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National Aptitude Test in Architecture (NATA) 2018

Section : Mathematics

Q.1 An angle which is greater than 180° but less than 360° is known as

Question ID : 833493134
Chosen Option : 2
Marks : 2.00

Ans
✗ 1. a right angle
✓ 2. a reflex angle
✗ 3. an alternate angle
✗ 4. an adjacent angle

Q.2 The equation of the plane passing through the point (1, -1, 2) and parallel to the plane $3x + 4y - 5z = 0$ is

Question ID : 833493140
Chosen Option : 2
Marks : 2.00

Ans
✗ 1. $3x + 4y - 5z - 11 = 0$
✓ 2. $3x + 4y - 5z + 11 = 0$
✗ 3. $3x + 4y - 5z + 1 = 0$
✗ 4. $3x + 4y - 5z - 1 = 0$

Q.3 In a circle of radius 17cm, two parallel chords are drawn on opposite side of a diameter. The distance between the chords is 23cm. If the length of one chord is 16cm, then the length of the other chord is

Question ID : 833493136
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. 23cm
✗ 2. 15cm
✗ 3. 34cm
✓ 4. 30cm

Q.4 Three vertices of ΔABC are A(1, 4), B(-2, 2) and C(3, 2).Then the area of ΔABC is

Question ID : 833493138
Chosen Option : 4
Marks : 2.00

Ans
✗ 1. 7 sq. units
✗ 2. 15 sq. units
✗ 3. 6 sq. units
✓ 4. 5 sq. units

Q.5 The equation of the normal to the circle $x^2 + y^2 = 2x$ which is parallel to the straight line $x + 2y = 3$ is given by

Question ID : 833493143
Chosen Option : 3
Marks : 2.00

Ans
✗ 1. $x - 2y + 1 = 0$
✗ 2. $2x - y + 1 = 0$
✓ 3. $x + 2y - 1 = 0$
✗ 4. $x + 2y + 1 = 0$

Q.6 The tangents of two points A and B on the circle with centre O intersect at a point P. If, in quadrilateral PAOB, $\angle AOB : \angle APB = 5:1$, then the measure of $\angle APB$ is given by

Question ID : 833493139
Chosen Option : 2
Marks : 2.00

Ans
✗ 1. 45°
✓ 2. 30°
✗ 3. 15°
✗ 4. 60°

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Q.7 If $\tan A = 1$ and $\tan B = \sqrt{3}$, then $\cos(A+B)$ is equal to

Question ID : 833493133
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. $\frac{1-\sqrt{3}}{2\sqrt{2}}$
✗ 2. $\frac{1+\sqrt{3}}{2\sqrt{2}}$
✗ 3. $\frac{\sqrt{3}}{2\sqrt{2}}$
✗ 4. 1

Q.8 $\lim_{x\to\infty}\left(\sqrt{x+\sqrt{x+\sqrt{x}}}-\sqrt{x}\right)$ is equal to

Question ID : 833493141
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. $\log_e(2)$
✗ 2. 0
✗ 3. 2
✓ 4. 0.5

Q.9 The number of common tangents that can be drawn to two given circles is at the most

Question ID : 833493137
Chosen Option : 4
Marks : 0.00

Ans
✗ 1. one
✓ 2. two
✗ 3. three
✗ 4. four

Q.10 The distance between two parallel lines $5x - 12y + 2 = 0$ and $5x - 12y - 3 = 0$ is given by

Question ID : 833493142
Chosen Option : 2
Marks : 2.00

Ans
✗ 1. 1/13
✓ 2. 5/13
✗ 3. 5/14
✗ 4. 1/17

Q.11 If a, b, c are in A.P., as well as in G.P., then

Question ID : 833493125
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. $a = b = c$
✗ 2. $a = b \neq c$
✗ 3. $a \neq b = c$
✗ 4. $a \neq b \neq c$

Q.12 A straight highway leads to the foot of a 50m tall tower. From the top of the tower the angle of depression of the two cars on the highway are 30° and 60°. Then the distance between the two cars is

Question ID : 833493132
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. $\sqrt{3}/10$ m
✗ 2. $100/\sqrt{3}$ m
✓ 3. $100\sqrt{3}$ m
✗ 4. $10\sqrt{3}$ m

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Q.13 If $\tan(A-B)=\frac{1}{\sqrt{3}}$ and $\tan(A+B)=\sqrt{3}$, then the values of A and B are respectively

Question ID : 833493129
Chosen Option : 4
Marks : 2.00

Ans
✗ 1. $30^\circ, 30^\circ$
✗ 2. $30^\circ, 60^\circ$
✗ 3. $40^\circ, 20^\circ$
✓ 4. $45^\circ, 15^\circ$

Q.14 The sum of the 24 terms of the series $\sqrt{2}+\sqrt{8}+\sqrt{18}+\sqrt{32}+\ldots$ is

Question ID : 833493126
Chosen Option : 3
Marks : 0.00

Ans
✓ 1. $300\sqrt{2}$
✗ 2. $500\sqrt{2}$
✗ 3. $200\sqrt{2}$
✗ 4. $100\sqrt{2}$

Q.15 AB is a straight line and O is a point on the line AB. If one draws a line OC not coinciding with OA or OB, then the $\angle AOC$ and $\angle BOC$ are

Question ID : 833493135
Chosen Option : 3
Marks : 0.00

Ans
✓ 1. supplementary
✗ 2. equal
✗ 3. complementary
✗ 4. together equal to 130°

Q.16 If $A=\begin{pmatrix}0 & -i\\ i & 0\end{pmatrix}$ and $B=\begin{pmatrix}1 & 0\\ 0 & -1\end{pmatrix}$ are matrices, then AB + BA is

Question ID : 833493130
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. a unit matrix
✗ 2. an invertible matrix
✓ 3. a null matrix
✗ 4. a diagonal matrix

Q.17 The logarithm of $\frac{1}{256}$ to the base $2\sqrt{2}$ is

Question ID : 833493127
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. $\frac{-16}{3}$
✗ 2. $\frac{8}{3}$
✗ 3. $\frac{-8}{3}$
✗ 4. $\frac{-14}{3}$

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Q.18 If $\log_{\sqrt{5}}(x)+\log_{\sqrt[3]{5}}(x)\log_{\sqrt[4]{5}}(x)+\ldots$ up to 7 terms = 35, then the value of x is

Question ID : 833493128
Chosen Option : 3
Marks : 2.00

Ans
✗ 1. 75
✗ 2. 25
✓ 3. 5
✗ 4. 125

Q.19 If $A=\begin{pmatrix}1 & 0 & 2\\ 5 & 1 & x\\ 1 & 1 & 1\end{pmatrix}$ is a singular matrix, then the value of x is

Question ID : 833493131
Chosen Option : 2
Marks : 2.00

Ans
✗ 1. -11
✓ 2. 9
✗ 3. 11
✗ 4. -9

Q.20 Two girls and four boys are to be seated in a row in such a way that the girls do not sit together. In how many different ways can it be done?

Question ID : 833493144
Chosen Option : 3
Marks : 2.00

Ans
✗ 1. 240
✗ 2. 360
✓ 3. 480
✗ 4. 720

Section : General Aptitude

Q.1 Let Z denote the set of all integers. If a relation R is defined on Z as follows: $(x, y) \in R$ if and only if x is multiple of y, then R is

Question ID : 833493184
Chosen Option : 2
Marks : 0.00

Ans
✓ 1. reflexive, transitive but not symmetric
✗ 2. neither reflexive nor transitive but symmetric
✗ 3. reflexive, symmetric but not transitive
✗ 4. symmetric, transitive but not reflexive

Q.2 Find the odd figure in the problem

Question ID : 833493148
Chosen Option : 2
Marks : 0.00



A B C D

Ans
✓ 1. B
✗ 2. D
✗ 3. A
✗ 4. C

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Q.3 Geodesic domes are strong and rigid due to its _____ structural elements.

Question ID : 833493176
Chosen Option : 1
Marks : 0.00

Ans
✗ 1. Trapezoidal
✗ 2. Pentagonal
✓ 3. Triangular
✗ 4. Square

Q.4 The substitute for River sand in building construction is

Question ID : 833493169
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. Brick sand
✗ 2. Pit sand
✗ 3. Sea sand
✓ 4. Manufactured sand

Q.5 Which number replaces the question mark?

Question ID : 833493159
Chosen Option : 2
Marks : 0.00

5	6	9	16	?

Ans
✗ 1. 29
✗ 2. 27
✓ 3. 31
✗ 4. 32

Q.6 Which of the following compound propositions are tautologies?

(i) $(P \wedge \neg P) \rightarrow \neg P$
(ii) $(\neg Q \rightarrow P) \wedge Q$
(iii) $(Q \rightarrow P) \wedge (\neg P \wedge Q)$
(iv) $P \rightarrow (P \vee Q)$

Question ID : 833493183
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. (i) and (iv) but not (ii) and (i)
✗ 2. (ii) and (iv) but not (i) and (iii)
✗ 3. (i) and (ii) but not (iii) and (iv)
✗ 4. (ii) and (iii) but not (i) and (iv)

Q.7 Which of these is not a structural part of a building?

Question ID : 833493171
Chosen Option : 4
Marks : 2.00

Ans
✗ 1. Roof Framing structure
✗ 2. Foundation
✗ 3. Column & Beam
✓ 4. Doors and windows

Q.8 The internal angle formed by the edges of a cube in isometric projection is?

Question ID : 833493175
Chosen Option : 3
Marks : 2.00

Ans
✗ 1. 90 degree
✗ 2. 60 degree
✓ 3. 120 degree
✗ 4. 45 degree

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Q.9 A rectangular park 60m long and 40 m wide has two pathways of equal width running in the longitudinal and transverse direction and crossing each other at right angles in the middle of the park. The rest of the park is used as lawn. If the area of the lawn is 2109 sq.m, then what is the width of the pathway?

Question ID : 833493181
Chosen Option : 4
Marks : 2.00

Ans
✗ 1. 4.5m
✗ 2. 6m
✗ 3. 2.5m
✓ 4. 3m

Q.10 Answer the correct FRONT view for the given top view:

Question ID : 833493152
Chosen Option : 4
Marks : 2.00



A B C D

Ans
✗ 1. B
✗ 2. A
✗ 3. C
✓ 4. D

Q.11 2018 Pritzker prize was awarded to which architect?

Question ID : 833493163
Chosen Option : 1
Marks : 0.00

Ans
✗ 1. Tadao Ando
✓ 2. B.V. Doshi
✗ 3. Philip Johnson
✗ 4. I.M.Pei

Q.12 The predominant material used in the construction of Eiffel tower is?

Question ID : 833493178
Chosen Option : 1
Marks : 0.00

Ans
✗ 1. Stainless steel
✓ 2. Wrought Iron
✗ 3. Cast Iron
✗ 4. Aluminium

Q.13 One of the following answer figure is hidden in the given problem figure, in the same size and direction. Select which one is correct?

Question ID : 833493150
Chosen Option : 2
Marks : 2.00



A B C D

Ans
✗ 1. B
✓ 2. A
✗ 3. C
✗ 4. D

Q.14 Adobe is associated with _____ construction.

Question ID : 833493177
Chosen Option : 4
Marks : 2.00

Ans
✗ 1. Masonry
✗ 2. Wooden
✗ 3. Metal
✓ 4. Earthern

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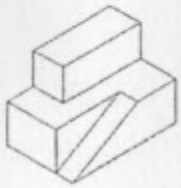
Q.15 Paris Summit discusses which of the following issues?

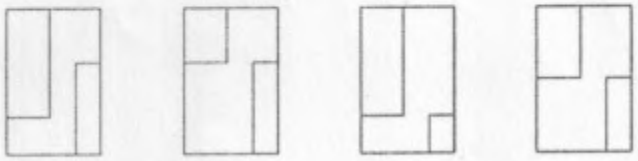
Question ID : 833493174
Chosen Option : 4
Marks : 0.00

Ans
✓ 1. Climate change
✗ 2. Built Heritage
✗ 3. Natural conservation
✗ 4. Migration

Q.16 Answer the correct TOP view for the given 3D object:

Question ID : 833493153
Chosen Option : 2
Marks : 2.00



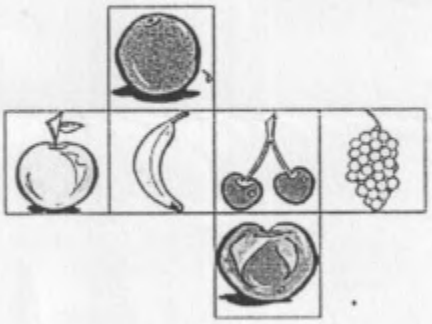


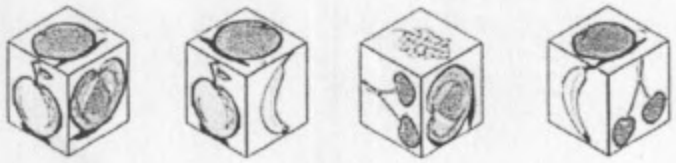
A B C D

Ans
✗ 1. C
✓ 2. A
✗ 3. B
✗ 4. D

Q.17 Which picture cube does the unfolded shape make?

Question ID : 833493160
Chosen Option : 1
Marks : 0.00





A B C D

Ans
✗ 1. B
✗ 2. A
✓ 3. C
✗ 4. D

Q.18 Which Indian city ranks in UNESCO World Heritage list 2017?

Question ID : 833493165
Chosen Option : 4
Marks : 0.00

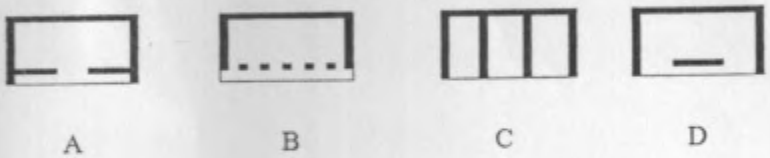
Ans
✗ 1. Kolkata
✓ 2. Ahmedabad
✗ 3. Chandigarh
✗ 4. Kanchipuram

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Q.19 Which of the following best illustrates a colonnade?

Question ID : 833493179
Chosen Option : 2
Marks : 0.00

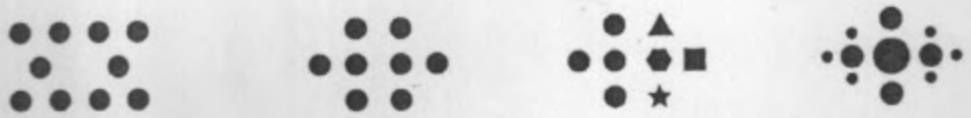


A B C D

Ans
1. A
2. C
3. B
4. D

Q.20 Which of the following composition best fits Hierarchy?

Question ID : 833493146
Chosen Option : 2
Marks : 2.00



A B C D

Ans
1. A
2. D
3. B
4. C

Q.21 Haveli's are traditional buildings found in

Question ID : 833493166
Chosen Option : 2
Marks : 2.00

Ans
1. Tamil Nadu
2. Rajasthan
3. Karnataka
4. Andhra Pradesh

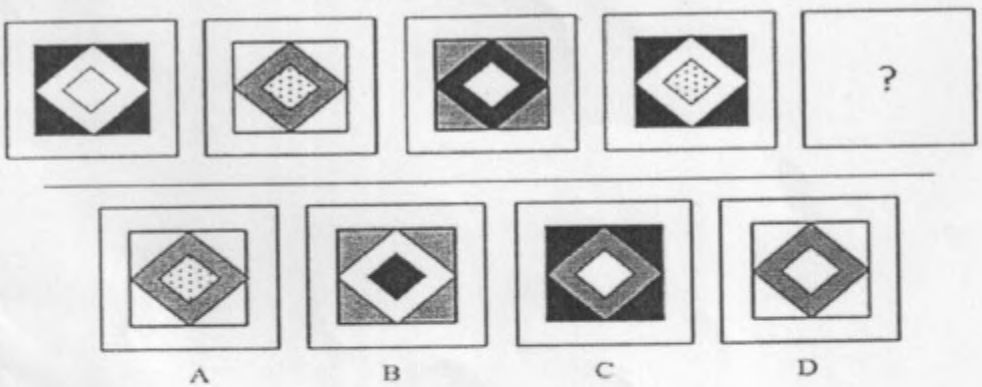
Q.22 Which of the following countries is below sea level

Question ID : 833493172
Chosen Option : 2
Marks : 0.00

Ans
1. Costa Rica
2. Maldives
3. Netherlands
4. Spain

Q.23 Choose logical sequence which replaces the question mark.

Question ID : 833493162
Chosen Option : 1
Marks : 2.00



A B C D

Ans
1. D
2. B
3. C
4. A

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Q.24 Answer the correct FRONT view for the given top view:

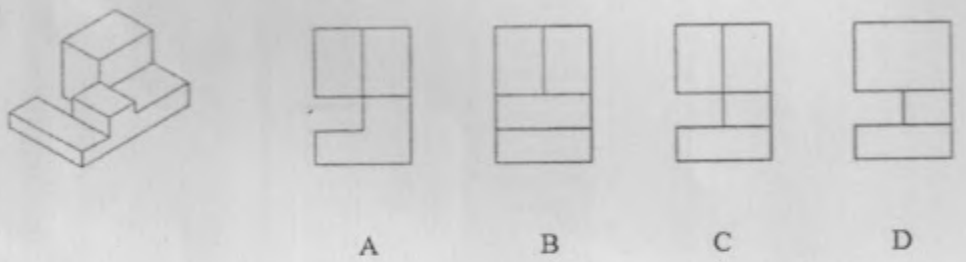
Question ID : 833493151
Chosen Option : 3
Marks : 2.00



Ans
✗ 1. A
✗ 2. D
✓ 3. C
✗ 4. B

Q.25 Answer the correct TOP view for the given 3D object:

Question ID : 833493154
Chosen Option : 4
Marks : 2.00



Ans
✗ 1. D
✗ 2. B
✗ 3. A
✓ 4. C

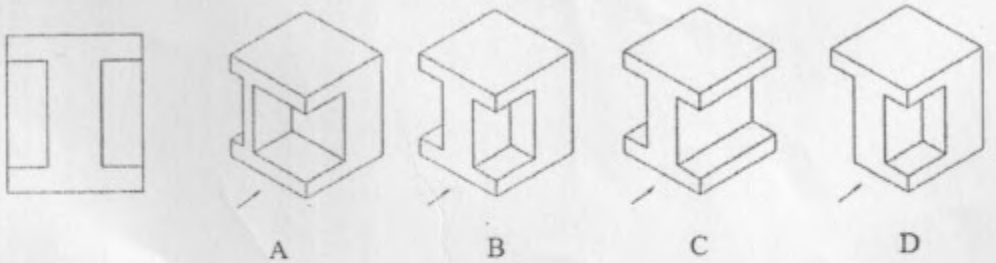
Q.26 When was the Earth Day 2018 celebrated?

Question ID : 833493164
Chosen Option : 3
Marks : 0.00

Ans
✓ 1. 22nd April, 2018
✗ 2. 23nd February, 2018
✗ 3. 25nd March, 2018
✗ 4. 12th January, 2018

Q.27 Answer the correct 3D view for the given elevation:

Question ID : 833493156
Chosen Option : 2
Marks : 2.00

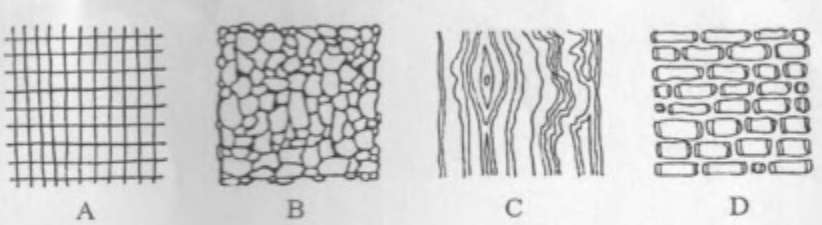


Ans
✗ 1. D
✓ 2. B
✗ 3. C
✗ 4. A

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Q.28 Which of the following best represents wood?

Question ID : 833493180
Chosen Option : 4
Marks : 2.00

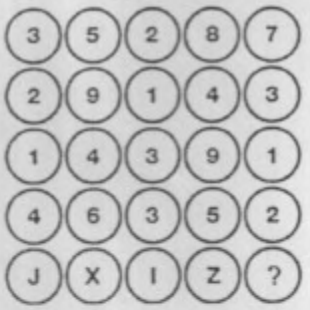


A B C D

Ans
✗ 1. B
✗ 2. D
✗ 3. A
✓ 4. C

Q.29 Which letter replaces the question mark?

Question ID : 833493161
Chosen Option : 2
Marks : 2.00



Ans
✗ 1. Y
✓ 2. M
✗ 3. K
✗ 4. N

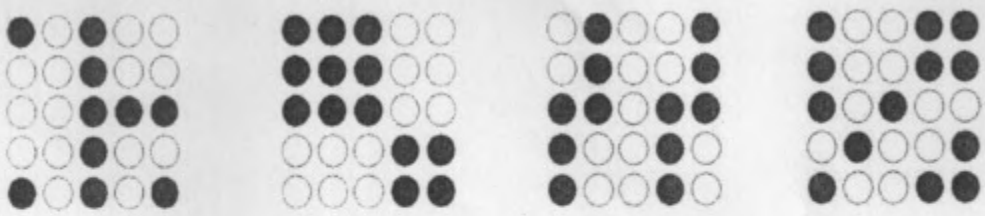
Q.30 Ganesh is older than her cousin Malavika. Malavika's brother Bharat is older than Ganesh. When Malavika and Bharat are visiting with Ganesh, all three like to play a game of Monopoly. Malavika wins more often than Ganesh does.

Question ID : 833493158
Chosen Option : 3
Marks : 2.00

Ans
✗ 1. Of the three, Ganesh is the oldest.
✗ 2. When he plays Monopoly with Malavika and Ganesh, Bharat often loses.
✓ 3. Of the three, Malavika is the youngest.
✗ 4. Ganesh hates to lose at Monopoly.

Q.31

Question ID : 833493145
Chosen Option : 3
Marks : 2.00



A B C D

Ans
1. C
2. D
3. B
4. A

Note: For this question, discrepancy is found in question/answer. Full Marks is being awarded to all candidates.

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Q.32 Which plantation helps in preventing erosion and protecting the coastal shoreline ?

Question ID : 833493167
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. Mangrove
✗ 2. Mango
✗ 3. Palm
✗ 4. Coconut

Q.33 Franco Indian architecture is found in which Indian city?

Question ID : 833493173
Chosen Option : 1
Marks : 2.00

Ans
✓ 1. Pondicherry
✗ 2. New Delhi
✗ 3. Ahmednagar
✗ 4. Kolkata

Q.34 The Indian state which is called as "Bamboo Queen" is

Question ID : 833493168
Chosen Option : 2
Marks : 0.00

Ans
✗ 1. West Bengal
✗ 2. Assam
✗ 3. Kerala
✓ 4. Mizoram

Q.35 Jodhpur is referred as

Question ID : 833493170
Chosen Option : 1
Marks : 0.00

Ans
✗ 1. White city
✗ 2. Golden city
✗ 3. Pink city
✓ 4. Blue city

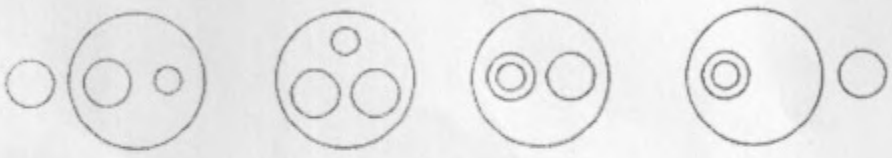
Q.36 On weekends, Mr. Sanjay spends many hours working in his vegetable and flower gardens. Mrs. Sanjay spends her free time reading and listening to classical music. Both Mr. Sanjay and Mrs. Sanjay like to cook.

Question ID : 833493157
Chosen Option : 3
Marks : 0.00

Ans
✓ 1. Mr. Sanjay enjoys planting and growing vegetables.
✗ 2. Mrs. Sanjay cooks the vegetables that Mr. Sanjay grows.
✗ 3. Mr. Sanjay does not like classical music.
✗ 4. Mrs. Sanjay enjoys reading nineteenth century novels.

Q.37 Which of the following diagrams indicates the best relation between Paris, France, Italy and World?

Question ID : 833493182
Chosen Option : 2
Marks : 2.00

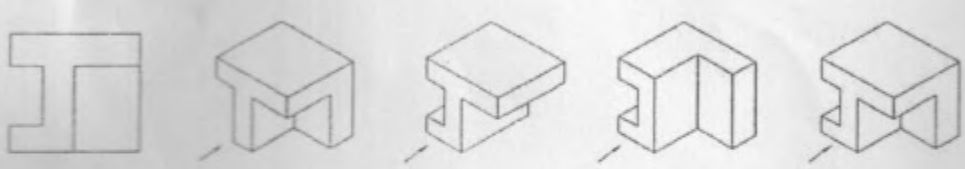


Ans
✗ 1. B
✓ 2. C
✗ 3. D
✗ 4. A

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Q.38 Answer the correct 3D view for the given elevation:

Question ID : 833493155
Chosen Option : 1
Marks : 2.00



A B C D

Ans
✓ 1. D
✗ 2. A
✗ 3. C
✗ 4. B

Q.39 Which composition best fits variety?

Question ID : 833493147
Chosen Option : 3
Marks : 2.00



A B C D

Ans
✗ 1. A
✗ 2. B
✓ 3. C
✗ 4. D

Q.40 Find the odd figure in the problem

Question ID : 833493149
Chosen Option : 1
Marks : 2.00



A B C D

Ans
✓ 1. D
✗ 2. B
✗ 3. C
✗ 4. A

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