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NATA
National Aptitude Test in Architecture

NATA - 2019

(Answer key for Test held on 7-Jul-2019)

Q1: Given an A.P. whose terms are all positive integers. The sum of its first nine terms is greater than 200 and less than 220. If the second term in it is 12, then its 4th term is :

A 20

B 16

C 8

D 24

Correct Ans: **A**

Q2: The curved surface area of a cylindrical pillar is 264 m^2 and its volume is 924 m^3. Find the ratio of its diameter to its height

A 3 : 7

B 7 : 3

C 6 : 7

D 7 : 6

Correct Ans: **B**

Q3: A hall is 15 m long and 12 m broad. If the sum of the areas of the floor and the ceiling is equal to the sum of the areas of four walls, the volume of the hall is:

A 720

B 900

C 1200

D 1800

Correct Ans: **C**

Q4: If a sphere has a radius of 4.5 cm what would its total surface area come to?

A 350.15

B 246

C 254.47

D 128.06

Correct Ans: **C**

Q5: Area and perimeter of a rectangular field are 2000 sq.m. and 180 m respectively. What is the length and breadth?

A l = 12, b = 40

B l = 20, b = 15

C l = 25, b = 30

D l = 50, b = 40

Correct Ans: **D**

Q6: The difference of two positive integers is 3 and the sum of their squares is 117. What are the numbers?

A 2,0

B 2/3,1

C 1,-2

D 6,9

Correct Ans: **D**

Q7: If $\tan^{-1}(\sin x) = \frac{\pi}{4}$, then the value of x is:

A $\frac{\pi}{2}$

B $\frac{\pi}{6}$

C $\frac{\pi}{3}$

D $\frac{\pi}{8}$

Correct Ans: **A**

Q8: If $\cos 2\theta + \sin\theta = \sqrt{2}\cos\theta$. Then $\cos\theta - \sin\theta$ =?

A $\sqrt{2}\cos\theta$

B $2\sin\theta$

C

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$\sqrt{2}\sin\theta$

D $2\cos\theta$

Correct Ans: **C**

Q9: If $\int_0^a 3x^2\,dx = 8$ find the value of a.

A 3

B 2

C 4

D 8

Correct Ans: **B**

Q10: If $\log_8 x + \log_4 x + \log_2 x = 11$, x = ?

A 11

B 8

C 12

D 64

Correct Ans: **D**

Q11: You have a 9 x 9 x 9 cm box. How many cubes of side 5 cm will you be able to fit inside it?

A 2

B 1

C None

D 5

Correct Ans: **B**

Q12: If $x = t, y = \frac{1}{t}$ then $\frac{dy}{dx}$ is equal to:

A $\frac{y}{x}$

B $\frac{x}{y}$

C $-\frac{x}{y}$

D $-\frac{y}{x}$

Correct Ans: **D**

Q13: $\log(\sin 1^\circ)\times\log(\sin 2^\circ)\times.....\times\log(\sin 90^\circ)$ is

A positive

B negative

C zero

D lies between 1 and 180

Correct Ans: **C**

Q14: Area bounded by $y=x^3$, y=8 and x=0 is

A 2 sq. units

B 14 sq. units

C 12 sq. units

D 6 sq. units

Correct Ans: **C**

Q15: The average age of 20 students in a class is 15 years. If the teacher's age is including, the average increases by 1. What is the teacher's age?

A 30 years

B 21 years

C 42 years

D 36 years

Correct Ans: **D**

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Q16: The number of straight lines that can be formed by joining 20 points of which 4 points are collinear is

A 183

B 186

C 185

D 190

Correct Ans: **C**

Q17: A determinant is chosen at random from the set of order 2 with elements 0 or 1 only. The probability that the determinant chosen non zero is

A 3/8

B 3/16

C 1/4

D 1/8

Correct Ans: **A**

Q18: The probability that a leap year will have 53 Fridays or 53 Saturday is

A 2/7

B 3/7

C 4/7

D 1/7

Correct Ans: **B**

Q19: A complete cycle of a traffic light takes 60 seconds. During each cycle the light is green for 25 sec, yellow for 5 sec and red for 30 sec. At a randomly chosen time, the probability that the light will not be green is

A 1/3

B 1/4

C 1/12

D 7/12

Correct Ans: **D**

Q20: Let the following system of equations
$kx + y + z = 1$
$x + ky + z = k$
$x + y + kz = k^2$
Has no solution. Find $|k|$.

A 0

B 1

C 2

D 3

Correct Ans: **C**

Q21: A supporting element on a curved opening is called as

A Lintel

B Arch

C Lancet

D Awning

Correct Ans: **B**

Q22: Tanagrams are a set of puzzle originated in which country

A Turkey

B China

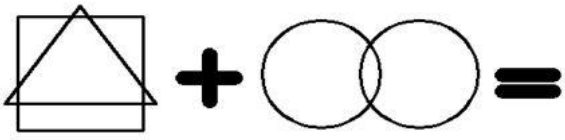
C India

D Tanzania

Correct Ans: **B**

Q23:

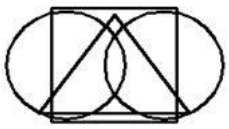
Identify the answer figure

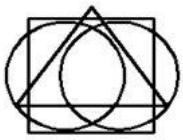


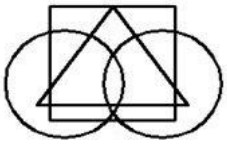
A

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B 

C 

D 

Correct Ans: **A**

Q24: 'RERA' refers to Regulatory Authority in

A Architecture Education

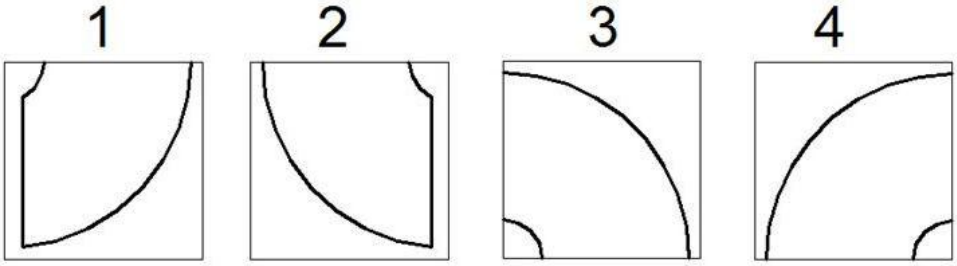
B Road Construction

C Real Estate

D Regional Environment and Rivers

Correct Ans: **C**

Q25: Following is a quarter part of a famous logo, identify the correct option to complete the logo



A

1	2
3	4

B

3	4
2	1

C

4	3
2	1

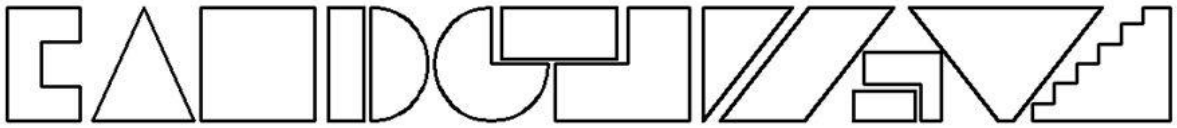
D

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2	4
3	1

Correct Ans: **C**

Q26: Flipped along their horizontal axis , how many of them would look the same



A 3

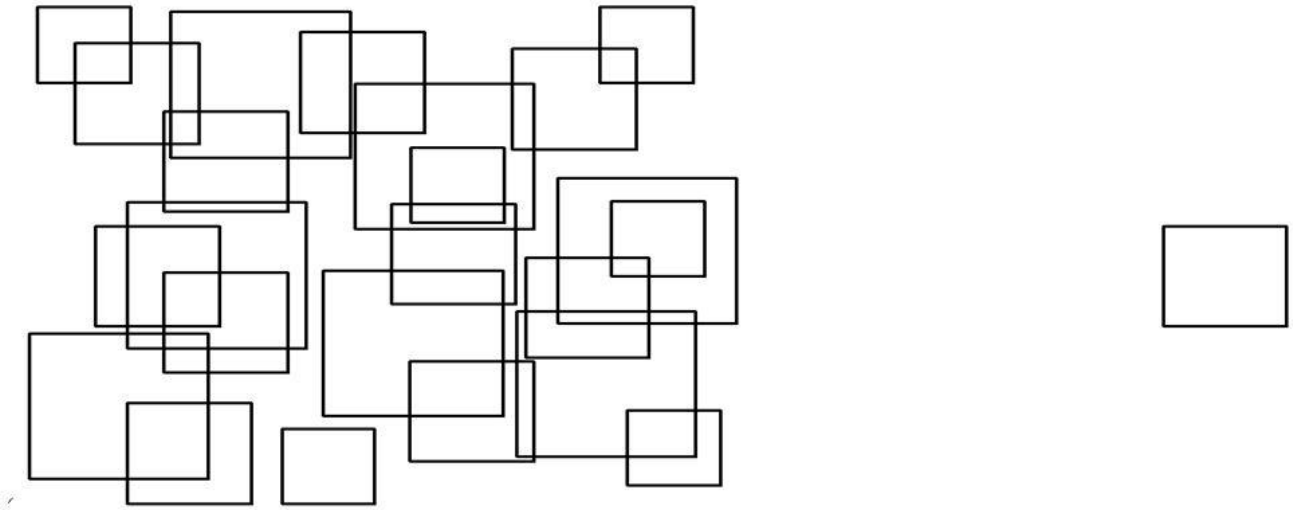
B 6

C 8

D 4

Correct Ans: **B**

Q27: Shown on the left is a composition of squares of different sizes, how many time the square of the right is repeated in the composition.



A 8

B 3

C 6

D 10

Correct Ans: **D**

Q28: In Coastal region which material should be used for making truss

A Mild Steel

B Glass

C Aluminum

D Cast Iron

Correct Ans: **C**

Q29: Vertical elements in building are

A Column, Lintel, Wall

B Lintel, Beam, Arch.

C Column , Pier, Post

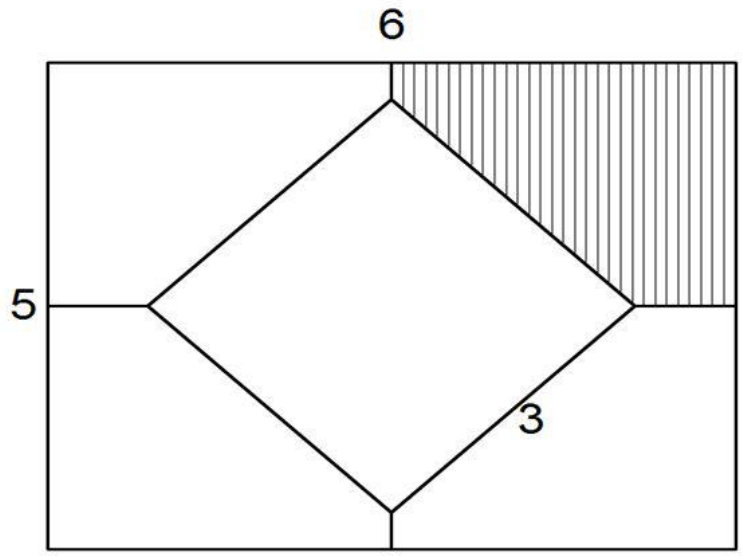
D Floor, Column, Arch

Correct Ans: **C**

Q30: A square of 3 cm. side was cut from a rectangle of 6cm x 5cm as shown in the figure, what is the area of the shaded portion.

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A 30

B 2.25

C 5.25

D 21

Correct Ans: **C**

Q31: In a row of boys, If A who is 10th from the left and B who is 9th from the right interchange their positions, A becomes 15th from the left. How many boys are there in the row ?

A 23

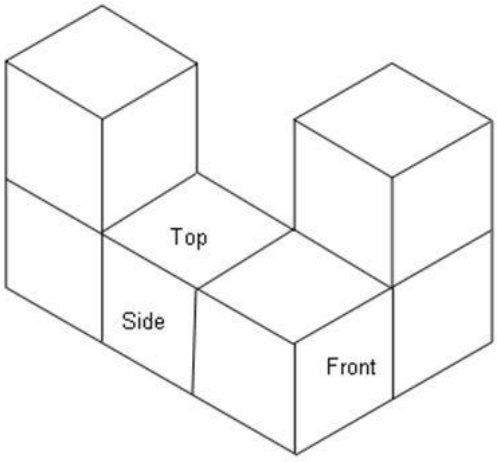
B 31

C 27

D 28

Correct Ans: **A**

Q32: Which of the given alternatives shows the top view of the given 3-D figure?



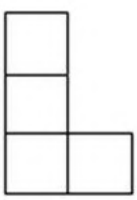
A



B



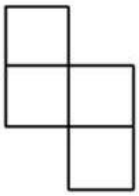
C



D

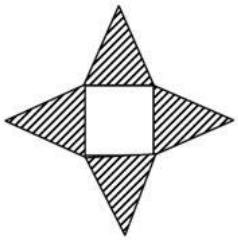
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Correct Ans: **C**

Q33: Which of the following 3D objects, when cut to make a net, will look like the given figure?



A Cuboid

B Prism

C Cone

D Pyramid

Correct Ans: **D**

Q34: The Petronas Twin Towers are located in

A China

B Malaysia

C South Africa

D U. S. A.

Correct Ans: **B**

Q35: Guggenheim museum in Newyork is designed by

A Louis Khan

B Frank Llyod Wright

C B.V. Doshi

D Frank Gerry

Correct Ans: **B**

Q36: Which of the following shapes will you get on slicing a rectangular pyramid horizontally parallel to its base?

A Rectangle

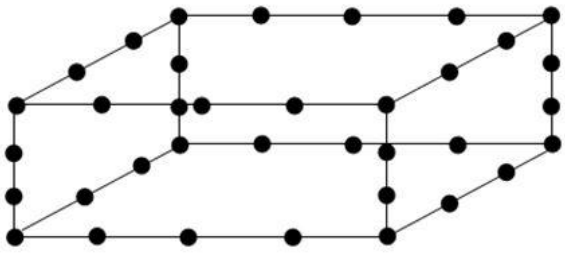
B Triangle

C Hexagon

D Square

Correct Ans: **A**

Q37: What is the area of the base of the given figure(cuboid), where the distance between 2 dots is 1 unit?



A 5 unit^2

B 10 unit^2

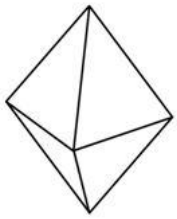
C 9 unit^2

D 12 unit^2

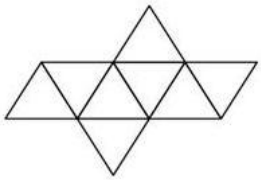
Correct Ans: **D**

Q38: If the form shown below were to be unfolded what would it look like?

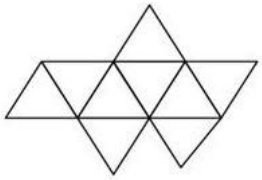
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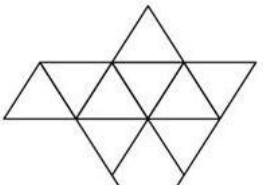
A



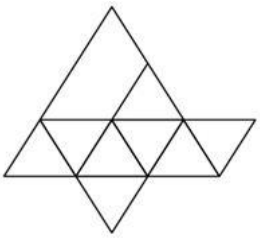
B



C



D



Correct Ans: **A**

Q39: What is the decimal equivalent of binary number 110011?

A 20

B 51

C 22

D 23

Correct Ans: **B**

Q40: Which tributary of the Ganges is also known as the ‘Kalindi’?

A Bhagirathi

B Yamuna

C Alaknanda

D Ravi

Correct Ans: **B**

Q41: Mandovi’ and ‘Zuari’ are two major rivers in which state?

A Goa

B Orissa

C Kerala

D Andhra Pradesh

Correct Ans: **A**

Q42: If you have to build on the seashore in Chennai, which rooms would have the best view of the sea?

A Those facing north

B Those facing south

C Those facing east

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D Those facing west

Correct Ans: **C**

Q43: Which of the following is associated with perspective?

A Representing 3D objects on a 2D surface

B Abstract art

C Process of designing interactive products

D The art of arranging type

Correct Ans: **A**

Q44: Which of the following term best describes a facade?

A A hemispherical part of a roof

B The support of a column

C Extension of a building

D The buildings face/front

Correct Ans: **D**

Q45: Which of the following structures does NOT have a dome?

A Hagia Sophia, Istanbul, Turkey

B The Taj Mahal, Agra, India

C The White House, Washington, D.C

D St. Paul's Cathedral , London

Correct Ans: **C**

Q46: Identify the below structure that blends modern architecture and Indian tradition.



A Indian Institute of Management, Bangalore

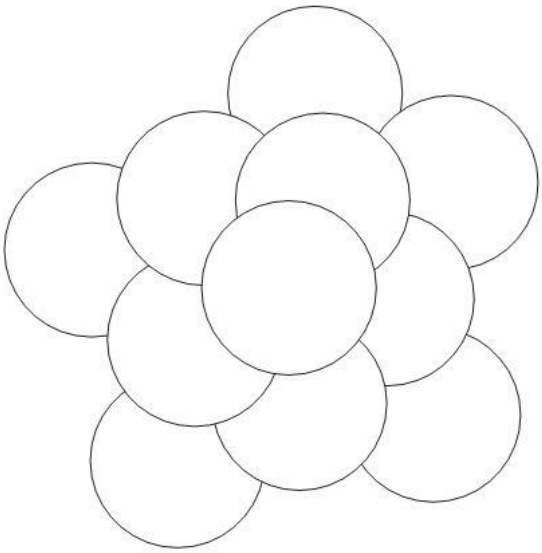
B Indian Institute of Management, Indore

C Indian Institute of Management, Jaipur

D Indian Institute of Management, Ahmadabad

Correct Ans: **D**

Q47: How many circles appears in the below picture?



A 6

B 7

C 1

D 10

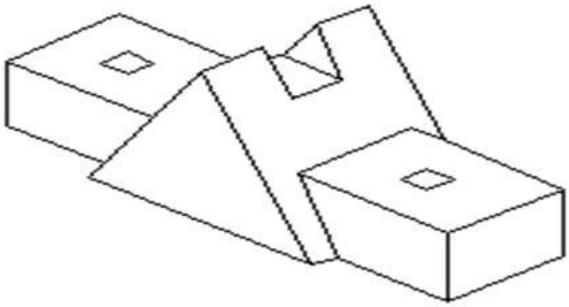
Correct Ans: **C**

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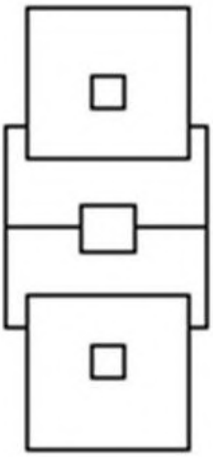
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Q48: The problem figure shows a 3 dimensional view of an object. Identify the correct 2 dimensional top view from among the answers based on the direction of the arrow

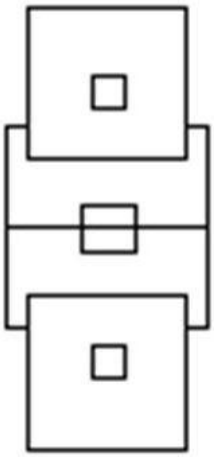




A



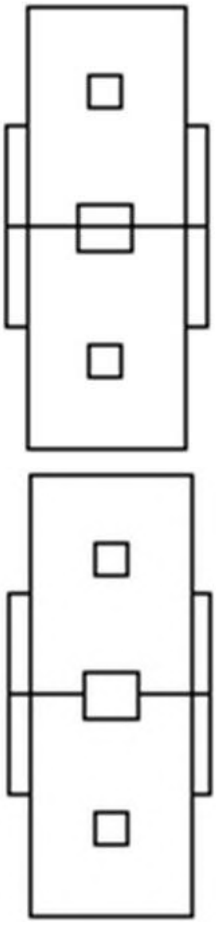
B



C

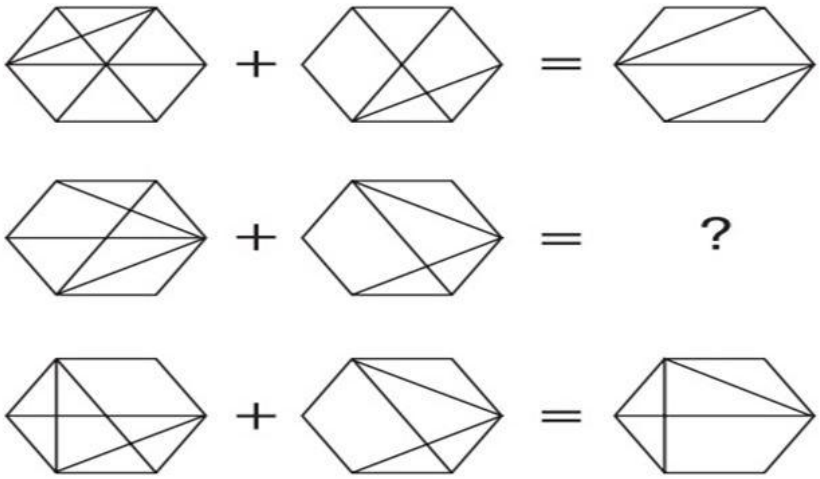
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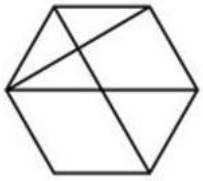
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D 

Correct Ans: **A**

Q49: Which hexagon below should replace the question mark?



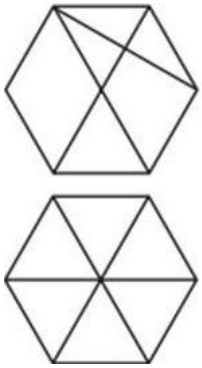
A 

B 

C

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D



Correct Ans: **D**

Q50: A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:

A 588 apples

B 600 apples

C 672 apples

D 700 apples

Correct Ans: **D**

Q51: If South-East becomes North, North-East becomes West and so on. What will West become?

A North-East

B North-West

C South-East

D South-West

Correct Ans: **C**

Q52: It has been established that _____

P : Einstein was
Q : although a great scientist
R : weak in arithmetic
S : right from his school days

The Proper sequence should be:

A SRPQ

B QPRS

C QPSR

D RQPS

Correct Ans: **B**

Q53: Arrange the words given below in a meaningful sequence.

1–Wall 2- Clay 3-House 4-Room 5-Bricks

A 5, 2, 1, 4, 3

B 2, 5, 4, 1, 3

C 2, 5, 1, 4, 3

D 1, 2, 3, 4, 5

Correct Ans: **C**

Q54: GRIHA is associated with

A Historic and heritage conservation.

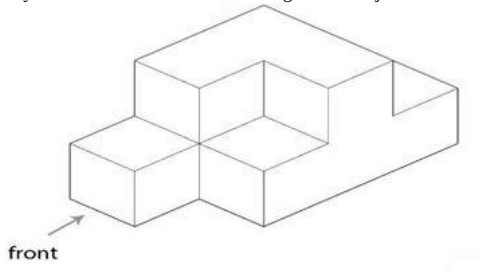
B Green building rating.

C Seismic activity monitoring.

D National building codes.

Correct Ans: **B**

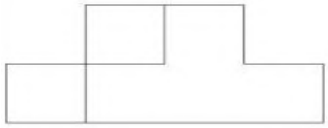
Q55: Identify the correct FRONT view for the given 3D object.



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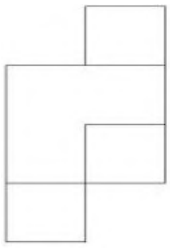
A



B



C



D



Correct Ans: **B**

Q56: Sill level refers to a

A window

B Roof

C Door

D Pipe

Correct Ans: **A**

Q57: The word sciography is associated with which of the following

A Wind

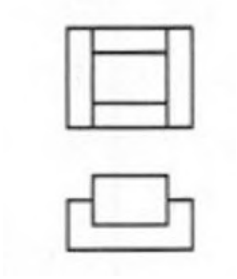
B Shadow

C Water

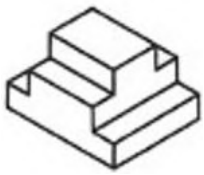
D Heat

Correct Ans: **B**

Q58: For the multi-view projection given below, select the correct corresponding isometric view in the row.



A



B



C

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D



Correct Ans: **C**

Q59: A Stupa is associated with

A Mughal architecture

B Greek architecture

C Gothic architecture

D Buddhist architecture

Correct Ans: **D**

Q60: Lets say you have three identical cubes which you then join together so that each cube is covering atleast one face of another cube. How many faces of the three cubes are visible now?

A 12

B 14

C 18

D 15

Correct Ans: **B**

Q61: 1. Draw a visually appealing composition using 3 squares, 2 rectangles, 1 triangle and 1 circle. Colour it using three colours in a medium of your choice. The Composition should denote one of the following:

a. Swatchh Bharat, b. Global Peace, c. Harmony

(Write the theme title below your sketch)

Q62: Recollecting the most memorable holiday with your family draw any scene outdoors showing at least one member of your family. Your drawing should suggest to the viewer your location- for example showing a part of a well-known landmark/ building or through natural location/ trees etc.

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