499 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which one of these is not a complimentary colour?

Options :

7155057801. Blue-Orange

7155057802. Red-Green

7155057803. Blue-Green

7155057804. Violet-Yellow

Question Number : 37 Question Id : 7155052500 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In which State of India, Robbers cave is situated:

Options :

7155057805. Himachal Pradesh

7155057806. Uttarakhand

7155057807. Uttar Pradesh

7155057808. Madhya Pradesh

Question Number : 38 Question Id : 7155052501 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Choose the correct option among the following:

Petronas Tower is situated in:

Options :

7155057809. Paris

7155057810. Dubai

7155057811. Kuala Lumpur

7155057812. New York

Question Number : 39 Question Id : 7155052502 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The Konark Temple is located in which state?

Options :

7155057813. Madhya Pradesh

7155057814. Odisha

7155057815. Karnataka

7155057816. Rajasthan

Question Number : 40 Question Id : 7155052503 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is the architect of the Lotus Temple?

Options :

7155057817. Louis I Kahn

7155057818. Mohse Safdi

7155057819. Fariborz Sahba

7155057820. Richard Meyer

Question Number : 41 Question Id : 7155052504 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A small lift for carrying only a small load is known as:

Options :

7155057821. A dead Bearer

7155057822. A Dumb Waiter

7155057823. A Jockey Boy

7155057824. A push upper

Question Number : 42 Question Id : 7155052505 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which are often referred as 'twin cities' of Odisha?

Options :

7155057825. Bhubaneshwar-Puri

7155057826. Puri-Cuttack

7155057827. Bhubaneshwar-Cuttack

7155057828. Bhubaneshwar-Rourkela

Question Number : 43 Question Id : 7155052506 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which is the correct chronology of Human Civilizations in terms of their existence?

Options :

7155057829. Mesopotamia-Harappa-Egyptian-Chinese

7155057830. Mesopotamia-Egyptian-Harappa-Chinese

7155057831. Mesopotamia-Chinese-Harappa-Egyptian

7155057832. Egyptian-Mesopotamia-Harappa-Sumerian

Question Number : 44 Question Id : 7155052507 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Qutub-Minar in Delhi was built by:

Options :

7155057833. Shah Jahan

7155057834. Jahangir

7155057835. Akbar

7155057836. Qutub ud-din Aibak

Question Number : 45 Question Id : 7155052508 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which direction in the southern hemisphere would you get glare free (diffused) light throughout the year?

Options :

7155057837. North

7155057838. South

7155057839. East

7155057840. West

Question Number : 46 Question Id : 7155052509 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is the architect of the famous "Jawaharlal Kala Complex" in Jaipur?

Options :

7155057841. Raj Rewal

7155057842. Charles Correa

7155057843. Achyut Kanvinde

7155057844. Hafeez Contractor

Question Number : 47 Question Id : 7155052510 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Dhajji-Dewari is a construction style popular predominantly in _____.

Options :

7155057845. Coastal Areas

7155057846. Plains

7155057847. Mountainous Region

7155057848. Desert Areas

Question Number : 48 Question Id : 7155052511 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which stone is used for roofing in mountainous regions?

Options :

7155057849. Marble

7155057850. Granite

7155057851. Shale

7155057852. Sand Stone

Question Number : 49 Question Id : 7155052512 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Chandigarh is an example of which type of city planning.

Options :

7155057853. Radio Centric

7155057854. Grid-iron

7155057855. Linear

7155057856. Organic

Question Number : 50 Question Id : 7155052513 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If you have to build on the seashore in Goa, which rooms would have the best view of the sea?

Options :

7155057857. Those facing North

7155057858. Those facing South

7155057859. Those facing East

7155057860. Those facing West

Question Number : 51 Question Id : 7155052514 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

"NIFT" National Institute of Fashion Technology, Delhi is designed by

Options :

7155057861. B.V Doshi

7155057862. C.P Kukreja

7155057863. Raj Rewal

7155057864. Bimal Patel

Question Number : 52 Question Id : 7155052515 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.		I.	Empire state Building
B.		II.	Hagia Sophia
C.		III.	Sydney Opera House
D.		IV.	Colosseum

Choose the correct answer from the options given below:

Options :

7155057865. A-II, B-I, C-IV, D-III

7155057866. A-I, B-III, C-IV, D-II

7155057867. A-I, B-II, C-III, D-IV

7155057868. A-IV, B-III, C-II, D-I

Question Number : 53 Question Id : 7155052516 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.		I.	Tesla
B.		II.	Ferrari
C.		III.	Porsche
D.		IV.	Toyota

Choose the correct answer from the options given below:

Options :

7155057869. A-IV, B-I, C-II, D-III

7155057870. A-II, B-III, C-I, D-IV

7155057871. A-III, B-II, C-I, D-IV

7155057872. A-IV, B-III, C-II, D-I

Question Number : 54 Question Id : 7155052517 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : Red, Blue and Yellow are the primary colours of a colour wheel.

Statement II : The colours which are positioned opposite to each other in a colour wheel are known as complementary colours.

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

Options :

7155057873. Both Statement I and Statement II are correct

7155057874. Both Statement I and Statement II are incorrect

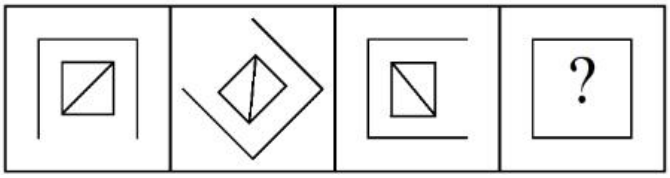
7155057875. Statement I is correct but statement II is incorrect

7155057876. Statement I is incorrect but statement II is correct

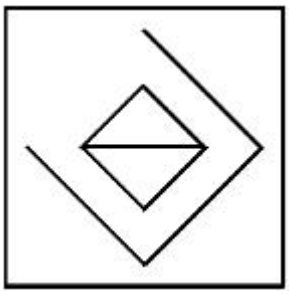
Question Number : 55 Question Id : 7155052518 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

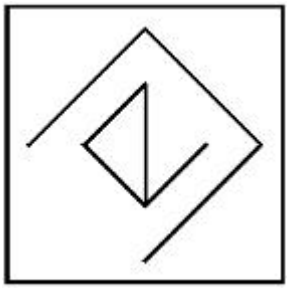
Following question consists of problem figures followed by answer figures. Select a figure from amongst the answer figures which will continue the same series or pattern as established by the problem figures.

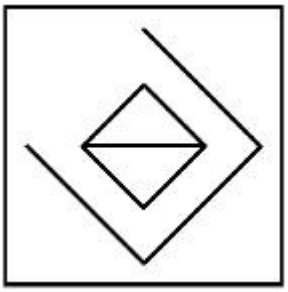
PROBLEM FIGURES

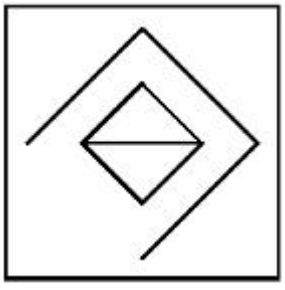


Options :

7155057877. 

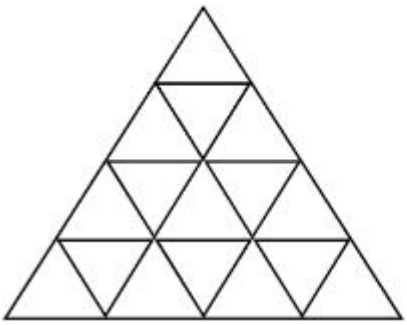
7155057878. 

7155057879. 

7155057880. 

Question Number : 56 Question Id : 7155052519 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

How many triangles are there in given figure:-



Options :

7155057881. 26

7155057882. 25

7155057883. 27

7155057884. 24

Question Number : 57 Question Id : 7155052520 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Find the odd one out:-

7, 9, 25, 32, 43, 59

Options :

7155057885. 59

7155057886. 32

7155057887. 25

7155057888. 9

Question Number : 58 Question Id : 7155052521 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A residential building has 15 floors. The height of ground floor is 4.2 meter (including length and slab thickness). Rest all other floors are of 3.3 meter high (including slab thickness). What is the total height of the building (from ground to terrace) in meters?

Options :

7155057889. 45.6 meter

7155057890. 50 meter

7155057891. 50.4 meter

7155057892. 51.6 meter

Question Number : 59 Question Id : 7155052522 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the mirror image of the given word:-

SUCCESS

Options :

7155057893. SUCCESS

7155057894. SUCCESS

7155057895. SUCCESS

7155057896. SSECCUS

Question Number : 60 Question Id : 7155052523 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The scale of a map is 1:1000. If a car travels 7 cm from point 'A' to point 'B' on the Map. Then how much the car has travelled in original:-

Options :

7155057897. 0.7 km

7155057898. 7000 mm

7155057899. 7 km

7155057900. 70 meter

Question Number : 61 Question Id : 7155052524 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A land size of 80 meter × 40 meter for a house design is drawn on paper at a scale of 1:100, then what size is drawn on paper to represent the land?

Options :

7155057901. 8 meter × 4 meter

7155057902. 80 meter × 40 meter

7155057903. 8 centimeter × 4 centimeter

7155057904. 4 meter × 2 meter

Question Number : 62 Question Id : 7155052525 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Find the missing number in given series.

16, 33, 65, 131, 261, (.....)

Options :

7155057905. 523

7155057906. 521

7155057907. 524

7155057908. 520

Question Number : 63 Question Id : 7155052526 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In a code language if ROMAN is written as TQOCP: then ITALY is.....

Options :

7155057909. KVCMA

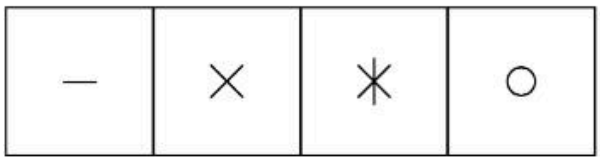
7155057910. KWCNB

7155057911. KUCLA

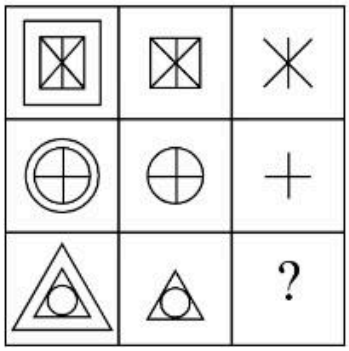
7155057912. KVCNA

Question Number : 64 Question Id : 7155052527 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Select a suitable figure from the four alternatives which will come in the empty box.



(A) (B) (C) (D)



Options :

7155057913. D

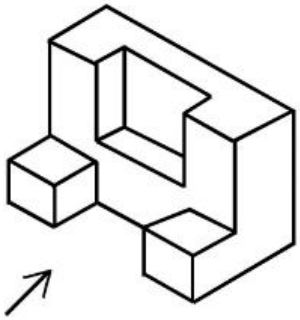
7155057914. C

7155057915. B

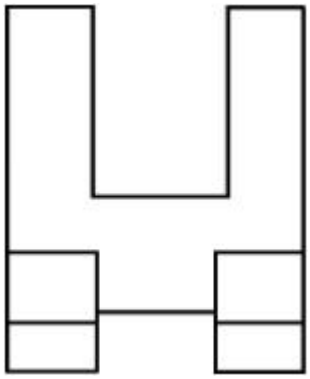
7155057916. A

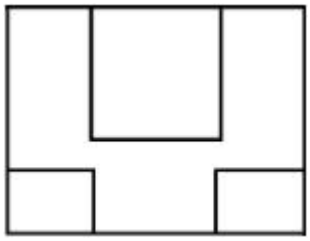
Question Number : 65 Question Id : 7155052528 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

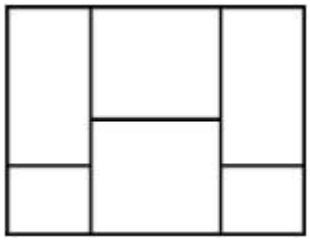
The 3D figure shows the view of an object. Looking in the direction of arrow, identify the most appropriate elevation from the given answer figures.

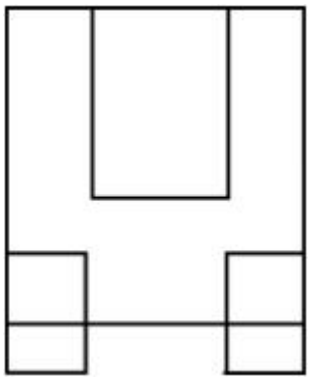


Options :

7155057917. 

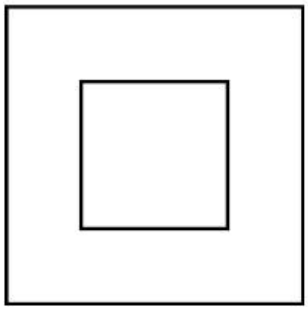
7155057918. 

7155057919. 

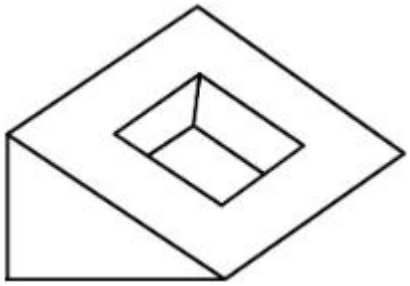
7155057920. 

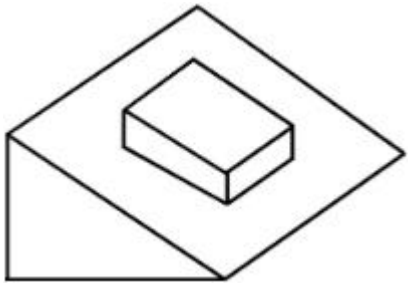
Question Number : 66 Question Id : 7155052529 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

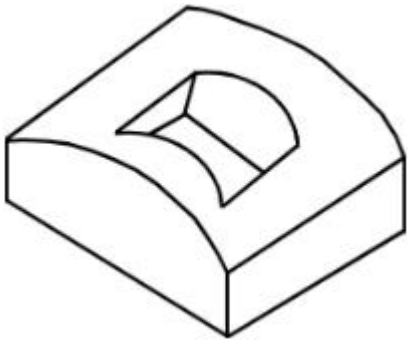
Question figure shows top view/ plan of an object. Identify the INCORRECT 3D view from the given answers figure.

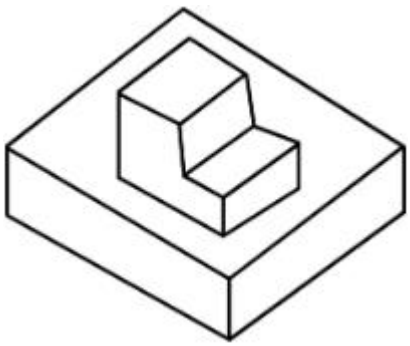


Options :

7155057921. 

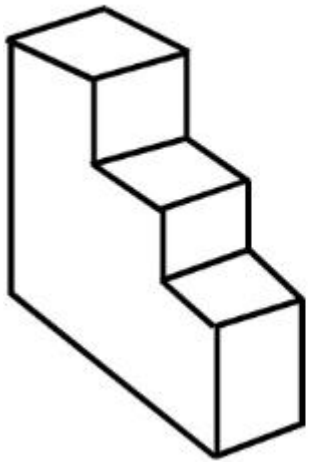
7155057922. 

7155057923. 

7155057924. 

Question Number : 67 Question Id : 7155052530 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

How many surfaces does the object have?



Options :

7155057925. 9

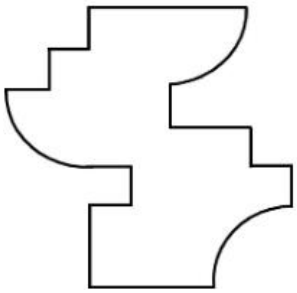
7155057926. 10

7155057927. 8

7155057928. 11

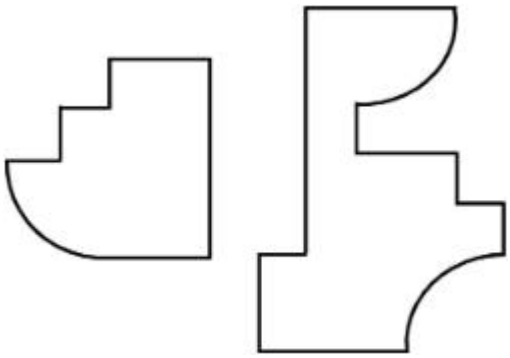
Question Number : 68 Question Id : 7155052531 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the question figure is cut into two parts, which of the answer figures complete the question figure without any overlappings?

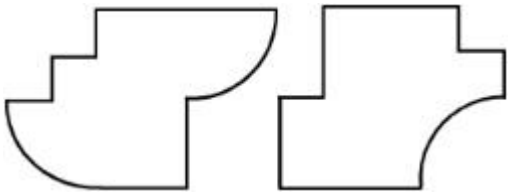


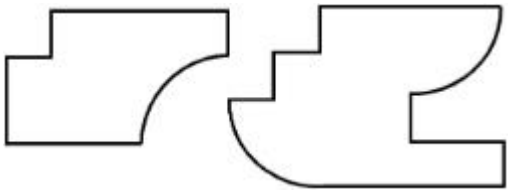
Options :

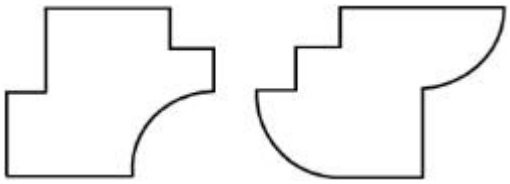
7155057929.



7155057930.

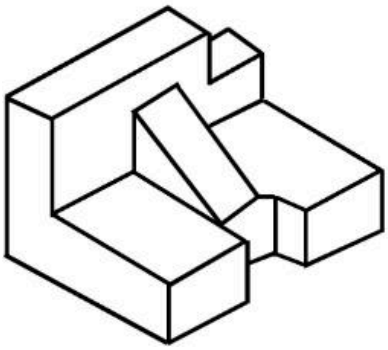


7155057931. 

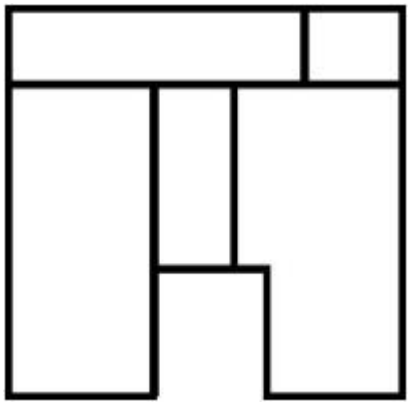
7155057932. 

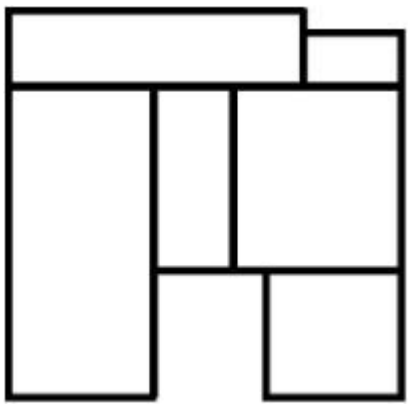
Question Number : 69 Question Id : 7155052532 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

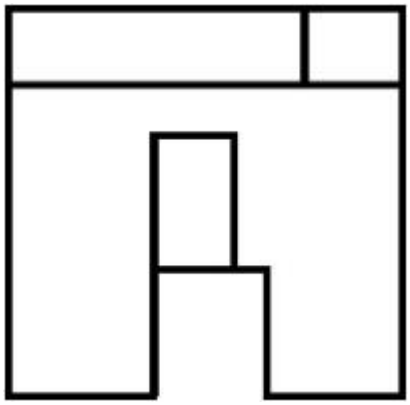
The 3D problem figure shows the view of an object. Identify its appropriate top view from the answer figures.

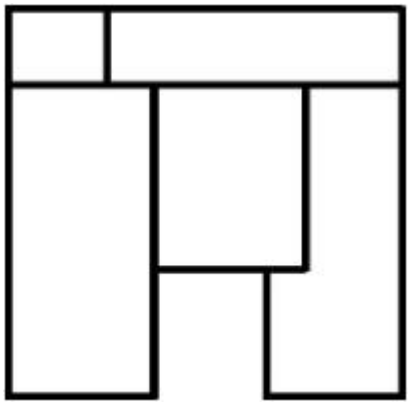


Options :

7155057933. 

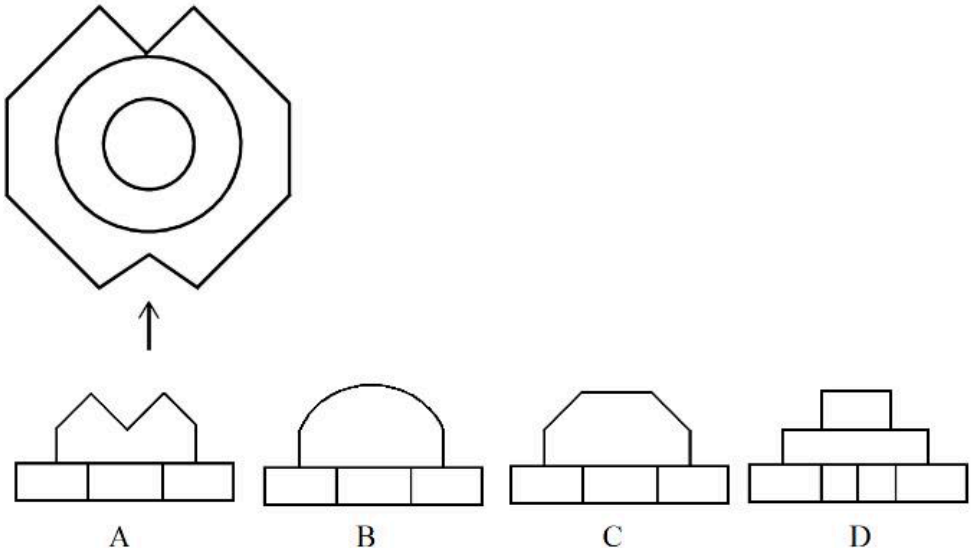
7155057934. 

7155057935. 

7155057936. 

Question Number : 70 Question Id : 7155052533 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the correct elevation when you look into the object from the marked arrow side of the plan of the object.



Options :

7155057937. D

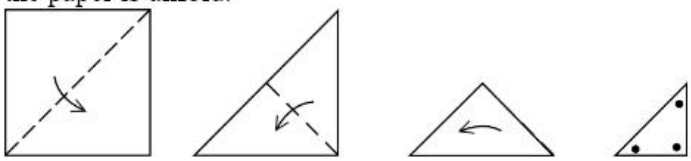
7155057938. A

7155057939. B

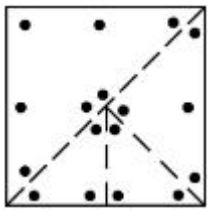
7155057940. C

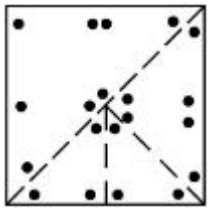
Question Number : 71 Question Id : 7155052534 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

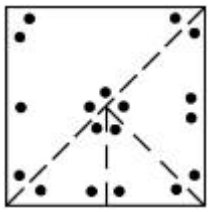
A paper is folded in a given pattern and it is cut at the end. Identify which pattern is formed when the paper is unfold.

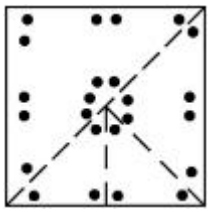


Options :

7155057941. 

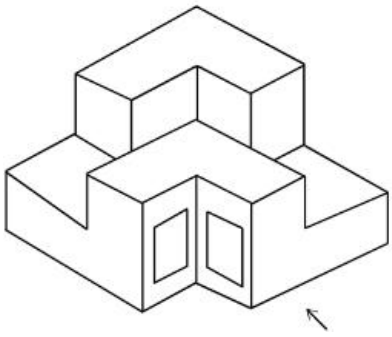
7155057942. 

7155057943. 

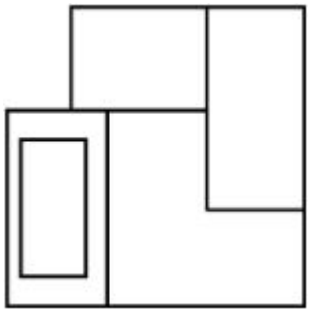
7155057944. 

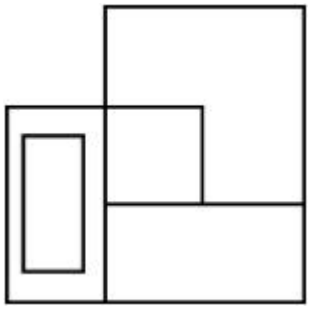
Question Number : 72 Question Id : 7155052535 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

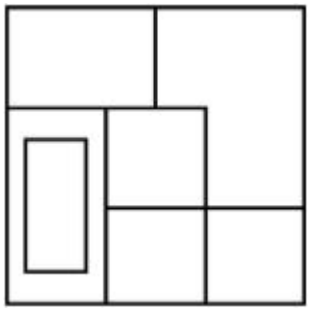
The question figure shows the 3-D view of an object. Identify the correct view, looking in the direction of arrow.

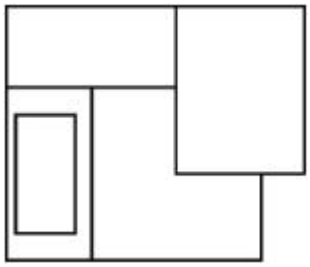


Options :

1. 

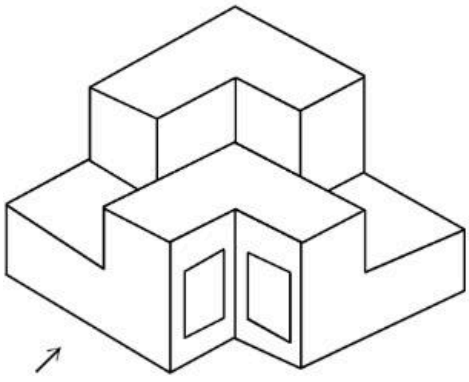
2. 

3. 

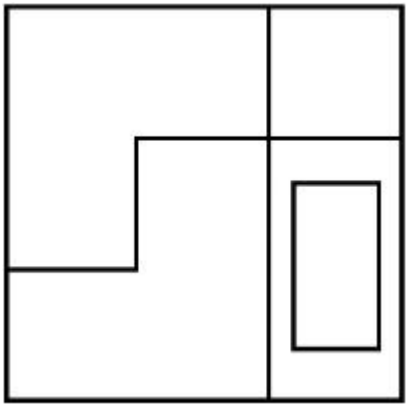
4. 

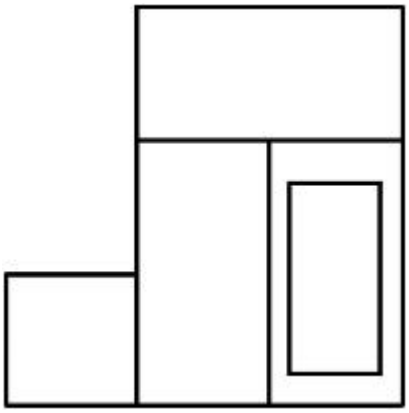
Question Number : 73 Question Id : 7155052536 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

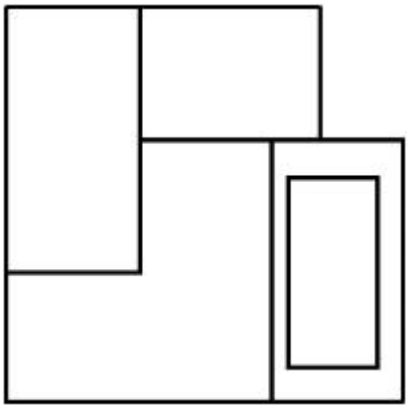
The question figure shows the 3-D view of an object. Identify the correct view, looking in the direction of arrow.

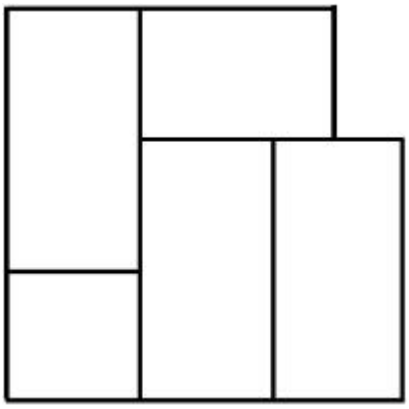


Options :

7155057949. 

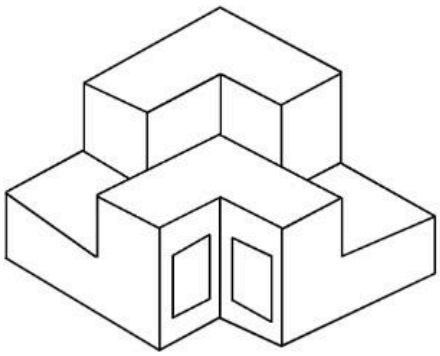
7155057950. 

7155057951. 

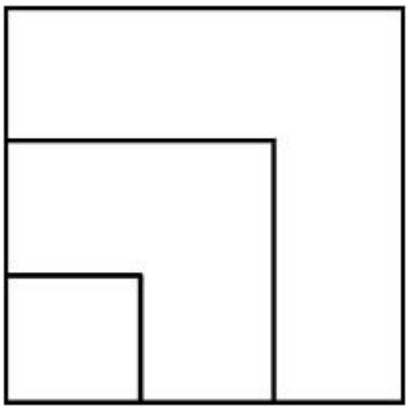
7155057952. 

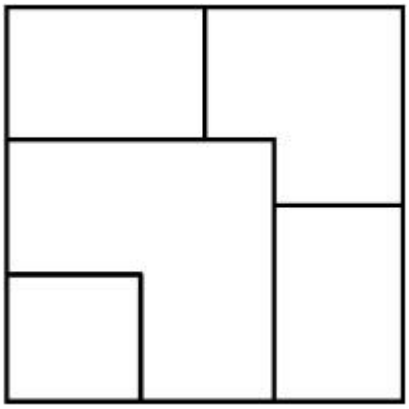
Question Number : 74 Question Id : 7155052537 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

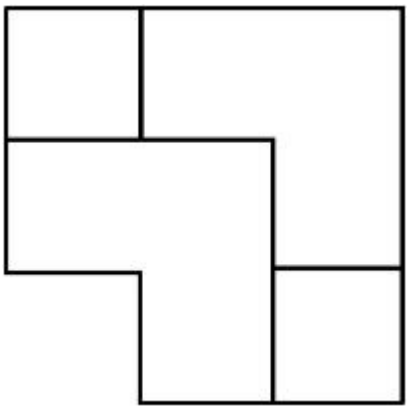
From the given options below, choose the correct plan of the 3-D object, when viewed from the top.

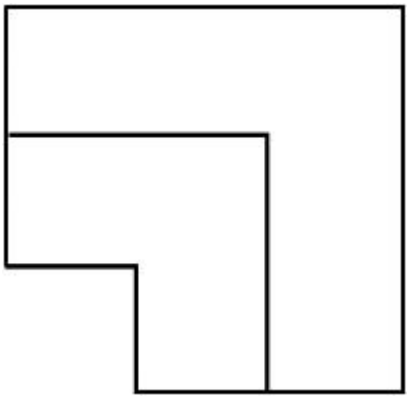


Options :

7155057953. 

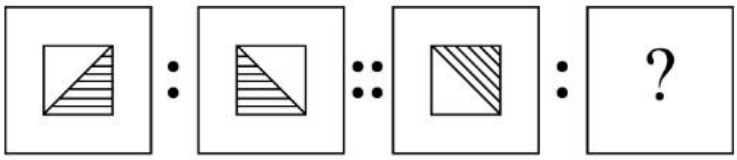
7155057954. 

7155057955. 

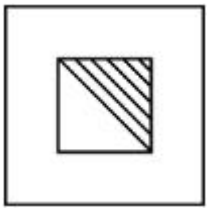
7155057956. 

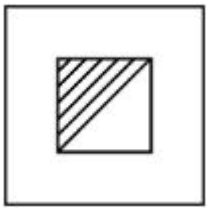
Question Number : 75 Question Id : 7155052538 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

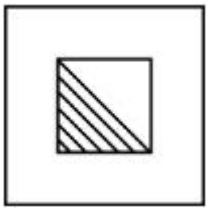
The second figure in the first part of the problem figures bears certain relationship to the first figure. Similarly, one of the figures of answer figures bears the same relationship to the first figure of the second part. Identify the correct option from the given answer figures.



Options :

7155057957. 

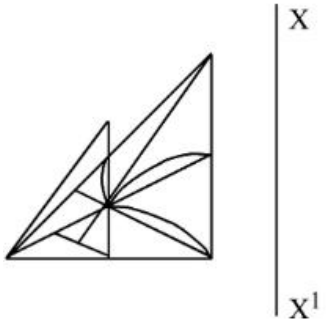
7155057958. 

7155057959. 

7155057960. 

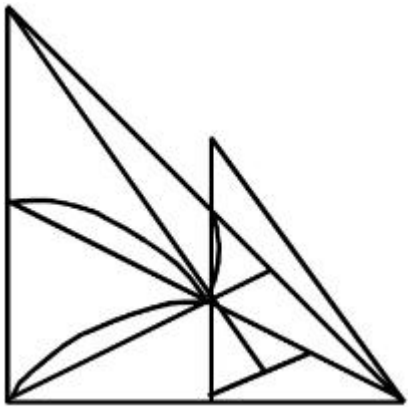
Question Number : 76 Question Id : 7155052539 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the true mirror image of the figure amongst the answer figures with respect to X-X

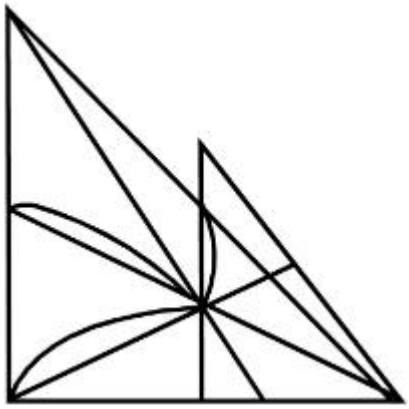


Options :

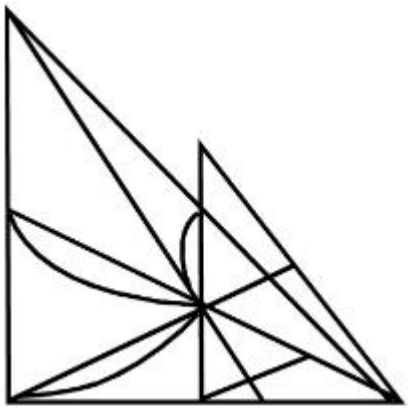
7155057961.

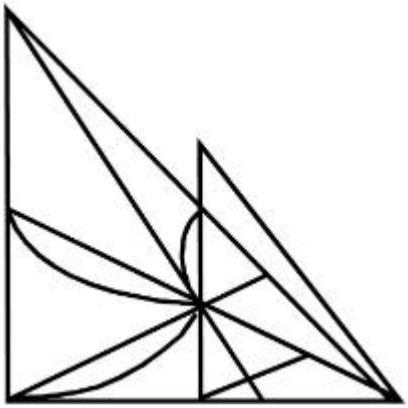


7155057962.



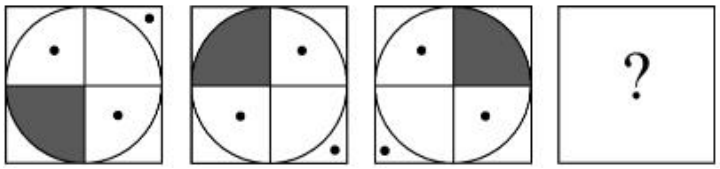
7155057963.



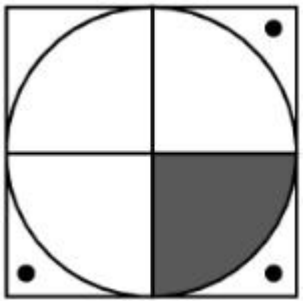
7155057964. 

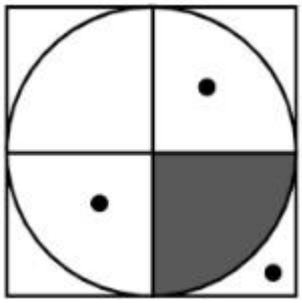
Question Number : 77 Question Id : 7155052540 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

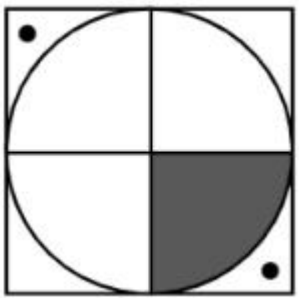
Choose the correct option amongst the answer figures which complete the series.

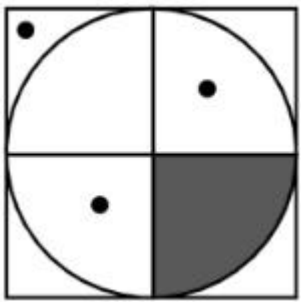


Options :

7155057965. 

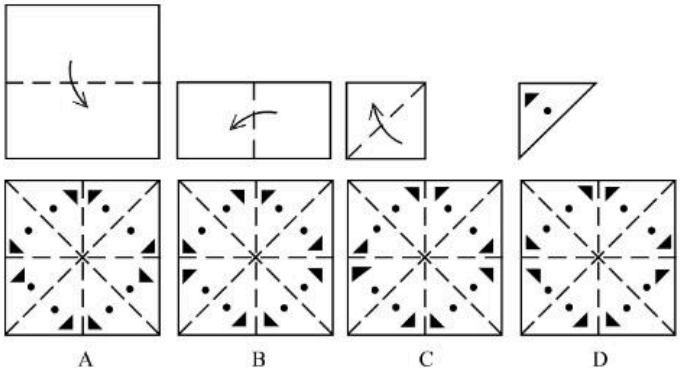
7155057966. 

7155057967. 

7155057968. 

Question Number : 78 Question Id : 7155052541 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Sheet is folded in marked format and cut led at last as shown. Identify from the options below, how the pattern will be made when it's fully unfold?



Options :

7155057969. B

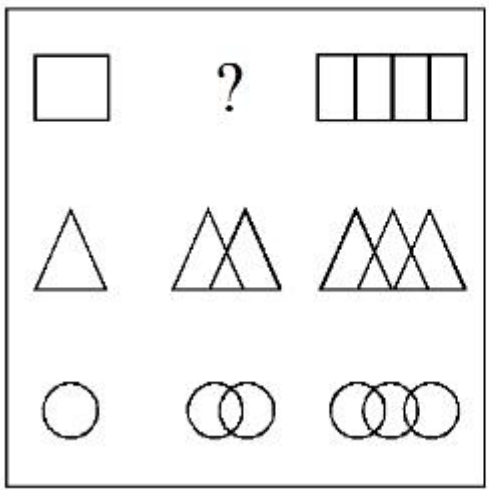
7155057970. A

7155057971. D

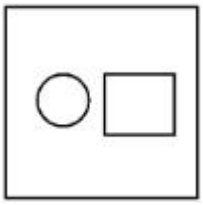
7155057972. C

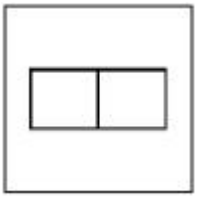
Question Number : 79 Question Id : 7155052542 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

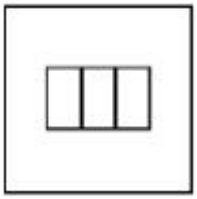
In the figure mentioned below find the missing series:-

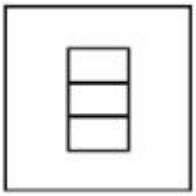


Options :

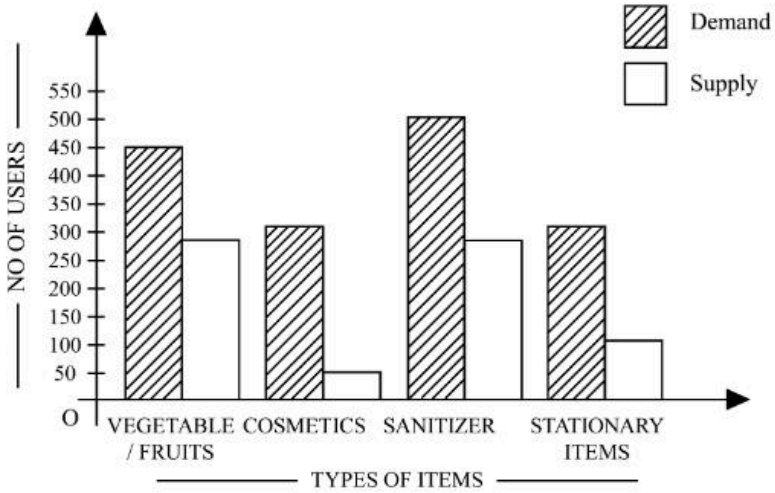
7155057973. 

7155057974. 

7155057975. 

7155057976. 

Question Number : 80 Question Id : 7155052543 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



The diagram shows the supply and demand of different users for different items. Which of the following is/are correct?

A. Sanitizer only meet 50% of the demand
B. Cosmetics has the least supply among all.
C. Among all, two items have equal demand but difference in supply
D. Among all, two items have equal supply and two items have equal demand.

Choose the correct answer from the options given below:-

Options :

7155057977. B and D only

7155057978. A and B only

7155057979. A and C only

7155057980. B, C and D only

Planning

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

Question Number : 81 Question Id : 7155052544 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

When a person cannot meet a minimum level of living standards compared to others in the same time and place, it is called :

Options :

7155057981. Poverty

7155057982. Abundance

7155057983. Adequacy

7155057984. Luxury

Question Number : 82 Question Id : 7155052545 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Acropolis in Greece is a/an:

Options :

7155057985. Court

7155057986. Citadel on a High Land

7155057987. Open Air Theatre

7155057988. Great Bath

Question Number : 83 Question Id : 7155052546 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In Land-use map, identify the colour code used for recreational uses.

Options :

7155057989. Yellow

7155057990. Green

7155057991. Purple

7155057992. Blue

Question Number : 84 Question Id : 7155052547 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Statement I : The plan of Delhi city is in the radial form.

Statement II : The plan of Delhi city is in the Grid Iron form.

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

Options :

7155057993. Both Statement **I** and Statement **II** are true

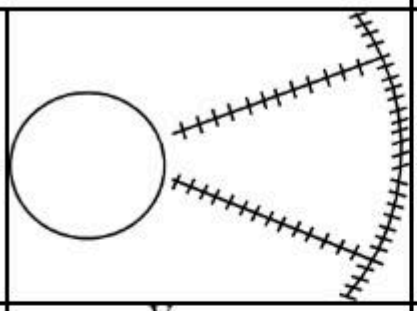
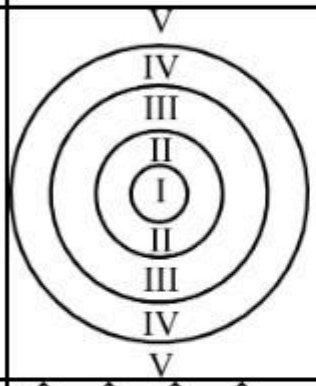
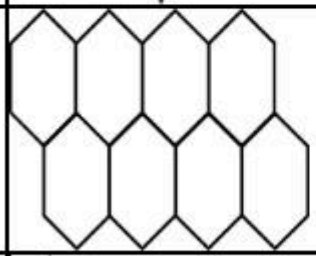
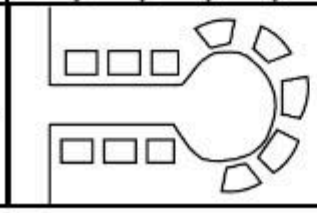
7155057994. Both Statement **I** and Statement **II** are false

7155057995. Statement **I** is true but Statement **II** is false

7155057996. Statement **I** is false but Statement **II** is true

Question Number : 85 Question Id : 7155052548 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.		I.	Christaller's concept
B.		II.	Garden City concept
C.		III.	Ernest Burgess
D.		IV.	Radburn concept

Choose the correct answer from the options given below:

Options :

7155057997. A-II, B-III, C-I, D-IV

7155057998. A-III, B-I, C-II, D-IV

7155057999. A-IV, B-III, C-I, D-II

7155058000. A-II, B-III, C-IV, D-I

Question Number : 86 Question Id : 7155052549 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	Tower in the Park	I.	Sir Ebenezer Howards
B.	Neighbourhood Unit	II.	Le-Corbusier
C.	Garden City	III.	Clerence Perry
D.	Sector Model	IV.	Homer Hoyt

Choose the correct answer from the options given below:

Options :

7155058001. A-I, B-III, C-IV, D-II

7155058002. A-II, B-III, C-I, D-IV

7155058003. A-II, B-III, C-IV, D-I

7155058004. A-III, B-II, C-I, D-IV

Question Number : 87 Question Id : 7155052550 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	1st Five Year Plan	I.	1969-1974
B.	4th Five Year Plan	II.	1951-1956
C.	8th Five Year Plan	III.	1992-1997
D.	11th Five Year Plan	IV.	2007-2012

Choose the correct answer from the options given below:

Options :

7155058005. A-I, B-II, C-III, D-IV

7155058006. A-II, B-I, C-III, D-IV

7155058007. A-II, B-III, C-IV, D-I

7155058008. A-II, B-I, C-IV, D-III

Question Number : 88 Question Id : 7155052551 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	Madurai	I.	Planned Hill city
B.	Aurovile	II.	Kadamba Vanam
C.	Lavasa	III.	Grid Iron
D.	Chandigarh	IV.	Matri Mandir

Choose the correct answer from the options given below:

Options :

7155058009. A-IV, B-I, C-II, D-III

7155058010. A-IV, B-II, C-I, D-III

7155058011. A-I, B-II, C-IV, D-III

7155058012. A-II, B-IV, C-I, D-III

Question Number : 89 Question Id : 7155052552 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following article is related to Panchayati Raj ?

Options :

7155058013. Article 243

7155058014. Article 324

7155058015. Article 124

7155058016. Article 73

Question Number : 90 Question Id : 7155052553 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

How many acres is 1 hectare?

Options :

7155058017. 2.47

7155058018. 3.47

7155058019. 4.47

7155058020. 5.47

Question Number : 91 Question Id : 7155052554 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What is the full form of the NITI ?

Options :

7155058021. National Institute for Transforming India

7155058022. National Industry for Technology India

7155058023. National Industry for Transforming India

7155058024. National Industrial Technical Institute

Question Number : 92 Question Id : 7155052555 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The term "Conurbation" was coined by ?

Options :

7155058025. Kevin Lynch

7155058026. Patrick Geddes

7155058027. Ebenezer Howard

7155058028. Lewis Mumford

Question Number : 93 Question Id : 7155052556 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is the planner of Durgapur city?

Options :

7155058029. Le Corbusier

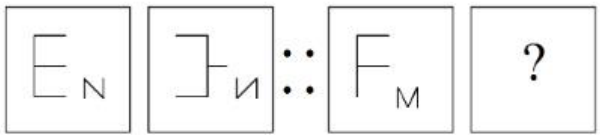
7155058030. Ebenezer Howard

7155058031. Joseph Allen Stein

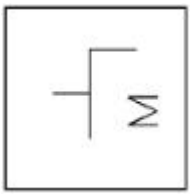
7155058032. Charles Correa

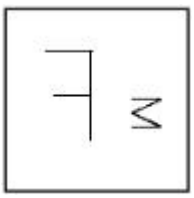
Question Number : 94 Question Id : 7155052557 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In problem figures, A and B have certain relation. Identify which one of the answer figures will have similar relation between C and D?



Options :

7155058033. 

7155058034. 

7155058035. 

7155058036. 

Question Number : 95 Question Id : 7155052558 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The Housing Development Finance Corporation Limited (HDFC) was founded in:

Options :

7155058037. 1947

7155058038. 1961

7155058039. 1977

7155058040. 1981

Question Number : 96 Question Id : 7155052559 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

An essential feature of federal government is:

Options :

7155058041. Centralisation of Powers

7155058042. Division of Powers between various levels

7155058043. Opposition

7155058044. Unwritten Constitution

Question Number : 97 Question Id : 7155052560 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following is not a public sector bank?

Options :

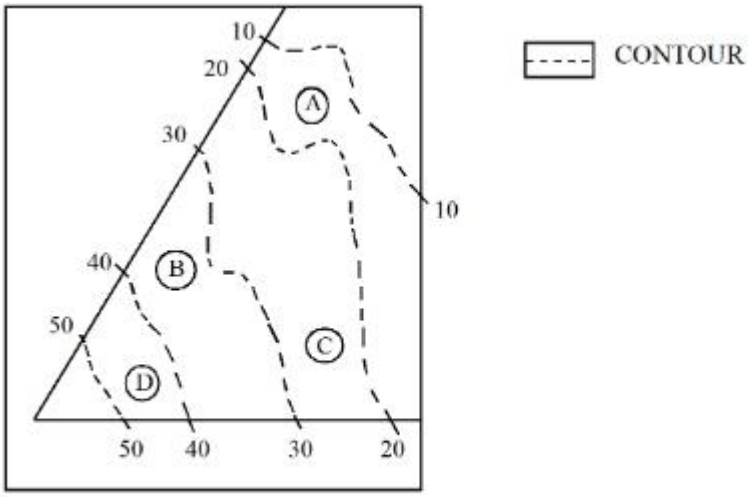
7155058045. ICICI

7155058046. State Bank of India

7155058047. Indian Bank

7155058048. Canara Bank

Question Number : 98 Question Id : 7155052561 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In the given diagram, the location of D on the site is:

Options :

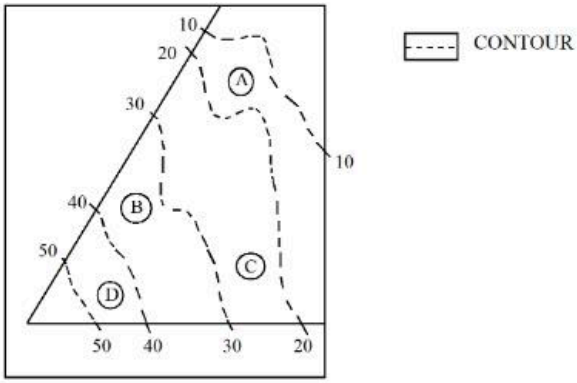
7155058049. 30-40

7155058050. 40-50

7155058051. 10-20

7155058052. 20-30

Question Number : 99 Question Id : 7155052562 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Statement I: In the given diagram, the location of B is higher than C

Statement II: In the given diagram, the location of A is lower than C

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

Options :

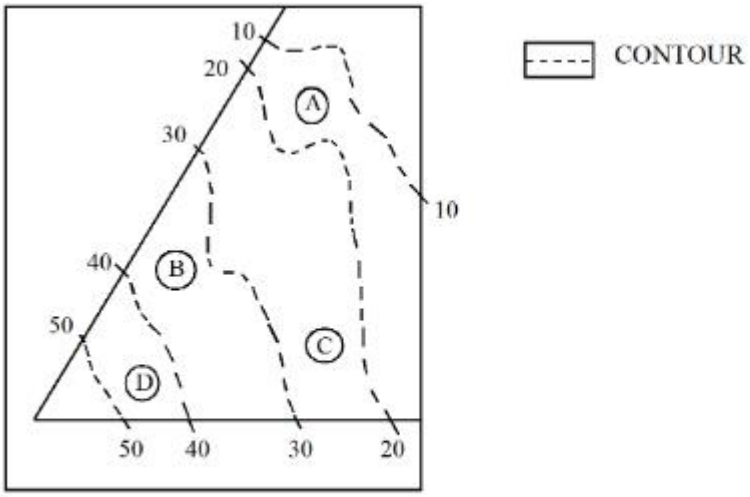
7155058053. Both Statement **I** and Statement **II** are true

7155058054. Both Statement **I** and Statement **II** are false

7155058055. Statement **I** is true but Statement **II** is false

7155058056. Statement **I** is false but Statement **II** is true

Question Number : 100 Question Id : 7155052563 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In the given diagram, the location of the A lies on which contour ?

Options :

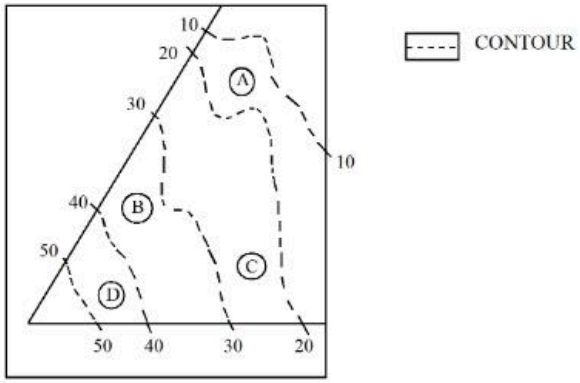
7155058057. 20-30

7155058058. 30-40

7155058059. 10-20

7155058060. 40-50

Question Number : 101 Question Id : 7155052564 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Statement I: 'A' is located at the lowest point of the site.

Statement II: 'A' is located at a lower point than 'B' on the site.

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

Options :

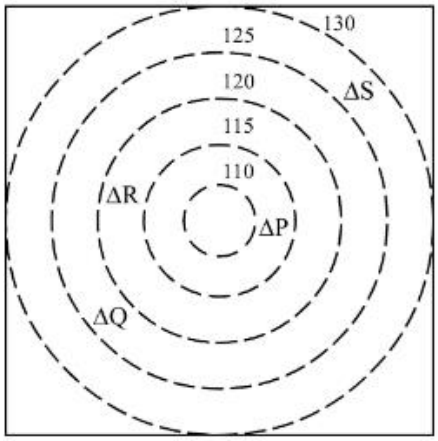
7155058061. Both Statement **I** and Statement **II** are true

7155058062. Both Statement **I** and Statement **II** are false

7155058063. Statement **I** is true but Statement **II** is false

7155058064. Statement **I** is false but Statement **II** is true

Question Number : 102 Question Id : 7155052565 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



CONTOURS

Δ BUILDINGS

ALL DIENSIONS ARE IN "M"

In the given diagram, how many contour levels are present in between "P" and "S"

Options :

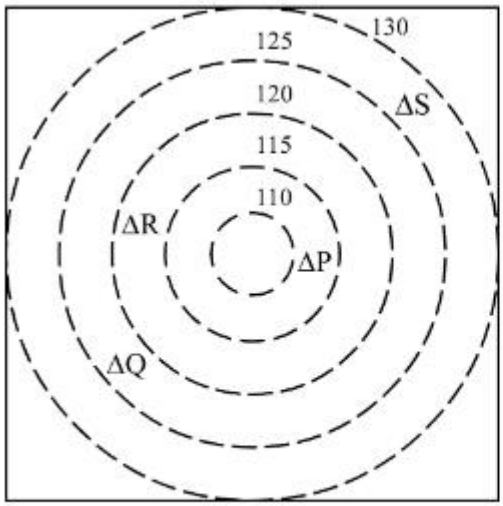
7155058065. 2

7155058066. 3

7155058067. 1

7155058068. 4

Question Number : 103 Question Id : 7155052566 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



CONTOURS

Δ BUILDINGS

ALL DIENSIONS ARE IN "M"

In the given diagram, "S" is higher than _____ meter from "R"

Options :

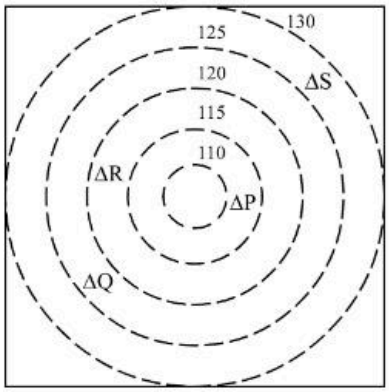
7155058069. 5

7155058070. 10

7155058071. 25

7155058072. 15

Question Number : 104 Question Id : 7155052567 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



CONTOURS

Δ BUILDINGS

ALL DIENSIONS ΔRE IN "M"

Based on the given diagram:

Statement I : "R" is higher than "P" and "Q"

Statement II : "S" is higher than "P", "Q" and "R"

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

Options :

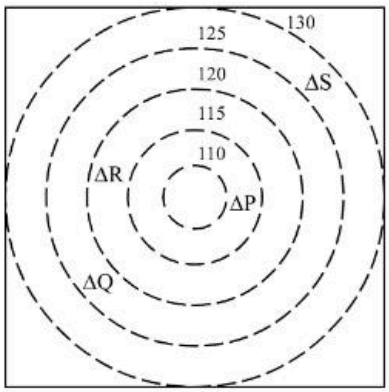
7155058073. Both Statement **I** and Statement **II** are true

7155058074. Both Statement **I** and Statement **II** are false

7155058075. Statement **I** is true but Statement **II** is false

7155058076. Statement **I** is false but Statement **II** is true

Question Number : 105 Question Id : 7155052568 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



CONTOURS

Δ BUILDINGS

ALL DIENSIONS ΔRE IN "M"

Based on the given diagram:

Statement I : "P" is located at a height of 110 M

Statement II : "Q" is located 5 M lower than "S"

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

Options :

7155058077. Both Statement **I** and Statement **II** are true

7155058078. Both Statement **I** and Statement **II** are false

7155058079. Statement **I** is true but Statement **II** is false

7155058080. Statement **I** is false but Statement **II** is true