National Testing Agency

Question Paper Name :	JEE Main 2024 Paper 2B (B.Planning) Apr 12 Single sitting
Subject Name :	Paper 2B (B.Planning)
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Duration :	180
Total Marks :	400

Paper 2B (B.Planning)

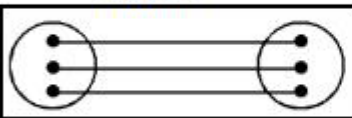
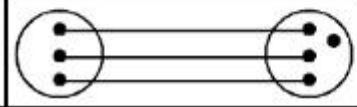
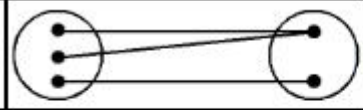
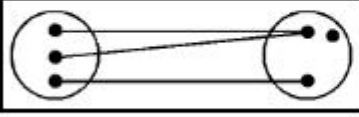
Group Id :	680191193

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 : 68019114883 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match **List I** with **List II**

LIST I		LIST II	
A.		I.	Neither surjective nor injective
B.		II.	Surjective but not injective
C.		III.	Injective but not surjective
D.		IV.	Injective and surjective

Choose the correct answer from the options given below:

Options :

68019157751. A-IV, B-II, C-III, D-I

68019157752. A-I, B-II, C-IV, D-III

68019157753. A-IV, B-III, C-II, D-I

68019157754. A-IV, B-III, C-I, D-II

Question Number : 2 Question Id : 68019114884 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A college awarded 38 medals for cricket, 15 for tennis and 20 for football. If these medals were bagged by a total of 58 students and only 3 students got medals for all the three games, then how many students received medals for exactly two of the three games?

Options :

68019157755. 9

68019157756. 18

68019157757. 12

68019157758. 6

Question Number : 3 Question Id : 68019114885 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If α and β are the roots of $ax^2 + bx + c = 0$, then the value of $\frac{1}{(a\alpha+b)^2} + \frac{1}{(a\beta+b)^2}$ is

Options :

68019157759. $\frac{b^2-2c}{c^2}$

68019157760. $\frac{b^2-2ac}{(ac)^2}$

68019157761. $\frac{b^2-2c}{c}$

68019157762. $\frac{b^2-2ac}{ac}$

Question Number : 4 Question Id : 68019114886 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let $A = \begin{bmatrix} 1 & 2 & 3 & 4 \\ 5 & 6 & 7 & 8 \\ 9 & 9 & 9 & 9 \\ 8 & 8 & 8 & 8 \end{bmatrix}$, then determinant of A =

Options :

68019157763. -1

68019157764. 0

68019157765. 1

68019157766. 72

Question Number : 5 Question Id : 68019114887 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In how many ways can we select four cards from an ordinary pack of playing cards so that two of them are of the same denomination and the remaining two are of some other same denomination?

Options :

68019157767. 78

68019157768. 150

68019157769. 715

68019157770. 5616

Question Number : 6 Question Id : 68019114888 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the coefficient of x^7 and x^8 in the expansion of $\left(2+\frac{x}{3}\right)^n$ are equal, then n is

Options :

68019157771. 56

68019157772. 55

68019157773. 45

68019157774. 15

Question Number : 7 Question Id : 68019114889 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The sum of all those terms of the arithmetic progression 2, 6, 10, 14, ... , 598 which are **not** divisible by 3, is equal to

Options :

68019157775. 30300

68019157776. 30000

68019157777. 29400

68019157778. 30600

Question Number : 8 Question Id : 68019114890 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The first two terms of a G.P. are x^{-3} and x^n, respectively. If x^{42} is the sixth term of the same progression, then n^2 is equal to

Options :

68019157779. 16

68019157780. 9

68019157781. 36

68019157782. 25

Question Number : 9 Question Id : 68019114891 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Suppose L is the line joining the points (0, 0) and (1, 2). If a line parallel to L meets the curve $y = 2x^2 + 3x + 1$ only at a single point P, then the point P is

Options :

68019157783. $\left(\frac{1}{4}, \frac{3}{8}\right)$

68019157784. $(2, 15)$

68019157785. $\left(\frac{-1}{4}, \frac{3}{8}\right)$

68019157786. $\left(\frac{-3}{4}, \frac{5}{16}\right)$

Question Number : 10 Question Id : 68019114892 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A manufacturer can sell x items at a price of ₹ $\left(5-\frac{x}{100}\right)$ each. The cost price of x items is ₹ $\left(\frac{x}{5}+500\right)$. The number of items he should sell to reach maximum profit is

Options :

68019157787. 100

68019157788. 240

68019157789. 500

68019157790. 480

Question Number : 11 Question Id : 68019114893 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The value of $\int_0^1 \log_e\left(\frac{1}{x}-1\right)dx$ is

Options :

68019157791. 0

68019157792. $\frac{1}{2}$

68019157793. 1

68019157794. 2

Question Number : 12 Question Id : 68019114894 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If $(1+\cos x)\frac{dy}{dx}-(y-3)\sin x=0$ and $y(0)=0$, then the value of $y\left(\frac{\pi}{2}\right)$ is

Options :

68019157795. -3

68019157796. 3

68019157797. 9

68019157798. 6

Question Number : 13 Question Id : 68019114895 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If a straight line passing through point P (3, –5) is such that its intercepted portion between the co-ordinate axes is bisected at P, then the equation of the line is

Options :

68019157799. $5x + 3y + 30 = 0$

68019157800. $5x - 3y - 30 = 0$

68019157801. $5x - 3y + 30 = 0$

68019157802. $-5x - 3y + 30 = 0$

Question Number : 14 Question Id : 68019114896 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The intercept on the line $x = y$ by the circle $x^2 + y^2 - 2y = 0$ is AB. The equation of the circle with AB as a diameter is

Options :

68019157803. $x^2 + y^2 + x + y = 0$

68019157804. $x^2 + y^2 - x - y = 0$

68019157805. $x^2 + y^2 - x + y = 0$

68019157806. $x^2 + y^2 + x - y = 0$

Question Number : 15 Question Id : 68019114897 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the foot of the perpendicular from the point (0, 0, 0) on the line $\frac{x+2}{5} = \frac{y+2}{2} = \frac{z+8}{3}$ is (a, b, c), then $a^2 + b^2 + c^2$ is

Options :

68019157807. 34

68019157808. 14

68019157809. 24

68019157810. 44

Question Number : 16 Question Id : 68019114898 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If the vectors $\overrightarrow{AB} = 3\hat{i} + 8\hat{k}$ and $\overrightarrow{AC} = 5\hat{i} - 2\hat{j} + 6\hat{k}$ are the sides of a triangle ABC, then the length of the median through A is

Options :

68019157811. $\sqrt{33}$

68019157812. $\sqrt{66}$

68019157813. $\sqrt{56}$

68019157814. $\sqrt{72}$

Question Number : 17 Question Id : 68019114899 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

If $\vec{a} = 6\hat{i} + 2\hat{j} - \lambda_1\hat{k}$, $\vec{b} = 3\hat{i} + (3 - \lambda_2)\hat{j} + 2\hat{k}$ and $\vec{c} = 2\hat{i} + (1 + \lambda_3)\hat{j} - 3\hat{k}$ are three vectors such that $\vec{a} = 3\vec{c}$ and $\vec{b}$ is perpendicular to $\vec{c}$ then $(\lambda_1, \lambda_2, \lambda_3)$ is

Options :

68019157815. $\left(9, 21, -\frac{1}{3}\right)$

68019157816. $\left(9, 3, -\frac{1}{3}\right)$

68019157817. $\left(\frac{1}{3}, -\frac{1}{3}, \frac{1}{3}\right)$

68019157818. $(3, 3, 1)$

Question Number : 18 Question Id : 68019114900 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let x_1, x_2, x_3, x_4, x_5 be observations with mean m and standard deviation s. Then, which of the following statements are correct:

A. Mean of the observations $x_1 + k, x_2 + k, x_3 + k, x_4 + k, x_5 + k$ is $m + 5k$

B. Mean of the observations $kx_1, kx_2, kx_3, kx_4, kx_5$ is km.

C. The standard deviation of the observations $x_1 + k, x_2 + k, x_3 + k, x_4 + k, x_5 + k$ is s.

D. The standard deviation of the observations $kx_1, kx_2, kx_3, kx_4, kx_5$ is k^5s.

Choose the correct answer from the options given below :

Options :

68019157819. A, B, C, D

68019157820. A, C only

68019157821. B, D only

68019157822. B, C only

Question Number : 19 Question Id : 68019114901 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Let the area of the region enclosed between the two circles $x^2 + y^2 = a^2$ and $(x-a)^2 + y^2 = a^2$ be $\frac{m}{3}\left(4\pi - 3\sqrt{3}\right)$ sq. units for some $a \geq 2$. If a is a root of $x^3 - 3x^2 - 6x + 8 = 0$, then

Options :

68019157823. $m^2 = a^4$

68019157824. $m^2 = a^3$

68019157825. $m^4 = a^2$

68019157826. $m^3 = a^2$

Question Number : 20 Question Id : 68019114902 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Suppose $\begin{vmatrix} f'(x) & f(x) \\ f''(x) & f'(x) \end{vmatrix} = 0$, where $f(x)$ is continuously differentiable function with $f'(x) \neq 0 \ \forall \ x \in \mathbb{R}$ and satisfies $f(0)=1$ and $f'(0)=4$. If $f(x) = e^{\lambda x} + \mu$, where $\lambda, \mu \in \mathbb{R}$ then the value of $\lambda^2+\mu^2$ is

Options :

68019157827. 2

68019157828. 4

68019157829. 8

68019157830. 16

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 : 68019114903 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The equations $ax^2 + bx + a = 0$, $(a, b \in \mathbb{R})$ and $x^3 - 2x^2 + 2x - 1 = 0$ have two common roots. Then the value of $a + b$ is _____.

Question Number : 22 Question Id : 68019114904 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let A be a matrix satisfying $A^3 = 3A + 2I$ where $A \neq nI$, $n \in \mathbb{Z}$. If $A^2 + \alpha A + \beta I = O$, then maximum value of $|\alpha + \beta|$ is _____.

Question Number : 23 Question Id : 68019114905 Question Type : SA Correct Marks : 4 Wrong Marks : 1

An equilateral triangle is inscribed in the ellipse $\frac{x^2}{3}+y^2=1$ such that one of the vertex of the triangle is (0, 1) and one of the altitude of the triangle is along the y-axis. If A is the area of the equilateral triangle. Then $625A^2$ is equal to _____.

Question Number : 24 Question Id : 68019114906 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The volume of the greatest cylinder that can be inscribed in a cone of height $\frac{3}{\sqrt[3]{\pi}}$ and semi-vertical angle 45° is _____.

Question Number : 25 Question Id : 68019114907 Question Type : SA Correct Marks : 4 Wrong Marks : 1

If the function $f(x)$ is defined as $f(x)=\begin{vmatrix} \frac{1}{1+e^{\sin x}} & \sin x \\ \sqrt{1-x^2} & 2 \end{vmatrix}$. Then the value of $\frac{1}{\pi}\int_{-\pi/2}^{\pi/2} f(x)\,dx$ is equal to_____.

Question Number : 26 Question Id : 68019114908 Question Type : SA Correct Marks : 4 Wrong Marks : 1

A line touches the curve $y=y(x)$ at a point (x, y) having slope $\frac{1+y^2}{1+x^2}$,where $x>0$. If $y(2)=1$, $y(3)=\frac{\alpha}{\beta}$ and $gcd\{\alpha, \beta\}=1$, then the value of $\alpha+\beta$ is _____.

Question Number : 27 Question Id : 68019114909 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The equation of the base of an equilateral triangle is $x+y=1$ and the opposite vertex has co-ordinates (–3, 2). The area of the triangle (in square units) is represented by A, then the value of $\sqrt{3}A$ is _____.

Question Number : 28 Question Id : 68019114910 Question Type : SA Correct Marks : 4 Wrong Marks : 1

Let R be the point (13, – 8, 10) and P(α, β, λ) be the image of the point Q (5, 2, 1) in the line $x-2=3-y=z+1$. Then the square of the area of the triangle PQR is _____.

Question Number : 29 Question Id : 68019114911 Question Type : SA Correct Marks : 4 Wrong Marks : 1

A hospital conducts a free eye check-up drive at 3 different locations A, B and C of a city. The number of people that came for test at A is thrice as much as that at B, and number of people that came at B is same as that at C. The results show that 4% population at A, 2% at B and 3% at C have poor eye-sight. If a person from the city goes for an army job and is found to have poor eye-sight, and the probability that he is not from location C is $\frac{p}{q}$, where $\frac{p}{q}$ is in simplest form, then value of $(p+q)$ is _____.

Question Number : 30 Question Id : 68019114912 Question Type : SA Correct Marks : 4 Wrong Marks : 1

The number of pairs (x, y) satisfying the equations $\sin x + \sin y = \sin(x+y)$ and $|x| + |y| = 1$ 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 : 68019114913 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In a certain word code, EXHAUST is written as CZFCSUR. How is NETWORK written in that code ?

Options :

68019157841. LCVYQTI

68019157842. LGVYQTM

68019157843. LGRYMTI

68019157844. LCRYQTM

Question Number : 32 Question Id : 68019114914 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In a code language, if "BRICK" is written as "CQJBL", then "CEMENT" is _____

Options :

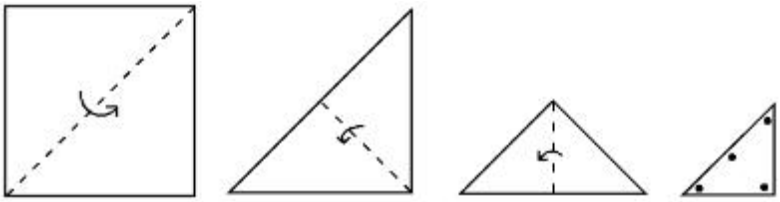
68019157845. DDOFOS

68019157846. DDODOS

68019157847. DDNDOS

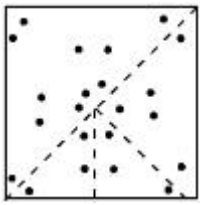
68019157848. DDNFOS

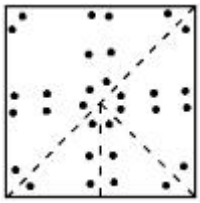
Question Number : 33 Question Id : 68019114915 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

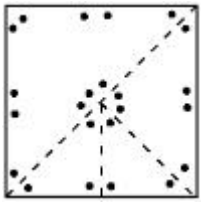


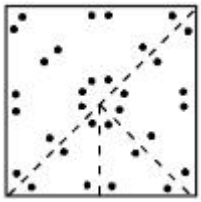
When the paper is folded in a given pattern and is cut at the end. Identify which pattern is formed when the paper is unfold?

Options :

68019157849. 

68019157850. 

68019157851. 

68019157852. 

Question Number : 34 Question Id : 68019114916 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I (Components/Material)		LIST II (Functions)	
A.	Cement	I.	Load Bearing
B.	Window	II.	Tensile strength
C.	Foundation	III.	Setting time
D.	Steel	IV.	Glazing

Choose the correct answer from the options given below:

Options :

68019157853. A-I, B-IV, C-III, D-II

68019157854. A-I, B-II, C-III, D-IV

68019157855. A-III, B-IV, C-I, D-II

68019157856. A-IV, B-III, C-II, D-I

Question Number : 35 Question Id : 68019114917 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I(struchture)		LIST II(places)	
A.	Humayun's Tomb	I.	Gujarat
B.	Bibi Ka Maqbara	II.	New Delhi
C.	Hussain Doshi Gufa	III.	Maharashtra
D.	Group of monuments, Mahabalipuram	IV.	Tamilnadu

Choose the correct answer from the options given below:

Options :

68019157857. A-II, B-IV, C-I, D-III

68019157858. A-I, B-III, C-II, D-IV

68019157859. A-II, B-III, C-I, D-IV

68019157860. A-II, B-I, C-IV, D-III

Question Number : 36 Question Id : 68019114918 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I		LIST II	
A.	Stairs	I.	Key stone
B.	Door	II.	Toothing
C.	Arch	III.	Jamb
D.	Brick work	IV.	Tread

Choose the correct answer from the options given below:

Options :

68019157861. A-IV, B-III, C-I, D-II

68019157862. A-II, B-I, C-III, D-IV

68019157863. A-I, B-III, C-IV, D-II

68019157864. A-III, B-IV, C-II, D-I

Question Number : 37 Question Id : 68019114919 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Give below are two statements :

Statement I : A partition wall is defined as an internal wall whose function is to divide the space within the building.

Statement II : Partition wall could be load bearing or non-load bearing.

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

Options :

68019157865. Both Statement I and Statement II are correct

68019157866. Both Statement I and Statement II are incorrect

68019157867. Statement I is correct but Statement II is incorrect

68019157868. Statement I is incorrect but Statement II is correct

Question Number : 38 Question Id : 68019114920 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R** :

Assertion A : Social integration at work place is necessary.

Reason R : There are many backward classes in society.

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

Options :

68019157869. Both **A** and **R** are true and **R** is the correct explanation of **A**

68019157870. Both **A** and **R** are true but **R** is NOT the correct explanation of **A**

68019157871. **A** is true but **R** is false

68019157872. **A** is false but **R** is true

Question Number : 39 Question Id : 68019114921 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Primary colours are_____.

Options :

68019157873. Red, Blue, Yellow

68019157874. Red, Green, Blue

68019157875. Red, Violet, Yellow

68019157876. Red, Green, Yellow

Question Number : 40 Question Id : 68019114922 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The stairs kept in motion by a revolving drum is known as a _____.

Options :

68019157877. Escalator

68019157878. Lift

68019157879. Elevator

68019157880. Revolving stairs

Question Number : 41 Question Id : 68019114923 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following structure does not have a dome?

Options :

68019157881. Gol Gumbaz

68019157882. Avicii Arena

68019157883. St. Paul's Cathedral

68019157884. The Shard

Question Number : 42 Question Id : 68019114924 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below is the famous temple in India. Identify the style of temple architecture adopted in the temple.



Options :

68019157885. Nagara

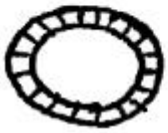
68019157886. Dravidian

68019157887. Vesara

68019157888. Orissan

Question Number : 43 Question Id : 68019114925 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I(Plan)		LIST II(Building Name)	
A.		I.	Taj Mahal
B.		II.	Qutub Minar, New Delhi
C.		III.	Matri Mandir, Auroville
D.		IV.	Sanchi Stupa

Choose the correct answer from the options given below:

Options :

68019157889. A-IV, B-II, C-III, D-I

68019157890. A-II, B-III, C-IV, D-I

68019157891. A-III, B-II, C-IV, D-I

68019157892. A-IV, B-III, C-II, D-I

Question Number : 44 Question Id : 68019114926 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The botanical name of "MANGO" tree is

Options :

68019157893. Azadirachita Indica

68019157894. Mangifera Indica

68019157895. Delonux Indica

68019157896. Delonux Regia

Question Number : 45 Question Id : 68019114927 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Scientific study of human body measurements :

Options :

68019157897. Depth Perception

68019157898. Anthrology

68019157899. Axenometry

68019157900. Anthropometry

Question Number : 46 Question Id : 68019114928 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

FAR stands for

Options :

68019157901. Facade Area Ratio

68019157902. Floor Area Ratio

68019157903. Fire Accessible Ramp

68019157904. Fire Arch Ratio

Question Number : 47 Question Id : 68019114929 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

On an engineer scale, 1 cm = 10 m. Identify the representative fraction (R.F.)

Options :

68019157905. 1/100

68019157906. 1/10

68019157907. 1/1000

68019157908. 1/10000

Question Number : 48 Question Id : 68019114930 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the iconic Landmark :



Options :

68019157909. Taipei 101

68019157910. One World Trade Center

68019157911. Sydney Opera House

68019157912. Shanghai World Financial Center

Question Number : 49 Question Id : 68019114931 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the name of the Landmark :



Options :

68019157913. Crystal Palace, London

68019157914. The Louvre, Paris

68019157915. German Pavilion for World exibition, Barcelona

68019157916. Vitra Design Museum, Basel

Question Number : 50 Question Id : 68019114932 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the famous Monument in the given picture.



Options :

68019157917. Chand Baoli

68019157918. Stepped Pyramid

68019157919. Golden Lily Pond

68019157920. Airavates-vara Temple

Question Number : 51 Question Id : 68019114933 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

A man is facing towards East and turns through 45° anti clockwise, again 180° anticlockwise and than turns through 270° clockwise. In which direction is he facing now?

Options :

68019157921. South-East

68019157922. South-West

68019157923. South

68019157924. North-East

Question Number : 52 Question Id : 68019114934 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The 'lightness or darkness' of a colour is defined as :

Options :

68019157925. Hue

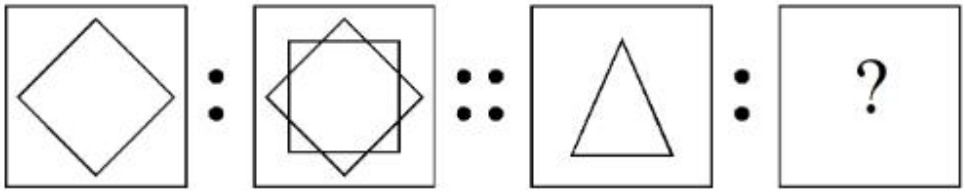
68019157926. Brightless

68019157927. Dullness

68019157928. Value

Question Number : 53 Question Id : 68019114935 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

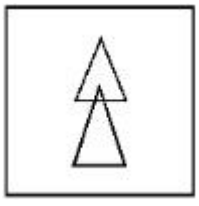
Select a figure amongst the answer figures which will continue the same series or pattern as established by the problem figures.

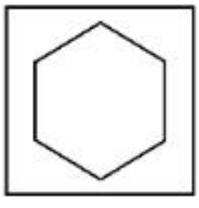


Options :

68019157929. 

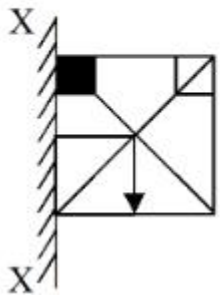
68019157930. 

68019157931. 

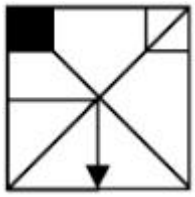
68019157932. 

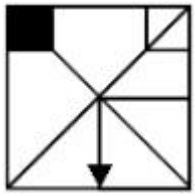
Question Number : 54 Question Id : 68019114936 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

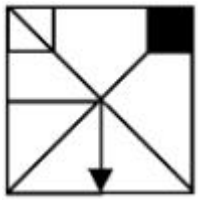
Identify the true mirror image of the figure amongst the answer figures with respect to-X-X

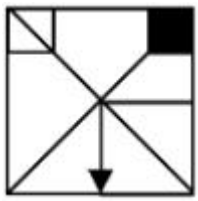


Options :

68019157933. 

68019157934. 

68019157935. 

68019157936. 

Question Number : 55 Question Id : 68019114937 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the mirror image of given word :

PROGRESS

Options :

68019157937. PROGRESS

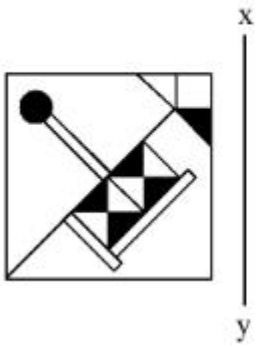
68019157938. ƧSƎЯGOЯꟼ

68019157939. ƧƧƎЯGOЯꟼ

68019157940. ƧƧƎЯGOЯꟼ

Question Number : 56 Question Id : 68019114938 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the correct mirror image of the given figure along x-y axis :



Options :

68019157941. 

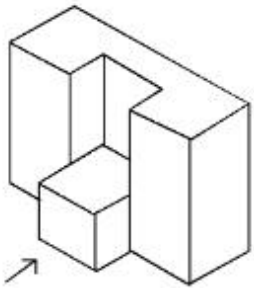
68019157942. 

68019157943. 

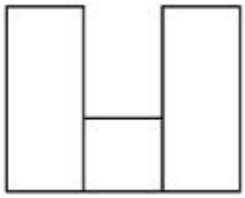
68019157944. 

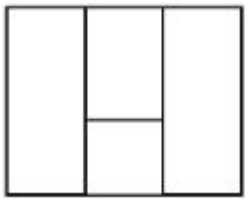
Question Number : 57 Question Id : 68019114939 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

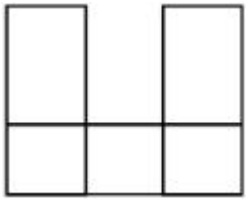
The question figure shows the 3D view of an object. Identify the correct view of the object looking in the direction of arrow.

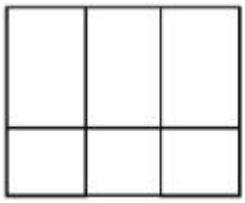


Options :

68019157945. 

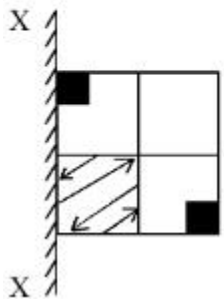
68019157946. 

68019157947. 

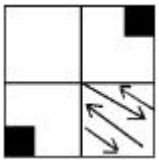
68019157948. 

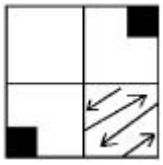
Question Number : 58 Question Id : 68019114940 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

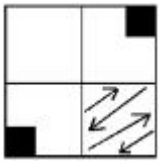
Identify the true mirror image of the figure amongst the answer figures with respect to X-X :



Options :

68019157949. 

68019157950. 

68019157951. 

68019157952. 

Question Number : 59 Question Id : 68019114941 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

'Kuchipudi' is a unique dance from which state ?

Options :

68019157953. Madhya Pradesh

68019157954. Tamil Nadu

68019157955. Kerala

68019157956. Andhra Pradesh

Question Number : 60 Question Id : 68019114942 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the below given material is not a plaster type ?

Options :

68019157957. Gypsum

68019157958. Lime

68019157959. Cement

68019157960. MDF

Question Number : 61 Question Id : 68019114943 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who initiated the construction of Qutub-Minar, Delhi?

Options :

68019157961. Muhammad Quli Qutub Shah

68019157962. Muhammad Azam Shah

68019157963. Qutub-Ud-din-Aibak

68019157964. Iltutmish

Question Number : 62 Question Id : 68019114944 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

When is the world Environment Day celebrated?

Options :

68019157965. 5 June

68019157966. 10 July

68019157967. 22 March

68019157968. 15 August

Question Number : 63 Question Id : 68019114945 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Visual weight is associated with :

Options :

68019157969. Emphasis

68019157970. Texture

68019157971. Balance

68019157972. Pattern

Question Number : 64 Question Id : 68019114946 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Lines those branch off of a central point are referred to as :

Options :

68019157973. Rhythm

68019157974. Repetition

68019157975. Radiation

68019157976. Proportion

Question Number : 65 Question Id : 68019114947 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

V7 concept of Chandigarh city is associated with which architect?

Options :

68019157977. Patric Geddes

68019157978. Le Corbusier

68019157979. Frank O Gehri

68019157980. Zaha Hadid

Question Number : 66 Question Id : 68019114948 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who is known as "Father of contemporary architecture" ?

Options :

68019157981. Le Corbusier

68019157982. Louis Sullivan

68019157983. Frank Gehry

68019157984. Norman Foster

Question Number : 67 Question Id : 68019114949 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who designed 'India Gate'?

Options :

68019157985. Edwin Luytens

68019157986. Raj-Rewal

68019157987. George Writtet

68019157988. Norman Foster

Question Number : 68 Question Id : 68019114950 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who among the following architects has not won the Pritzker prize till 2019?

Options :

68019157989. B.V. Doshi

68019157990. I.M. Pie

68019157991. Arata Isozki

68019157992. Moshe Safdie

Question Number : 69 Question Id : 68019114951 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Terra cotta is a type of earthen work which is processed by :

Options :

68019157993. Burning at high temperature

68019157994. Mixing with lime

68019157995. Compacting with pressure

68019157996. Drying in the Sun

Question Number : 70 Question Id : 68019114952 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which building material is primarily used as a building material for the Great wall of China?

Options :

68019157997. Timber

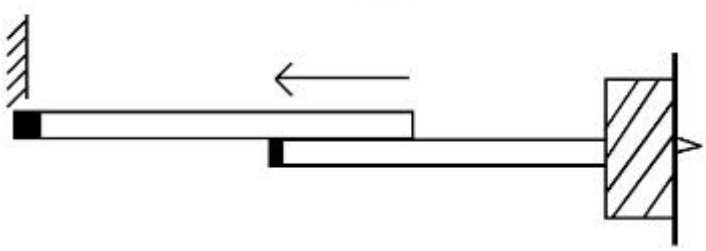
68019157998. Steel

68019157999. Brick

68019158000. Concrete

Question Number : 71 Question Id : 68019114953 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Identify the architectural symbol represented in the given figure.



Options :

68019158001. Window

68019158002. Sliding door

68019158003. Revolving door

68019158004. Rolling shutter

Question Number : 72 Question Id : 68019114954 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Percentage of lime content in ordinary Portland cement is

Options :

1. 30% – 40%

2. 40% – 50%

3. 60% – 70%

4. 70% – 80%

Question Number : 73 Question Id : 68019114955 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Sill Level is associated with

Options :

68019158009. Roof

68019158010. Column

68019158011. Window

68019158012. Staircase

Question Number : 74 Question Id : 68019114956 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What is the terminology for the vertical portion between each tread of the stairs?

Options :

68019158013. Winder

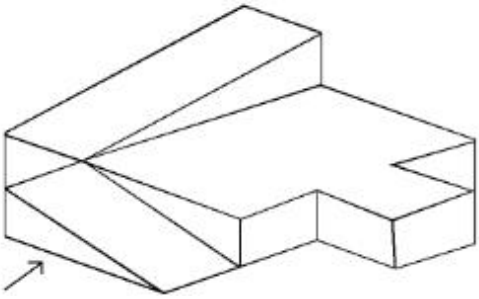
68019158014. Riser

68019158015. Nosing

68019158016. Going

Question Number : 75 Question Id : 68019114957 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

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

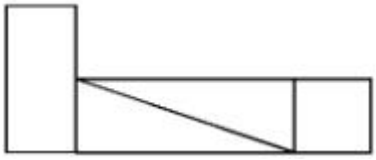


Options :

68019158017. 

68019158018. 

68019158019. 

68019158020. 

Question Number : 76 Question Id : 68019114958 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Complete the number sequence :

18, 27, 38, 51, ..., 83

Options :

68019158021. 62

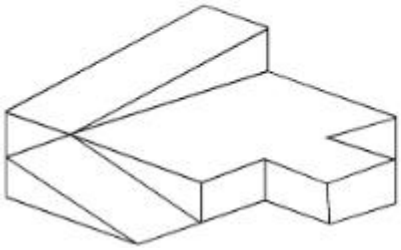
68019158022. 66

68019158023. 64

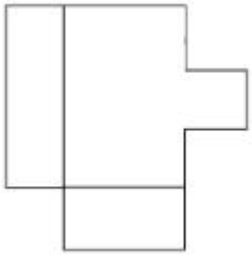
68019158024. 72

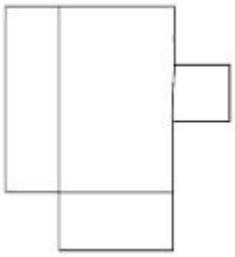
Question Number : 77 Question Id : 68019114959 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

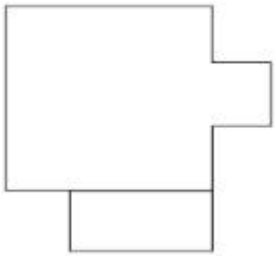
In the question figure a-3-D object is given, Identify the correct top view of the object amongst the answer figures.

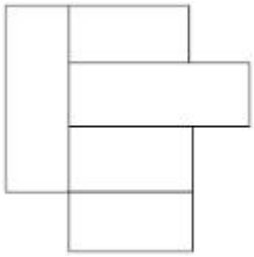


Options :

68019158025. 

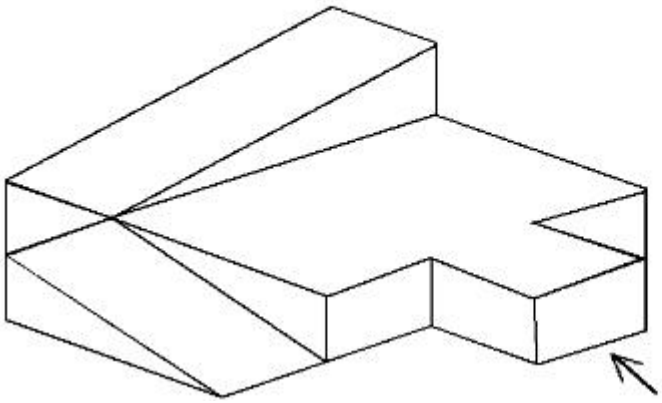
68019158026. 

68019158027. 

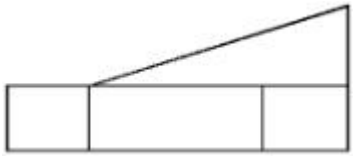
68019158028. 

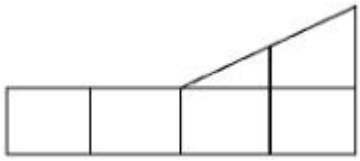
Question Number : 78 Question Id : 68019114960 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

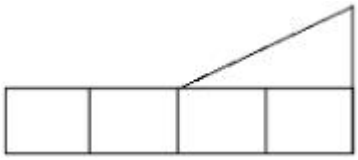
In question figure - 3D object is given, Identify the correct view of the object looking in the direction of the arrow, amongst the answer figures.

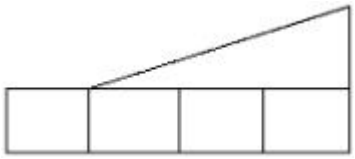


Options :

68019158029. 

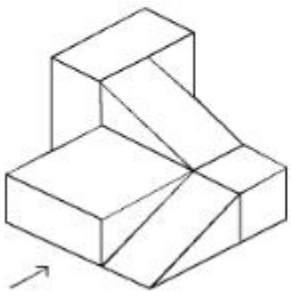
68019158030. 

68019158031. 

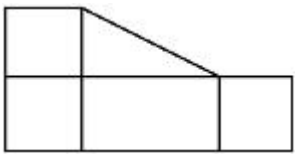
68019158032. 

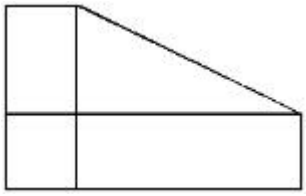
Question Number : 79 Question Id : 68019114961 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

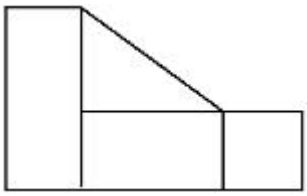
In question figure a 3-D object is given. Identify the correct view of the object looking in the direction of arrow, amongst the answer figures.

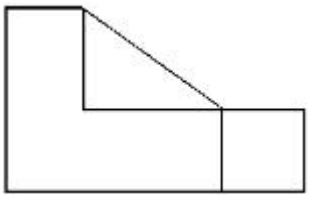


Options :

68019158033. 

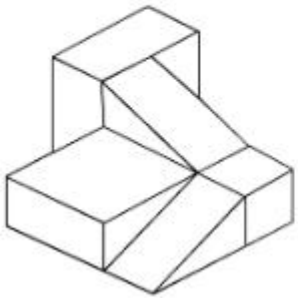
68019158034. 

68019158035. 

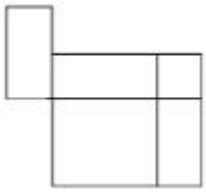
68019158036. 

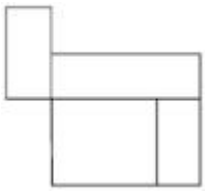
Question Number : 80 Question Id : 68019114962 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

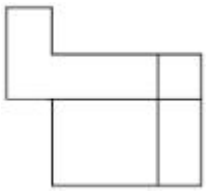
In the question figure a 3-D object is given. Identify the correct top view of the object amongst the answer figures.

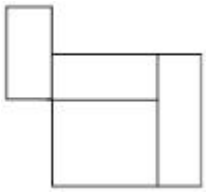


Options :

68019158037. 

68019158038. 

68019158039. 

68019158040. 

Planning

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

Question Number : 81 Question Id : 68019114963 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Urban heat island is _____ its surrounding rural areas.

Options :

68019158041. Colder than

68019158042. Neutral to

68019158043. Warmer than

68019158044. Having same temperature with

Question Number : 82 Question Id : 68019114964 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I (Cities)		LIST II (Planner)	
A.	Jaipur	I.	O. Konigsberger
B.	Gandhi Nagar	II.	Doxiadis
C.	Islamabad	III.	H.K.Mewada
D.	Bhubneswar	IV.	Vidyadhar

Choose the correct answer from the options given below:

Options :

68019158045. A-I, B-II, C-III, D-IV

68019158046. A-IV, B-III, C-II, D-I

68019158047. A-I, B-III, C-II, D-IV

68019158048. A-IV, B-II, C-III, D-I

Question Number : 83 Question Id : 68019114965 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statement:

Statement I : On November 8, 2016, demonetization was declared in India.

Statement II : On that day, Prime Minister of India announced the demonetization of Rs. 500 & Rs. 1000 notes.

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

Options :

68019158049. Both Statement I and Statement II are true

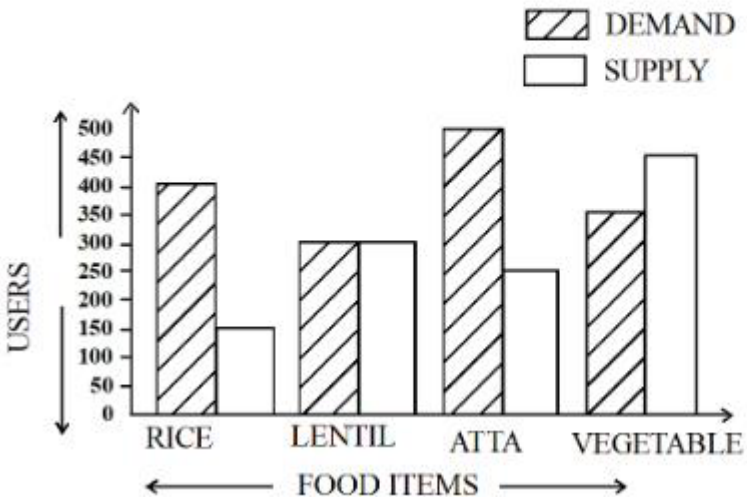
68019158050. Both Statement I and Statement II are false

68019158051. Statement I is true but Statement II is false

68019158052. Statement I is false but Statement II is true

Question Number : 84 Question Id : 68019114966 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The given diagram shows the demand & supply of food items amongst users. Identify which food item was least supply among all.



Options :

68019158053. Lentil

68019158054. Vegetable

68019158055. Rice

68019158056. Atta

Question Number : 85 Question Id : 68019114967 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

In which five year plan period was the slogan 'Garibi hatao' given?

Options :

68019158057. First five year plan

68019158058. Third five year plan

68019158059. Ninth five year plan

68019158060. Fifth five year plan

Question Number : 86 Question Id : 68019114968 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Which of the following is considered to be the first planned city of independent India?

Options :

68019158061. Gandhinagar

68019158062. New Delhi

68019158063. Chandigarh

68019158064. Jamshedpur

Question Number : 87 Question Id : 68019114969 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The full form of "NITI" in NITI aayog is

Options :

68019158065. National Institution for transforming India

68019158066. National Institution for transferring India

68019158067. National Institution for training India

68019158068. National Institution for tourism India

Question Number : 88 Question Id : 68019114970 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who was the President of Indian National Congress at the time of independence of India?

Options :

68019158069. Jawaharlal Nehru

68019158070. Mahatma Gandhi

68019158071. J.B. Kripalani

68019158072. Moulana Abdul Kalam Azad

Question Number : 89 Question Id : 68019114971 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Match List I with List II

LIST I (Vehicle)		LIST II (Manufacture)	
A.	THAR	I.	Volkswagen
B.	Yaris	II.	Mahindra & Mahindra
C.	I 20	III.	Toyota Motor
D.	Vento	IV.	Hyundai

Choose the correct answer from the options given below:

Options :

68019158073. A-II, B-III, C-IV, D-I

68019158074. A-III, B-II, C-IV, D-I

68019158075. A-IV, B-II, C-III, D-I

68019158076. A-I, B-II, C-III, D-IV

Question Number : 90 Question Id : 68019114972 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : The full form of NCR is the National Capital Region.

Reason R : 'NCR' in India is the designation for the conurbation which includes New Delhi with surrounding urban areas of neighbouring states of Haryana, Uttar Pradesh and Rajasthan.

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

Options :

68019158077. Both **A** and **R** are correct and **R** is the correct explanation of **A**

68019158078. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**

68019158079. **A** is correct but **R** is not correct

68019158080. **A** is not correct but **R** is correct

Question Number : 91 Question Id : 68019114973 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Most of the energy used on Earth today originally come from which of these sources?

Options :

68019158081. Sun

68019158082. Moon

68019158083. Ocean

68019158084. Soil

Question Number : 92 Question Id : 68019114974 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The 74^{th} amendment of the constitution is related to _____.

Options :

68019158085. Political party changed

68019158086. Urban local institutions

68019158087. Panchayati Raj

68019158088. Right to education

Question Number : 93 Question Id : 68019114975 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Dandaka form of settlement layout is basically a _____.

A. Radial pattern
B. Grid Iron pattern
C. Star pattern
D. Octagonal pattern

Choose the most appropriate answer from the options given below:

Options :

68019158089. A only

68019158090. C only

68019158091. D only

68019158092. B only

Question Number : 94 Question Id : 68019114976 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements: one is labelled as **Assertion A** and the other is labelled as **Reason R**

Assertion A : Between 1921-1922, the production of tea and coffee grew up.

Reason R : As the non-cooperation moved into economic sphere and foreign goods were boycotted and burnt.

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

Options :

68019158093. Both **A** and **R** are correct and **R** is the correct explanation of **A**

68019158094. Both **A** and **R** are correct but **R** is NOT the correct explanation of **A**

68019158095. **A** is correct but **R** is not correct

68019158096. **A** is not correct but **R** is correct

Question Number : 95 Question Id : 68019114977 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Who was the first Vice-chairman of NITI Aayog?

Options :

68019158097. Rajiv Sharma

68019158098. Raghu nandan

68019158099. Arvind Panagariya

68019158100. Amitabh Kant

Question Number : 96 Question Id : 68019114978 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Name the Entrepreneur of India who set factories during colonical period

A. Dwarakanath Tagore
B. Dinshoo Petit
C. Dhirubhai Ambani
D. Jamset Ji Nusserwanji Tata
E. Seth Hukumchand

Choose the correct answer from the options given below:

Options :

68019158101. A, B, C, D only

68019158102. A, B, D, E only

68019158103. A, C, D, E only

68019158104. A, E, B, C only

Question Number : 97 Question Id : 68019114979 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

What are the three R's those are used to save the environment which includes forest?

Options :

68019158105. Reserve, Reduce & Recycle

68019158106. Reuse, Reserve & Reduce

68019158107. Reduce, Reuse & Recycle

68019158108. Reserve, Reuse & Reduce

Question Number : 98 Question Id : 68019114980 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

The 'National Development Council' was constituted on

Options :

68019158109. 16^{th} August 2015

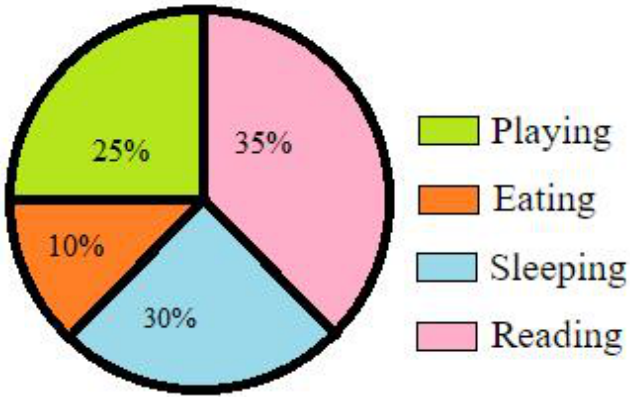
68019158110. 1st April 1950

68019158111. 6th August 1952

68019158112. 16th August 2010

Question Number : 99 Question Id : 68019114981 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Following pie chart gives a percentage distribution of time spent by a student on various activities in a day. How much time she spent in playing every day?



Options :

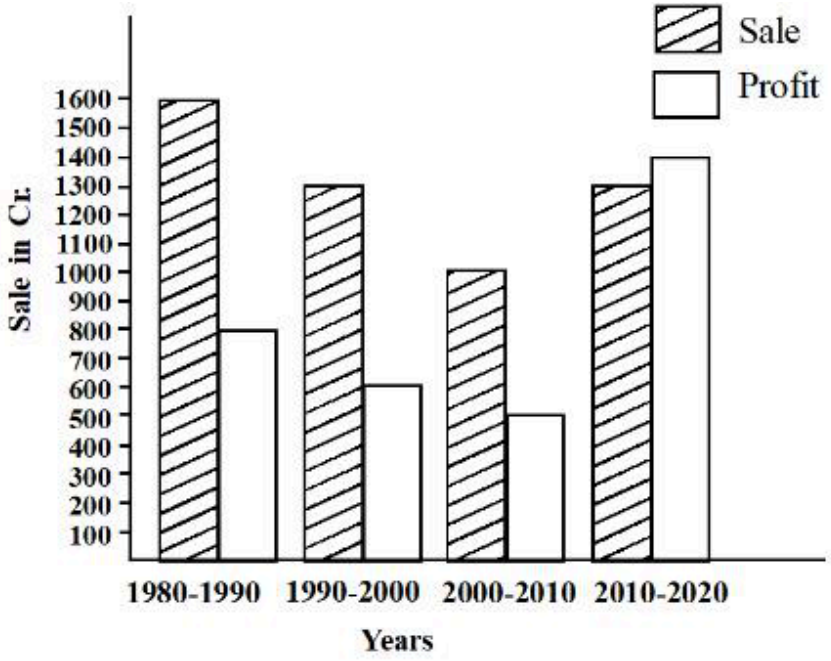
68019158113. 5 hrs

68019158114. 6 hrs

68019158115. 7 hrs

68019158116. 8 hrs

Question Number : 100 Question Id : 68019114982 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



The given diagram shows the sales of a company with respect to years. Which of the following is correct?

A. Company made minimum profit in 2010-2020.
B. Company made more than 500 crore profit in 2000-2010.
C. In 1990-2000, company has reached highest sale.
D. In, 2010-2020, company made highest profit.

Choose the correct answer from the options given below:

Options :

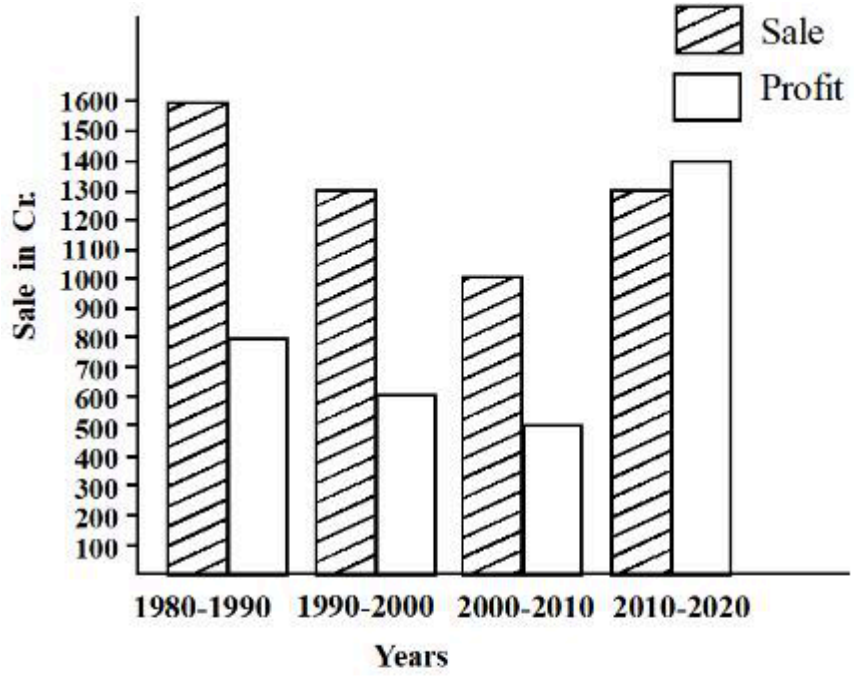
68019158117. A

68019158118. B

68019158119. C

68019158120. D

Question Number : 101 Question Id : 68019114983 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In which year the sales of company is minimum ?

A. 2000-2010
B. 1990-2000
C. 1980-1990
D. 2010-2020

Choose the most appropriate answer from the options given below:

Options :

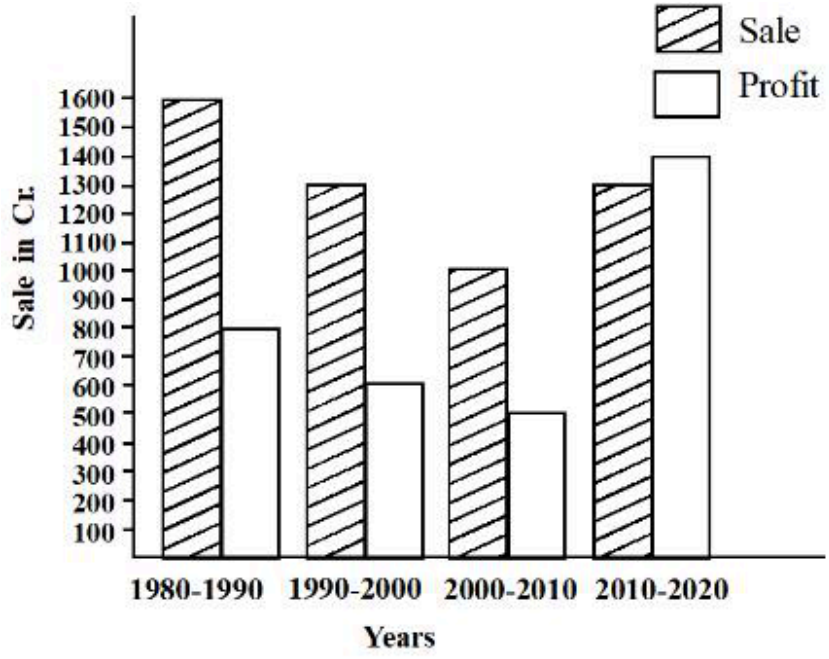
68019158121. B only

68019158122. C only

68019158123. A only

68019158124. D only

Question Number : 102 Question Id : 68019114984 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



Given below are two statements:

Statement I : In 2010-2020 company made maximum profit and minimum sale.

Statement II : In 1980-1990 company made 50% profit of its total sale.

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

Options :

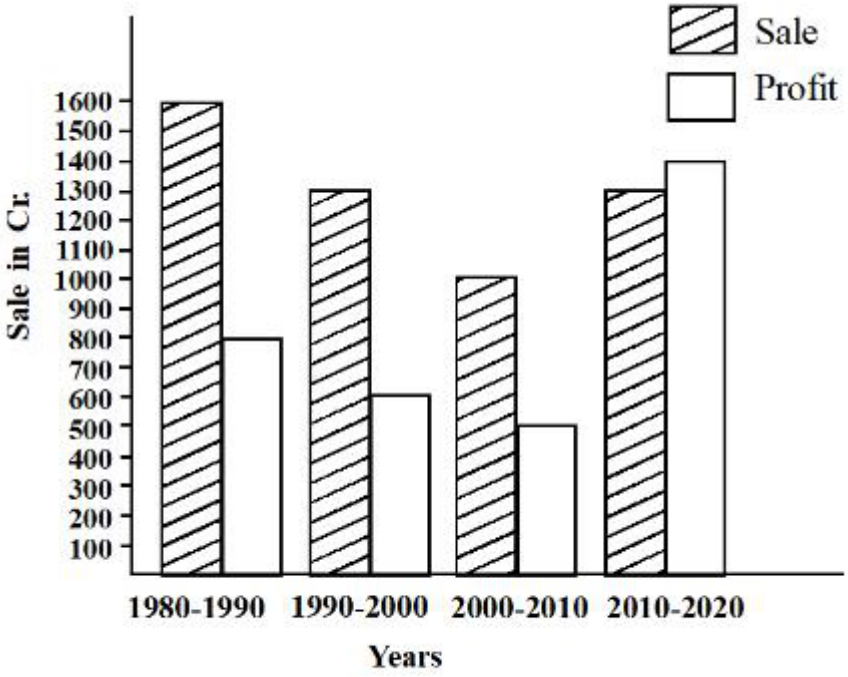
68019158125. Both Statement I and Statement II are correct

68019158126. Both Statement I and Statement II are incorrect

68019158127. Statement I is correct but Statement II is incorrect

68019158128. Statement I is incorrect but Statement II is correct

Question Number : 103 Question Id : 68019114985 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1



In 1990-2000 company profit percentage is

Options :

68019158129. 46.15%

68019158130. 50%

68019158131. 47%

68019158132. 45%

Question Number : 104 Question Id : 68019114986 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

Given below are two statements:

Statement I : The last five year plan executed is 12^{th} plan. It was launched in 2012.

Statement II : 12^{th} five year plan was for faster, sustainable and more inclusive growth.

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

Options :

68019158133. Both Statement I and Statement II are true

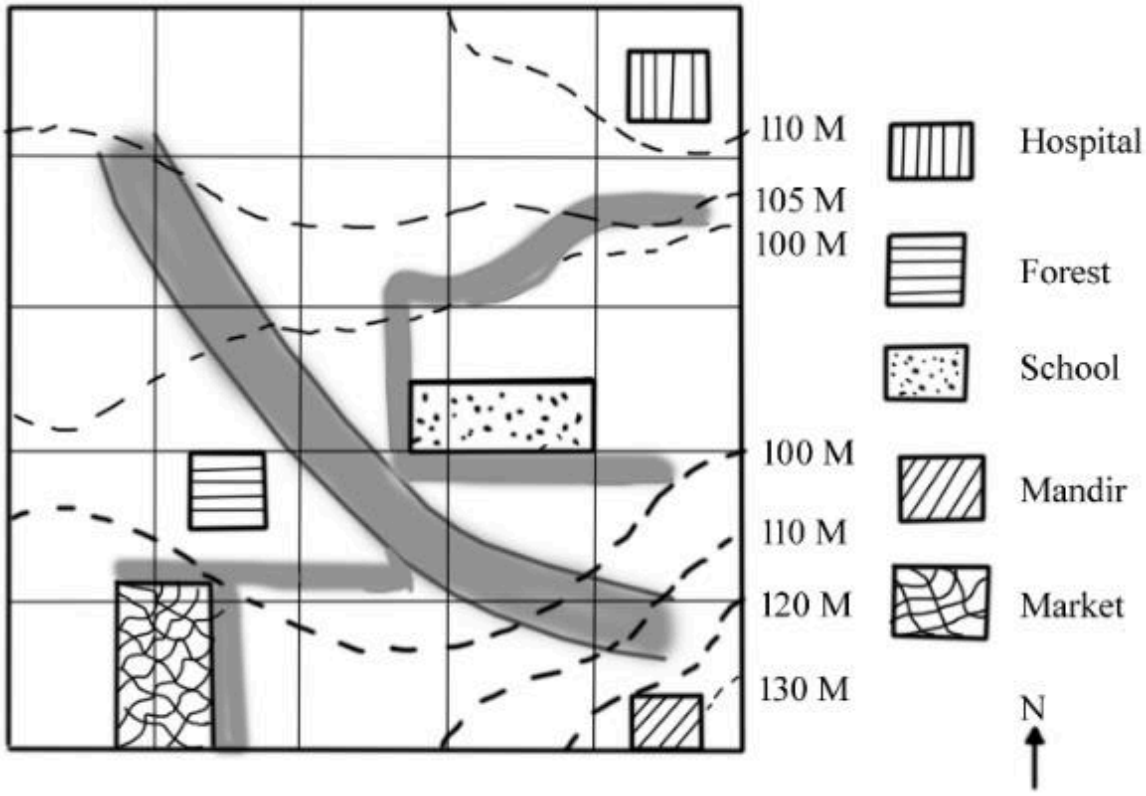
68019158134. Both Statement I and Statement II are false

68019158135. Statement I is true but Statement II is false

68019158136. Statement I is false but Statement II is true

Question Number : 105 Question Id : 68019114987 Question Type : MCQ Correct Marks : 4 Wrong Marks : 1

From the given diagram find out that mandir is located at which direction to forest?



Options :

68019158137. North West

68019158138. East

68019158139. South West

68019158140. South East