

## JEE MAIN 2019

Application No	
Candidate Name	
Roll No.	
Test Date	08/01/2019
Test Time	9:30 AM - 12:30 PM
Subject	Paper II EH

Section : Mathematics

Q.1 Let  $m$  and  $k$  be positive integers ( $m \neq k$ ).  
Then

$$\lim_{n \rightarrow \infty} n \left\{ \left(1 + \frac{1}{n}\right)^m + \left(1 + \frac{2}{n}\right)^m + \dots + \left(1 + \frac{k}{n}\right)^m - k \right\} \text{ is :}$$

- Options
1. 0
  2.  $km$
  3.  $\frac{m(m+1)k}{2}$
  4.  $\frac{k(k+1)}{2}m$

Question Type : MCQ

Question ID : 41652911055

Option 1 ID : 41652943438

Option 2 ID : 41652943441

Option 3 ID : 41652943440

Option 4 ID : 41652943439

Status : Not Answered

Chosen Option : --

Q.2 The function  $f : \mathbb{R} \rightarrow \mathbb{R}$ , is given by

$$f(x) = \frac{x}{1 + |x|}, \text{ is :}$$

- Options
1. onto but not one-one
  2. neither one-one nor onto
  3. one-one and onto
  4. one-one but not onto

Question Type : MCQ

Question ID : 41652911046

Option 1 ID : 41652943403

Option 2 ID : 41652943405

Option 3 ID : 41652943402

Option 4 ID : 41652943404

Status : Not Answered

Chosen Option : --

Q.3

$$\text{For } f(x) = \begin{cases} x \frac{e^{1/x} - e^{-1/x}}{e^{1/x} + e^{-1/x}}, & x \neq 0 \\ 0, & x = 0 \end{cases}$$

- Options
1.  $f$  is not differentiable at 0

2.  $f$  is not continuous at 0

3.  $f'(0) = 1$

4.  $f'(0) = 0$

Question Type : MCQ

Question ID : 41652911056

Option 1 ID : 41652943445

Option 2 ID : 41652943444

Option 3 ID : 41652943442

Option 4 ID : 41652943443

Status : Not Answered

Chosen Option : --

Q.4 Two parallel chords are drawn on the same side of the centre of a circle of radius 20. It is found that they subtend  $60^\circ$  and  $120^\circ$  angles at the centre of the circle. Then the perpendicular distance between the chords is :

Options

1.  $5(\sqrt{3} + 1)$

2.  $10(\sqrt{2} - 1)$

3.  $5(\sqrt{3} - 1)$

4.  $10(\sqrt{3} - 1)$

Question Type : MCQ

Question ID : 41652911074

Option 1 ID : 41652943517

Option 2 ID : 41652943514

Option 3 ID : 41652943515

Option 4 ID : 41652943516

Status : Not Answered

Chosen Option : --

Q.5 The compound statement

$$(\sim C \wedge A \wedge B) \vee (\sim C \wedge \sim A \wedge B) \vee (C \wedge B)$$

is equivalent to :

Options 1. A

2.  $\sim A$

3. C

4. B

Question Type : MCQ

Question ID : 41652911075

Option 1 ID : 41652943518

Option 2 ID : 41652943519

Option 3 ID : 41652943521

Option 4 ID : 41652943520

Status : Answered

Chosen Option : 4

Q.6

If for positive real numbers  $a$ ,  $b$  and  $c$ , the system of linear equations  
 $x = a(y + z)$ ,  $y = b(z + x)$ ,  $z = c(x + y)$   
 has non-trivial solutions, then

$\frac{1}{1+a} + \frac{1}{1+b} + \frac{1}{1+c}$  is equal to :

Options

1.  $\frac{3}{2}$
2. 3
3.  $\frac{1}{2}$
4. 2

Question Type : MCQ

Question ID : 41652911050

Option 1 ID : 41652943418

Option 2 ID : 41652943419

Option 3 ID : 41652943421

Option 4 ID : 41652943420

Status : Not Answered

Chosen Option : --

Q.7 A real valued function

$f(x) = C \log_e |x| + Dx^3 + x$ ,  $x \neq 0$ , where  $C$  and  $D$  are constants, has critical points at  $x = -1$  and  $x = 2$ . Then the ordered pair  $(C, D)$  is :

Options

1.  $\left(\frac{2}{3}, -\frac{1}{9}\right)$
2.  $\left(\frac{1}{9}, -\frac{2}{3}\right)$
3.  $\left(-\frac{2}{3}, \frac{1}{9}\right)$
4.  $\left(-\frac{1}{9}, \frac{2}{3}\right)$

Question Type : MCQ

Question ID : 41652911058

Option 1 ID : 41652943451

Option 2 ID : 41652943452

Option 3 ID : 41652943453

Option 4 ID : 41652943450

Status : Not Answered

Chosen Option : --

Q.8 Let  $P_1, P_2$  be any two points on a circle of radius  $r$  centred at the origin  $O$ , such that

$\angle P_1OP_2 = \frac{\pi}{3}$ . If  $P$  is the point of

intersection of the tangents to the circle at  $P_1$  and  $P_2$ , then the locus of the point  $P$ , is :

Options 1.  $4(x^2 + y^2) = 3r^2$

2.  $x^2 + y^2 = 3r^2$

3.  $x^2 + y^2 = 4r^2$

4.  $3(x^2 + y^2) = 4r^2$

Question Type : MCQ

Question ID : 41652911063

Option 1 ID : 41652943471

Option 2 ID : 41652943473

Option 3 ID : 41652943472

Option 4 ID : 41652943470

Status : Not Answered

Chosen Option : --

Q.9 Let C be the circle whose diameter is the line segment formed by the line  $3x + 2y = 6$  intercepted by the coordinate axes. Then C also passes through the point :

Options 1. (2, 2)

2. (1, 1)

3. (2, 3)

4. (3, 2)

Question Type : MCQ

Question ID : 41652911067

Option 1 ID : 41652943489

Option 2 ID : 41652943486

Option 3 ID : 41652943488

Option 4 ID : 41652943487

Status : Not Answered

Chosen Option : --

Q.10 Let  $S_n$  be the sum of the first n - terms of the series

$$1^2 + 2 \cdot 5^2 + 3^2 + 2 \cdot 7^2 + 5^2 + 2 \cdot 9^2 + \dots$$

If  $S_{20} = 20A$ , then A is equal to :

Options 1. 2019

2. 1851

3. 1951

4. 2001

Question Type : MCQ

Question ID : 41652911054

Option 1 ID : 41652943437

Option 2 ID : 41652943434

Option 3 ID : 41652943435

Option 4 ID : 41652943436

Status : Not Answered

Chosen Option : --

Q.11

If  $\cos(\alpha + \beta) = \frac{4}{5}$  and  $\sin(\alpha - \beta) = \frac{5}{13}$ ,

where  $\alpha, \beta \in \left(0, \frac{\pi}{4}\right)$ , then the value of

$\tan 2\alpha$  is :

- Options
1.  $\frac{56}{33}$
  2.  $\frac{54}{33}$
  3.  $\frac{58}{33}$
  4.  $\frac{55}{33}$

Question Type : MCQ

Question ID : 41652911073

Option 1 ID : 41652943510

Option 2 ID : 41652943511

Option 3 ID : 41652943513

Option 4 ID : 41652943512

Status : Not Answered

Chosen Option : --

Q.12 If  $z_1, z_2$  and  $z_3$  are any three distinct complex numbers such that  $|z_1|=1, |z_2|=2, |z_3|=4,$   
 $\arg z_2 = \arg z_1 - \pi$  and  $\arg z_3 = \arg z_1 + \frac{\pi}{2}$   
 then  $z_2 z_3$  is equal to :

- Options
1.  $-8iz_1^2$
  2.  $-\frac{8i}{z_1^2}$
  3.  $\frac{8i}{z_1^2}$
  4.  $8iz_1^2$

Question Type : MCQ

Question ID : 41652911047

Option 1 ID : 41652943408

Option 2 ID : 41652943406

Option 3 ID : 41652943409

Option 4 ID : 41652943407

Status : Not Answered

Chosen Option : --

Q.13 If  $2\alpha$  is a root of  $ax^2 + bx + c = 0,$   $\beta$  is a root of  $ax^2 - 2bx - c = 0,$  and the real numbers  $a, b, c$  ( $a > 0$ ), are such that  $\beta < \alpha;$  then a root  $\gamma$  of  $ax^2 + 4bx + 2c = 0$  always satisfies :

- Options
1.  $\gamma < \beta < \alpha$
  2.  $\beta < \alpha < \gamma$
  3.  $\alpha < \gamma < 2\beta$
  4.  $\beta < \gamma < \alpha$

Question Type : MCQ

Question ID : 41652911048

Option 1 ID : 41652943412

Option 2 ID : 41652943413

Option 3 ID : 41652943410  
 Option 4 ID : 41652943411  
 Status : Not Answered  
 Chosen Option : --

Q.14 The value of  $\alpha$  for which the shortest distance between the lines represented by  $y + z = 0, z + x = 0$  and  $x + y = 0, x + y + z = \alpha$  is 1, is :

Options

1.  $\sqrt{\frac{3}{2}}$

2.  $\sqrt{\frac{3}{5}}$

3.  $\sqrt{\frac{2}{3}}$

4.  $\sqrt{\frac{5}{3}}$

Question Type : MCQ  
 Question ID : 41652911069  
 Option 1 ID : 41652943497  
 Option 2 ID : 41652943494  
 Option 3 ID : 41652943496  
 Option 4 ID : 41652943495  
 Status : Not Answered  
 Chosen Option : --

Q.15 Let  $(1+x)^n = C_0 + C_1x + C_2x^2 + \dots + C_nx^n$  where  $C_r = {}^nC_r$  and  $(C_0 + C_1)(C_1 + C_2)\dots(C_{n-1} + C_n) = AC_1C_2\dots C_n$ . Then for  $n=5$ , A is equal to :

Options 1. 3125/24

2. 625/24

3. 324/5

4. 128/3

Question Type : MCQ  
 Question ID : 41652911051  
 Option 1 ID : 41652943423  
 Option 2 ID : 41652943425  
 Option 3 ID : 41652943422  
 Option 4 ID : 41652943424  
 Status : Not Answered  
 Chosen Option : --

Q.16 A and B try to hit a target. The probability that A hits the target is  $\frac{7}{10}$  and the probability that B hits the target is  $\frac{4}{10}$ . If these two events are independent, the probability that B hits the target, given that the target is hit, is :

Options

1.  $\frac{17}{41}$

2.  $\frac{20}{41}$

3.  $\frac{19}{41}$

4.  $\frac{18}{41}$

Question Type : MCQ

Question ID : 41652911071

Option 1 ID : 41652943502

Option 2 ID : 41652943505

Option 3 ID : 41652943504

Option 4 ID : 41652943503

Status : Not Answered

Chosen Option : --

Q.17

If  $f(x) = \int_e^{e^x} \log_e \left( \frac{x}{\log_e t} \right) dt$ , then the value

of  $\frac{3f'(3)}{e}$  is :

Options 1.  $-3 \log_e 3$ 2.  $3 \log_e 3$ 3.  $e^3 - e$ 4.  $e^2 - 1$ 

Question Type : MCQ

Question ID : 41652911059

Option 1 ID : 41652943455

Option 2 ID : 41652943456

Option 3 ID : 41652943457

Option 4 ID : 41652943454

Status : Not Answered

Chosen Option : --

Q.18

Let  $\vec{a} = 2\hat{i} + \hat{j} - 2\hat{k}$  and  $\vec{b} = \hat{i} + \hat{j}$ . If

$\vec{c}$  be a vector such that

$\vec{a} \cdot \vec{c} = |\vec{c}|$ ,  $|\vec{c} - \vec{a}| = 2\sqrt{2}$  and the angle

between  $\vec{a} \times \vec{b}$  and  $\vec{c}$  is  $30^\circ$ , then the

value of  $\left| \left( \vec{a} \times \vec{b} \right) \times \vec{c} \right|$  is :

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

2. 3

3.  $\frac{3}{2}$

4. 6

Question Type : MCQ

Question ID : 41652911070

Option 1 ID : 41652943498

Option 2 ID : 41652943500

Option 3 ID : 41652943499

Option 4 ID : 41652943501

Status : Not Answered

Chosen Option : --

Q.19 The distance of the point (1, 2, 3) from the plane  $x + y + z = 2$  measured parallel to the

line  $\frac{x+1}{-1} = \frac{y}{-2} = \frac{z-3}{1}$  is :

- Options
1.  $\sqrt{22}$
  2.  $\sqrt{24}$
  3.  $\sqrt{23}$
  4.  $\sqrt{21}$

Question Type : MCQ

Question ID : 41652911068

Option 1 ID : 41652943491

Option 2 ID : 41652943493

Option 3 ID : 41652943492

Option 4 ID : 41652943490

Status : Not Answered

Chosen Option : --

Q.20 Let  $x_1, x_2, \dots, x_{20}$  be 20 observations and  $d_i = 2(x_i - 5), i = 1, 2, \dots, 20$ . If the mean and variance of  $d_1, d_2, \dots, d_{20}$  are 20 and 12 respectively, then the mean and variance of  $x_1, x_2, \dots, x_{20}$  are respectively,

- Options
1. 10 and 3
  2. 15 and 4
  3. 15 and 3
  4. 10 and 4

Question Type : MCQ

Question ID : 41652911072

Option 1 ID : 41652943508

Option 2 ID : 41652943509

Option 3 ID : 41652943507

Option 4 ID : 41652943506

Status : Answered

Chosen Option : 2

Q.21 For distinct positive numbers a, b and c, if  $a^2, b^2, c^2$  are in A.P., then which one of the following triplets is also in A.P. ?

- Options
1.  $\frac{1}{b+c}, \frac{1}{c+a}, \frac{1}{a+b}$



2.  $\frac{1}{b-c}, \frac{1}{c-a}, \frac{1}{a-b}$

3.  $\frac{1}{b-c}, \frac{1}{a-b}, \frac{1}{c-a}$

4.  $\frac{1}{b+2c}, \frac{1}{c+2a}, \frac{1}{a+2b}$

Question Type : MCQ

Question ID : 41652911053

Option 1 ID : 41652943432

Option 2 ID : 41652943430

Option 3 ID : 41652943431

Option 4 ID : 41652943433

Status : Not Answered

Chosen Option : --

Q.22

Let  $F(x) = \int_0^x f(t) dt$ , where $f(x) = 2 + \sin x - \cos x$ . If $|F(x) - F(y)| \leq k|x - y|$  for all  $x$  and  $y$  in  $\mathbf{R}$ ,  
then a possible value of  $k$  is :

Options 1.  $2 + \sqrt{2}$

2.  $2 - \sqrt{2}$

3.  $\sqrt{2} - 1$

4.  $1 + \frac{1}{\sqrt{2}}$

Question Type : MCQ

Question ID : 41652911057

Option 1 ID : 41652943446

Option 2 ID : 41652943447

Option 3 ID : 41652943449

Option 4 ID : 41652943448

Status : Not Answered

Chosen Option : --

Q.23

If  $B = \begin{bmatrix} -2 & -2 \\ -1 & 0 \end{bmatrix}$  and  $A$  is a matrix suchthat  $A^{-1}B = B^{-1}$  and  $kA^{-1} = 2B^{-1} + I$ ,  
where  $k$  is some scalar and  $I$  is the  $2 \times 2$   
identity matrix, then the value of  $k$  is :

Options 1.  $-1$

2.  $-2$

3.  $1$

4.  $2$

Question Type : MCQ

Question ID : 41652911049

Option 1 ID : 41652943415

Option 2 ID : 41652943414

Option 3 ID : 41652943416

Option 4 ID : 41652943417

Status : Answered

Chosen Option : 2

Q.24

The value of the integral  $\int_{\pi/2}^{\pi} \frac{\sin(3x/2)}{\sin(x/2)} dx$  is :

- Options
1.  $\frac{\pi}{2} - 1$
  2.  $\frac{\pi}{2}$
  3.  $\frac{\pi}{2} - 2$
  4.  $\frac{\pi}{2} + 2$

Question Type : MCQ

Question ID : 41652911060

Option 1 ID : 41652943461

Option 2 ID : 41652943459

Option 3 ID : 41652943458

Option 4 ID : 41652943460

Status : Not Answered

Chosen Option : --

Q.25 The solution of the differential equation

$$\frac{dy}{dx} + \frac{\sin 2y}{x} = x^3 \cos^2 y, \text{ is :}$$

(where C is a constant of integration)

- Options
1.  $x^2 \sin 2y = \frac{x^6}{6} + C$
  2.  $x^2 \tan y = \frac{x^6}{6} + C$
  3.  $x^2 \tan y = \frac{x^4}{4} + C$
  4.  $x^2 \cos 2y = \frac{x^6}{6} + C$

Question Type : MCQ

Question ID : 41652911062

Option 1 ID : 41652943469

Option 2 ID : 41652943466

Option 3 ID : 41652943467

Option 4 ID : 41652943468

Status : Answered

Chosen Option : 3

Q.26 If an ellipse has its foci at (2, 0) and (-2, 0) and its length of the latus rectum is 6, then the equation of the ellipse is :

- Options
1.  $\frac{x^2}{64} + \frac{y^2}{24} = 1$

$$2. \frac{x^2}{36} + \frac{y^2}{18} = 1$$

$$3. \frac{x^2}{16} + \frac{y^2}{12} = 1$$

$$4. \frac{x^2}{24} + \frac{y^2}{64} = 1$$

Question Type : MCQ

Question ID : 41652911066

Option 1 ID : 41652943485

Option 2 ID : 41652943484

Option 3 ID : 41652943482

Option 4 ID : 41652943483

Status : Not Answered

Chosen Option : --

Q.27 The area (in sq. units) of the region bounded by the curve  $\sqrt{x} + \sqrt{y} = 1$ ,  $x, y \geq 0$ , and

the tangent to it at the point  $\left(\frac{1}{4}, \frac{1}{4}\right)$  is :

Options

1.  $\frac{1}{36}$

2.  $\frac{1}{8}$

3.  $\frac{1}{12}$

4.  $\frac{1}{24}$

Question Type : MCQ

Question ID : 41652911061

Option 1 ID : 41652943462

Option 2 ID : 41652943464

Option 3 ID : 41652943463

Option 4 ID : 41652943465

Status : Not Answered

Chosen Option : --

Q.28 If  $m$  and  $n$  are the lengths of the perpendicular from the origin to the straight lines whose equations are  $x \cot \theta - y = 2 \cos \theta$  and

$$4x + 3y = -\sqrt{5} \cos 2\theta, (\theta \in (0, \pi)),$$

respectively, then the value of  $m^2 + 5n^2$  is :

Options

1. 7

2. 1

3. 3

4. 5

Question Type : MCQ

Question ID : 41652911065

Option 1 ID : 41652943481

Option 2 ID : 41652943479  
 Option 3 ID : 41652943478  
 Option 4 ID : 41652943480  
 Status : Not Answered  
 Chosen Option : --

Q.29 For  $\beta \neq 0$ , if the coefficient of  $x^3$  in the binomial expansion of  $(1 + \beta x)^6$  and the coefficient of  $x^4$  in the binomial expansion of  $(1 - \beta x)^8$  are equal, then the value of  $\beta$  is :

- Options
1.  $2/7$
  2.  $-2/7$
  3.  $-1/7$
  4.  $1/7$

Question Type : MCQ  
 Question ID : 41652911052  
 Option 1 ID : 41652943428  
 Option 2 ID : 41652943427  
 Option 3 ID : 41652943429  
 Option 4 ID : 41652943426  
 Status : Not Answered  
 Chosen Option : --

Q.30 If any tangent to the parabola  $x^2 = 4y$  intersects the hyperbola  $xy = 2$  at two points P and Q, then the mid-point of line segment PQ lies on a parabola with axis along :

- Options
1.  $x$ -axis and focus on positive  $x$ -axis
  2.  $y$ -axis and focus on positive  $y$ -axis
  3.  $x$ -axis and focus on negative  $x$ -axis
  4.  $y$ -axis and focus on negative  $y$ -axis

Question Type : MCQ  
 Question ID : 41652911064  
 Option 1 ID : 41652943474  
 Option 2 ID : 41652943477  
 Option 3 ID : 41652943475  
 Option 4 ID : 41652943476  
 Status : Not Answered  
 Chosen Option : --

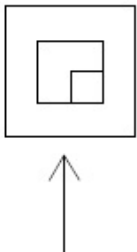
Section : Aptitude Test

**Comprehension:**

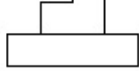
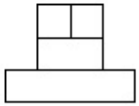
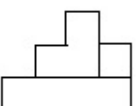
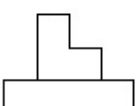
Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

SubQuestion No : 1

Q.1



Options

1. 
2. 
3. 
4. 

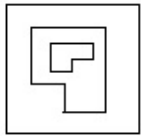
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 Question ID : 41652911077  
 Option 1 ID : 41652943522  
 Option 2 ID : 41652943525  
 Option 3 ID : 41652943524  
 Option 4 ID : 41652943523  
 Status : Answered  
 Chosen Option : 4

Comprehension:

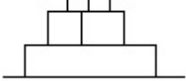
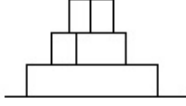
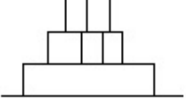
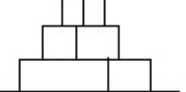
Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

SubQuestion No : 2

Q.2



Options

1. 
2. 
3. 
4. 

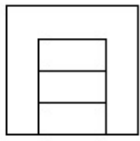
Question Type : MCQ  
 Question ID : 41652911081  
 Option 1 ID : 41652943541  
 Option 2 ID : 41652943538  
 Option 3 ID : 41652943540  
 Option 4 ID : 41652943539  
 Status : Answered  
 Chosen Option : 2

**Comprehension:**

Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

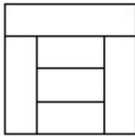
**SubQuestion No : 3**

Q.3

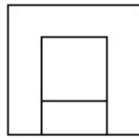


**Options**

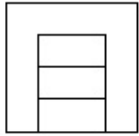
1.



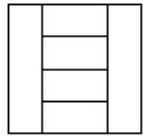
2.



3.



4.



Question Type : MCQ

Question ID : 41652911079

Option 1 ID : 41652943530

Option 2 ID : 41652943533

Option 3 ID : 41652943531

Option 4 ID : 41652943532

Status : Not Answered

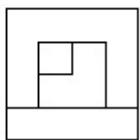
Chosen Option : --

**Comprehension:**

Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

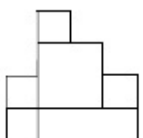
**SubQuestion No : 4**

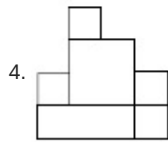
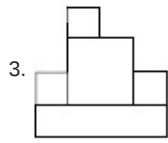
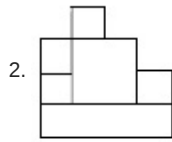
Q.4



**Options**

1.





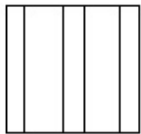
Question Type : MCQ  
 Question ID : 41652911078  
 Option 1 ID : 41652943526  
 Option 2 ID : 41652943529  
 Option 3 ID : 41652943528  
 Option 4 ID : 41652943527  
 Status : Not Answered  
 Chosen Option : --

**Comprehension:**

Directions : The problem figure shows the top view of an object. Identify the correct elevation from amongst the answer figures looking in the direction of the arrow.

**SubQuestion No : 5**

Q.5



**Options**



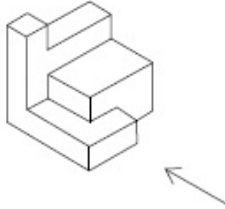
Question Type : MCQ  
 Question ID : 41652911080  
 Option 1 ID : 41652943537  
 Option 2 ID : 41652943534  
 Option 3 ID : 41652943536  
 Option 4 ID : 41652943535  
 Status : Not Answered  
 Chosen Option : --

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

SubQuestion No : 6

Q.6



Options

- 1.
- 2.
- 3.
- 4.

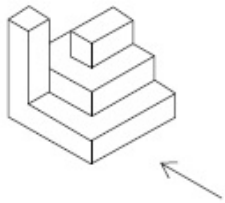
Question Type : MCQ  
Question ID : 41652911087  
Option 1 ID : 41652943559  
Option 2 ID : 41652943560  
Option 3 ID : 41652943558  
Option 4 ID : 41652943561  
Status : Answered  
Chosen Option : 2

Comprehension:

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

SubQuestion No : 7

Q.7



Options

- 1.
- 2.
- 3.
- 4.

Question Type : MCQ  
Question ID : 41652911084  
Option 1 ID : 41652943546



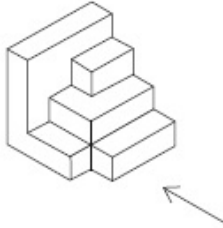
Option 2 ID : 41652943547  
 Option 3 ID : 41652943549  
 Option 4 ID : 41652943548  
 Status : Answered  
 Chosen Option : 2

**Comprehension:**

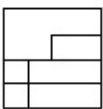
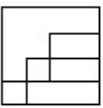
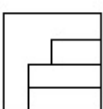
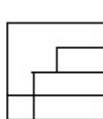
Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

**SubQuestion No : 8**

Q.8



**Options**

1. 
2. 
3. 
4. 

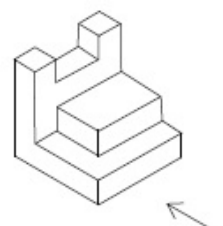
Question Type : MCQ  
 Question ID : 41652911083  
 Option 1 ID : 41652943544  
 Option 2 ID : 41652943543  
 Option 3 ID : 41652943542  
 Option 4 ID : 41652943545  
 Status : Answered  
 Chosen Option : 4

**Comprehension:**

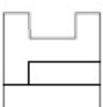
Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

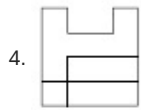
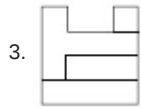
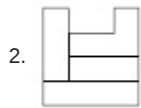
**SubQuestion No : 9**

Q.9



**Options**

1. 



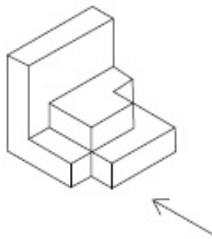
Question Type : MCQ  
 Question ID : 41652911085  
 Option 1 ID : 41652943551  
 Option 2 ID : 41652943550  
 Option 3 ID : 41652943553  
 Option 4 ID : 41652943552  
 Status : Answered  
 Chosen Option : 1

**Comprehension:**

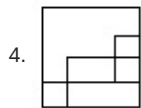
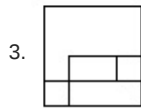
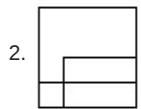
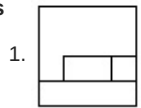
Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

SubQuestion No : 10

Q.10



Options



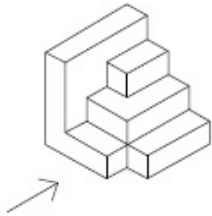
Question Type : MCQ  
 Question ID : 41652911086  
 Option 1 ID : 41652943556  
 Option 2 ID : 41652943555  
 Option 3 ID : 41652943554  
 Option 4 ID : 41652943557  
 Status : Answered  
 Chosen Option : 3

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

SubQuestion No : 11

Q.11



Options

- 1.
- 2.
- 3.
- 4.

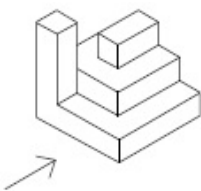
Question Type : **MCQ**  
 Question ID : **41652911089**  
 Option 1 ID : **41652943562**  
 Option 2 ID : **41652943564**  
 Option 3 ID : **41652943565**  
 Option 4 ID : **41652943563**  
 Status : **Answered**  
 Chosen Option : **4**

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

SubQuestion No : 12

Q.12



Options

- 1.
- 2.
- 3.
- 4.

Question Type : **MCQ**  
 Question ID : **41652911090**  
 Option 1 ID : **41652943567**  
 Option 2 ID : **41652943566**  
 Option 3 ID : **41652943568**  
 Option 4 ID : **41652943569**

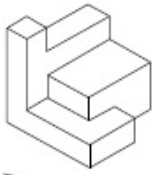
Status : **Answered**  
Chosen Option : 2

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

**SubQuestion No : 13**

Q.13



**Options**

- 1.
- 2.
- 3.
- 4.

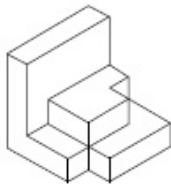
Question Type : **MCQ**  
Question ID : **41652911093**  
Option 1 ID : **41652943578**  
Option 2 ID : **41652943580**  
Option 3 ID : **41652943579**  
Option 4 ID : **41652943581**  
Status : **Answered**  
Chosen Option : 4

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

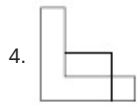
**SubQuestion No : 14**

Q.14



**Options**

- 1.
- 2.
- 3.



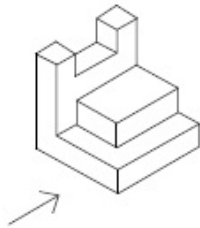
Question Type : MCQ  
 Question ID : 41652911092  
 Option 1 ID : 41652943575  
 Option 2 ID : 41652943574  
 Option 3 ID : 41652943577  
 Option 4 ID : 41652943576  
 Status : Answered  
 Chosen Option : 4

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct front view in the direction of the arrow, from amongst the answer figures.

**SubQuestion No : 15**

Q.15



**Options**

- 1.
- 2.
- 3.
- 4.

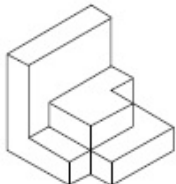
Question Type : MCQ  
 Question ID : 41652911091  
 Option 1 ID : 41652943570  
 Option 2 ID : 41652943571  
 Option 3 ID : 41652943572  
 Option 4 ID : 41652943573  
 Status : Answered  
 Chosen Option : 2

**Comprehension:**

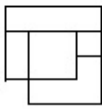
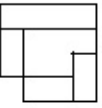
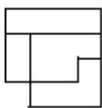
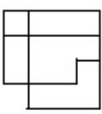
Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

**SubQuestion No : 16**

Q.16



**Options**

1. 
2. 
3. 
4. 

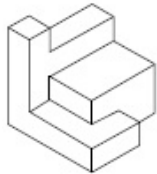
Question Type : **MCQ**  
 Question ID : **41652911098**  
 Option 1 ID : **41652943595**  
 Option 2 ID : **41652943597**  
 Option 3 ID : **41652943594**  
 Option 4 ID : **41652943596**  
 Status : **Answered**  
 Chosen Option : **2**

**Comprehension:**

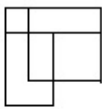
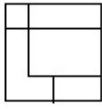
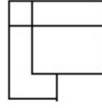
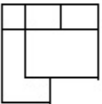
Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

SubQuestion No : 17

Q.17



**Options**

1. 
2. 
3. 
4. 

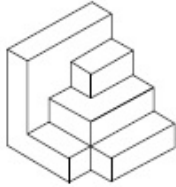
Question Type : **MCQ**  
 Question ID : **41652911099**  
 Option 1 ID : **41652943598**  
 Option 2 ID : **41652943601**  
 Option 3 ID : **41652943600**  
 Option 4 ID : **41652943599**  
 Status : **Answered**  
 Chosen Option : **4**

**Comprehension:**

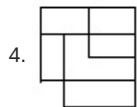
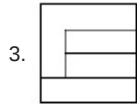
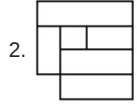
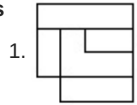
Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

SubQuestion No : 18

Q.18



Options



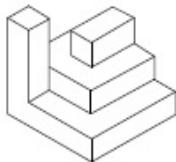
Question Type : MCQ  
 Question ID : 41652911095  
 Option 1 ID : 41652943585  
 Option 2 ID : 41652943583  
 Option 3 ID : 41652943582  
 Option 4 ID : 41652943584  
 Status : Answered  
 Chosen Option : 1

Comprehension:

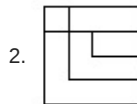
Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

SubQuestion No : 19

Q.19



Options



Question Type : MCQ  
 Question ID : 41652911096  
 Option 1 ID : 41652943587  
 Option 2 ID : 41652943589  
 Option 3 ID : 41652943586

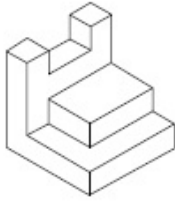
Option 4 ID : 41652943588  
 Status : Answered  
 Chosen Option : 1

**Comprehension:**

Directions : The 3 - D figure shows the view of an object. Identify the correct top view from amongst the answer figures.

SubQuestion No : 20

Q.20



Options

- 1.
- 2.
- 3.
- 4.

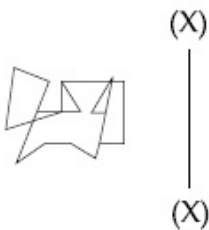
Question Type : MCQ  
 Question ID : 41652911097  
 Option 1 ID : 41652943592  
 Option 2 ID : 41652943590  
 Option 3 ID : 41652943591  
 Option 4 ID : 41652943593  
 Status : Answered  
 Chosen Option : 3

**Comprehension:**

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?

SubQuestion No : 21

Q.21



Options

- 1.
- 2.
- 3.





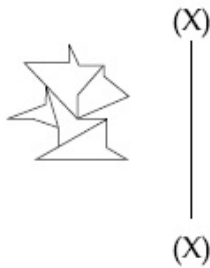
Question Type : **MCQ**  
 Question ID : **41652911101**  
 Option 1 ID : **41652943602**  
 Option 2 ID : **41652943603**  
 Option 3 ID : **41652943605**  
 Option 4 ID : **41652943604**  
 Status : **Answered**  
 Chosen Option : **4**

**Comprehension:**

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?

SubQuestion No : 22

Q.22



**Options**

- 1.
- 2.
- 3.
- 4.

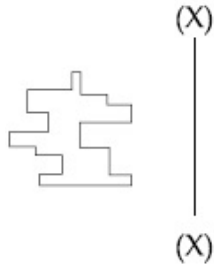
Question Type : **MCQ**  
 Question ID : **41652911104**  
 Option 1 ID : **41652943615**  
 Option 2 ID : **41652943614**  
 Option 3 ID : **41652943616**  
 Option 4 ID : **41652943617**  
 Status : **Not Answered**  
 Chosen Option : **--**

**Comprehension:**

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?

SubQuestion No : 23

Q.23



Options

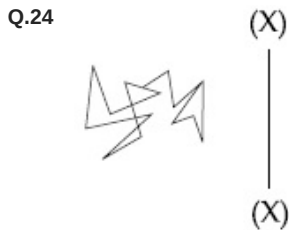
- 1.
- 2.
- 3.
- 4.

Question Type : MCQ  
Question ID : 41652911103  
Option 1 ID : 41652943610  
Option 2 ID : 41652943613  
Option 3 ID : 41652943611  
Option 4 ID : 41652943612  
Status : Not Answered  
Chosen Option : --

Comprehension:

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?

SubQuestion No : 24



Options

- 1.
- 2.
- 3.
- 4.

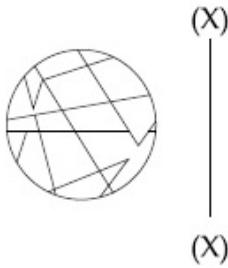
Question Type : MCQ  
Question ID : 41652911102  
Option 1 ID : 41652943606  
Option 2 ID : 41652943607  
Option 3 ID : 41652943609  
Option 4 ID : 41652943608  
Status : Not Answered  
Chosen Option : --

**Comprehension:**

Directions : Which one of the answer figure is the correct mirror image of the problem figure with respect to X - X ?

SubQuestion No : 25

Q.25



Options

- 1.
- 2.
- 3.
- 4.

Question Type : MCQ  
Question ID : 41652911105  
Option 1 ID : 41652943621  
Option 2 ID : 41652943618  
Option 3 ID : 41652943619  
Option 4 ID : 41652943620  
Status : Not Answered  
Chosen Option : --

**Comprehension:**

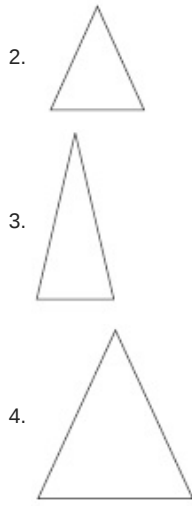
Directions : Find the odd figure out of the answer figures given below :

SubQuestion No : 26

Q.26

Options

- 1.



Question Type : **MCQ**  
 Question ID : **41652911111**  
 Option 1 ID : **41652943639**  
 Option 2 ID : **41652943640**  
 Option 3 ID : **41652943641**  
 Option 4 ID : **41652943638**  
 Status : **Answered**  
 Chosen Option : **1**

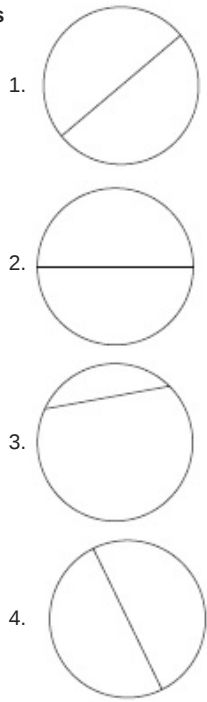
**Comprehension:**

Directions : Find the odd figure out of the answer figures given below :

SubQuestion No : 27

Q.27 .

Options



Question Type : **MCQ**  
 Question ID : **41652911109**  
 Option 1 ID : **41652943633**  
 Option 2 ID : **41652943630**  
 Option 3 ID : **41652943631**  
 Option 4 ID : **41652943632**  
 Status : **Answered**  
 Chosen Option : **3**

**Comprehension:**

Directions : Find the odd figure out of the answer figures given below :

SubQuestion No : 28

Q.28 .

Options

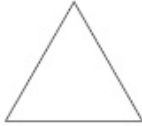
1.



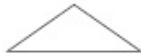
2.



3.



4.



Question Type : MCQ

Question ID : 41652911110

Option 1 ID : 41652943635

Option 2 ID : 41652943636

Option 3 ID : 41652943634

Option 4 ID : 41652943637

Status : Answered

Chosen Option : 4

Comprehension:

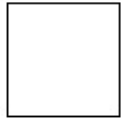
Directions : Find the odd figure out of the answer figures given below :

SubQuestion No : 29

Q.29 .

Options

1.



2.



3.



4.



Question Type : MCQ

Question ID : 41652911107

Option 1 ID : 41652943622

Option 2 ID : 41652943625

Option 3 ID : 41652943624

Option 4 ID : 41652943623

Status : Answered

Chosen Option : 3

Comprehension:

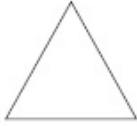
Directions : Find the odd figure out of the answer figures given below :

SubQuestion No : 30

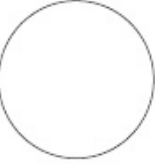
Q.30 .

Options

1.



2.



3.



4.



Question Type : MCQ

Question ID : 41652911108

Option 1 ID : 41652943626

Option 2 ID : 41652943628

Option 3 ID : 41652943629

Option 4 ID : 41652943627

Status : Answered

Chosen Option : 2

Comprehension:

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

SubQuestion No : 31

Q.31



Options

1.



2.



3.



4.



Question Type : MCQ

Question ID : 41652911117

Option 1 ID : 41652943661

Option 2 ID : 41652943658

Option 3 ID : 41652943659

Option 4 ID : 41652943660

Status : Answered

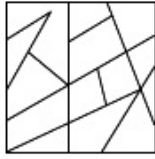
Chosen Option : 4

**Comprehension:**

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

**SubQuestion No : 32**

Q.32



Options

- 1.
- 2.
- 3.
- 4.

Question Type : MCQ  
Question ID : 41652911114  
Option 1 ID : 41652943648  
Option 2 ID : 41652943647  
Option 3 ID : 41652943646  
Option 4 ID : 41652943649  
Status : Answered  
Chosen Option : 3

**Comprehension:**

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

**SubQuestion No : 33**

Q.33



Options

- 1.
- 2.
- 3.
- 4.

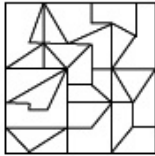
Question Type : MCQ  
Question ID : 41652911113  
Option 1 ID : 41652943642  
Option 2 ID : 41652943645  
Option 3 ID : 41652943643  
Option 4 ID : 41652943644  
Status : Answered  
Chosen Option : 2

**Comprehension:**

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

**SubQuestion No : 34**

Q.34



Options

- 1.
- 2.
- 3.
- 4.

Question Type : MCQ

Question ID : 41652911116

Option 1 ID : 41652943657

Option 2 ID : 41652943655

Option 3 ID : 41652943656

Option 4 ID : 41652943654

Status : Answered

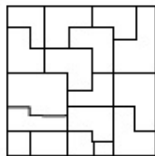
Chosen Option : 1

**Comprehension:**

Directions : One of the following answer figure is hidden in the problem figure in the same size and direction. Select the correct one.

SubQuestion No : 35

Q.35



Options

- 1.
- 2.
- 3.
- 4.

Question Type : MCQ

Question ID : 41652911115

Option 1 ID : 41652943652

Option 2 ID : 41652943650

Option 3 ID : 41652943651

Option 4 ID : 41652943653

Status : Answered

Chosen Option : 2

**Comprehension:**

.

SubQuestion No : 36

Q.36 In which of the following Indian city is the 'Bara Immambara' located ?

Options

1. Lucknow
2. Ahmedabad
3. Hyderabad
4. Delhi



Question Type : MCQ  
Question ID : 41652911128  
Option 1 ID : 41652943699  
Option 2 ID : 41652943700  
Option 3 ID : 41652943698  
Option 4 ID : 41652943701  
Status : Answered  
Chosen Option : 2

Comprehension:

SubQuestion No : 37

Q.37 Which Indian city is abutting the Arabian Sea ?

- Options
1. Mumbai
  2. Surat
  3. Kolkata
  4. Chennai

Question Type : MCQ  
Question ID : 41652911126  
Option 1 ID : 41652943691  
Option 2 ID : 41652943693  
Option 3 ID : 41652943690  
Option 4 ID : 41652943692  
Status : Answered  
Chosen Option : 1

Comprehension:

SubQuestion No : 38

Q.38 Which one of the following is a primary color ?

- Options
1. Orange
  2. Purple
  3. Green
  4. Red

Question Type : MCQ  
Question ID : 41652911119  
Option 1 ID : 41652943663  
Option 2 ID : 41652943662  
Option 3 ID : 41652943665  
Option 4 ID : 41652943664  
Status : Answered  
Chosen Option : 1

Comprehension:

SubQuestion No : 39

Q.39 Cavity walls are which one of the following ?

- Options
1. Walls with air gap
  2. Walls with doors
  3. Walls with holes

## 4. Walls with windows

Question Type : MCQ  
Question ID : 41652911129  
Option 1 ID : 41652943703  
Option 2 ID : 41652943705  
Option 3 ID : 41652943702  
Option 4 ID : 41652943704  
Status : Answered  
Chosen Option : 1

## Comprehension:

.

SubQuestion No : 40

Q.40 Which one of the following is not a planned city ?

- Options
1. Kanpur
  2. Chandigarh
  3. Gandhi nagar
  4. Bhubaneshwar

Question Type : MCQ  
Question ID : 41652911133  
Option 1 ID : 41652943721  
Option 2 ID : 41652943719  
Option 3 ID : 41652943718  
Option 4 ID : 41652943720  
Status : Answered  
Chosen Option : 3

## Comprehension:

.

SubQuestion No : 41

Q.41 Frame structure in high rise building pertains to which one of the following ?

- Options
1. Columns and Beams structure
  2. Structure with squares on the facade
  3. Load bearing wall structure
  4. A square building

Question Type : MCQ  
Question ID : 41652911131  
Option 1 ID : 41652943711  
Option 2 ID : 41652943710  
Option 3 ID : 41652943712  
Option 4 ID : 41652943713  
Status : Not Answered  
Chosen Option : --

## Comprehension:

.

SubQuestion No : 42

Q.42 In the Northern Hemisphere the winter sun rises from which direction amongst the following ?

Options

1. North West
2. South West
3. North East
4. South East

Question Type : MCQ  
Question ID : 41652911120  
Option 1 ID : 41652943667  
Option 2 ID : 41652943669  
Option 3 ID : 41652943666  
Option 4 ID : 41652943668  
Status : Answered  
Chosen Option : 3

Comprehension:

SubQuestion No : 43

Q.43 What does the abbreviation NASA stand for amongst the following ?

- Options
1. National Archeology Studies Academy
  2. National Art and Science Association
  3. National Architecture and Science Association
  4. National Aeronautics and Space Administration

Question Type : MCQ  
Question ID : 41652911123  
Option 1 ID : 41652943679  
Option 2 ID : 41652943681  
Option 3 ID : 41652943678  
Option 4 ID : 41652943680  
Status : Answered  
Chosen Option : 4

Comprehension:

SubQuestion No : 44

Q.44 Which color amongst the following represents danger ?

- Options
1. White
  2. Red
  3. Green
  4. Black

Question Type : MCQ  
Question ID : 41652911125  
Option 1 ID : 41652943689  
Option 2 ID : 41652943688  
Option 3 ID : 41652943687  
Option 4 ID : 41652943686  
Status : Answered  
Chosen Option : 2

Comprehension:

SubQuestion No : 45

Q.45 What does the abbreviation ISRO stand for amongst the following ?

- Options
1. International Settlements and Relief Organization
  2. International Sea and Rain Office
  3. Indian Studies and Result Office
  4. Indian Space Research Organization

Question Type : MCQ

Question ID : 41652911122

Option 1 ID : 41652943677

Option 2 ID : 41652943675

Option 3 ID : 41652943674

Option 4 ID : 41652943676

Status : Answered

Chosen Option : 4

Comprehension:

SubQuestion No : 46

Q.46 Green buildings are associated with which of the following :

- Options
1. Location
  2. Beauty
  3. Landscape
  4. Environmental suitability

Question Type : MCQ

Question ID : 41652911130

Option 1 ID : 41652943709

Option 2 ID : 41652943707

Option 3 ID : 41652943706

Option 4 ID : 41652943708

Status : Answered

Chosen Option : 4

Comprehension:

SubQuestion No : 47

Q.47 Chajjas above windows are meant to protect the building from which of the following ?

- Options
1. Birds
  2. Sun
  3. Typhoon
  4. Wind

Question Type : MCQ

Question ID : 41652911132

Option 1 ID : 41652943715

Option 2 ID : 41652943716

Option 3 ID : 41652943717

Option 4 ID : 41652943714  
Status : Answered  
Chosen Option : 3

Comprehension:

.

SubQuestion No : 48

Q.48 Which one of the following is a horizontal element that supports the loads above openings in walls in a building ?

- Options
1. Foundation
  2. Lintel
  3. Pillar
  4. Column

Question Type : MCQ  
Question ID : 41652911124  
Option 1 ID : 41652943684  
Option 2 ID : 41652943682  
Option 3 ID : 41652943685  
Option 4 ID : 41652943683  
Status : Answered  
Chosen Option : 3

Comprehension:

.

SubQuestion No : 49

Q.49 A byte is which one of the following ?

- Options
1. A group of stars
  2. An act of an acrobat
  3. A unit of digital memory
  4. A unit of sound

Question Type : MCQ  
Question ID : 41652911121  
Option 1 ID : 41652943670  
Option 2 ID : 41652943672  
Option 3 ID : 41652943671  
Option 4 ID : 41652943673  
Status : Answered  
Chosen Option : 3

Comprehension:

.

SubQuestion No : 50

Q.50 In which of the following Indian city are the 'Shaking Minarets' located ?

- Options
1. Ahmedabad
  2. Delhi
  3. Lucknow
  4. Hyderabad

Question Type : MCQ  
Question ID : 41652911127

Option 1 ID : 41652943696  
Option 2 ID : 41652943697  
Option 3 ID : 41652943695  
Option 4 ID : 41652943694  
Status : Answered  
Chosen Option : 2

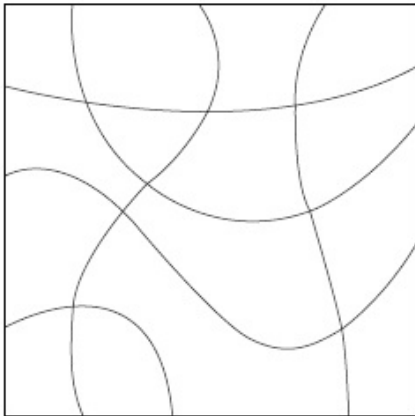
Section : Drawing

Q. 1 (a) In the space provided in the answer sheet for this question, draw margin lines to form a frame. In this frame create an aesthetic composition using only curved lines. The shapes created by these curved lines can be of any size, and may be placed separate, overlapping or within each other. The idea is to produce an aesthetic and visually exciting composition of these shapes in the frame without making it represent any realistic form like house face etc. The composition should be filled with some colors of your choice so that the visual quality of the composition is enhanced.

20 Marks

Question Type : SUBJECTIVE  
Question ID : 41652911134  
Status : Answered

Q. 2 (b) Draw the graphic image shown below to double its size in the space provided for the answer of this question. Each component line should be drawn double its length and correctly positioned direction wise as shown in the question figure.



20 Marks

Question Type : SUBJECTIVE  
Question ID : 41652911135  
Status : Answered

Q. 3

Question Type : SUBJECTIVE  
Question ID : 41652911136  
Status : Answered

- (c) Design an appropriate pattern for a curtain for a small girl's room. Draw and color it. **30 Marks**

**OR**

Draw a picture of your favorite film star's face as realistic as possible.

**OR**

Draw from imagination a picture of some people sitting around a bonfire.