

**CAREERS**360  
*A Career is a Life*

**UCEED  
2015-2018**

**QUESTION PAPERS**

Undergraduate Common Entrance Examination for Design

**UCEED 2018**

**Paper1**

### Paper Specific Instructions

1. The examination is of 3 hours duration. There are a total of **85 questions** carrying a total of 300 marks. The paper is divided into three sections, **A, B** and **C**. All sections are compulsory. Questions in each section are of different types.
2. **Section A (80 Marks)** contains a total of 20 **Numerical Answer Type (NAT)** questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NO NEGATIVE** marking for this section. Each correct answer will be awarded 4 marks. Questions not attempted or answered incorrectly will be given zero marks. Questions from 1 to 20 belong to this section.
3. **Section B (100 Marks)** contains a total of 25 **Multiple Select Questions (MSQ)**. Each question may have **one or more than one correct choice(s)** out of the four given. A candidate gets 4 marks only if **ALL** the correct choices and **NO** wrong choices are selected for each question. There is **NO PARTIAL** marking and **NO NEGATIVE** marking for this section. Questions not attempted or with incorrect or incomplete answers will be given zero marks. Questions from 21 to 45 belong to this section.
4. **Section C (120 Marks)** contains a total of 40 **Multiple Choice Questions (MCQ)**. Each question has four choices out of which **ONLY ONE** is the correct answer. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive **-1** (minus 1) mark. Questions not attempted will be given zero marks. Questions from 46 to 85 belong to this section.
5. Calculators, charts, graph sheets, tables, cellular phone, smart watches and/or other electronic gadgets are **NOT** allowed in the examination hall.
6. Papers will be provided for rough work.

## Section A: Numerical Answer Type Questions

**Section A (80 Marks)** contains a total of 20 **Numerical Answer Type (NAT)** questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NO NEGATIVE** marking for this section. Each correct answer will be awarded 4 marks. Questions not attempted or answered incorrectly will be given zero marks. Questions from 1 to 20 belong to this section.

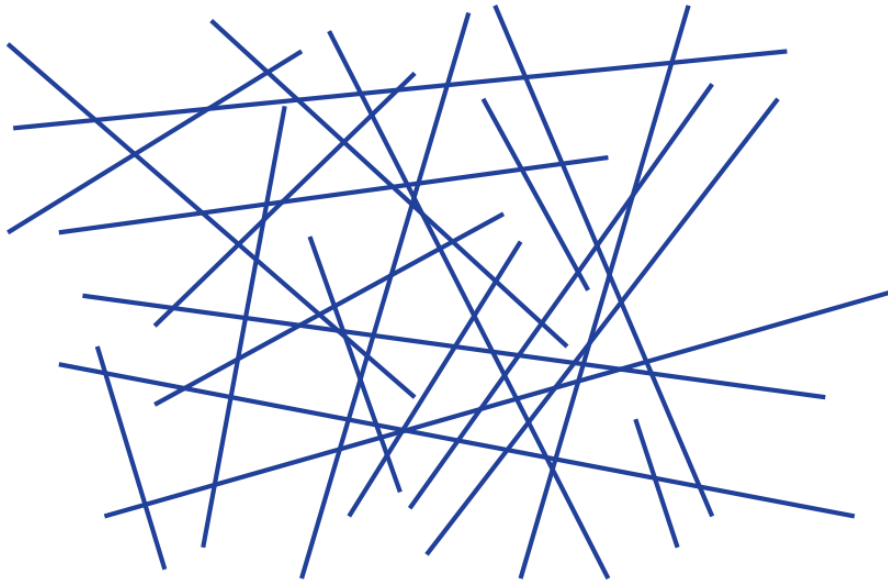
Q.01 How many different types of characters appear in the figure given below?

א	א	ב	ג	ד	ה	ו
ט	ס	ש	פ	ע	ק	צ
ת	מ	ס	ד	ך	א	ך
ד	ה	ו	א	ג	ב	ג
ע	ק	א	ט	ס	ב	א
ק	ה	ס	ב	ג	ק	ך
ט	ס	ש	ת	פ	ט	ע

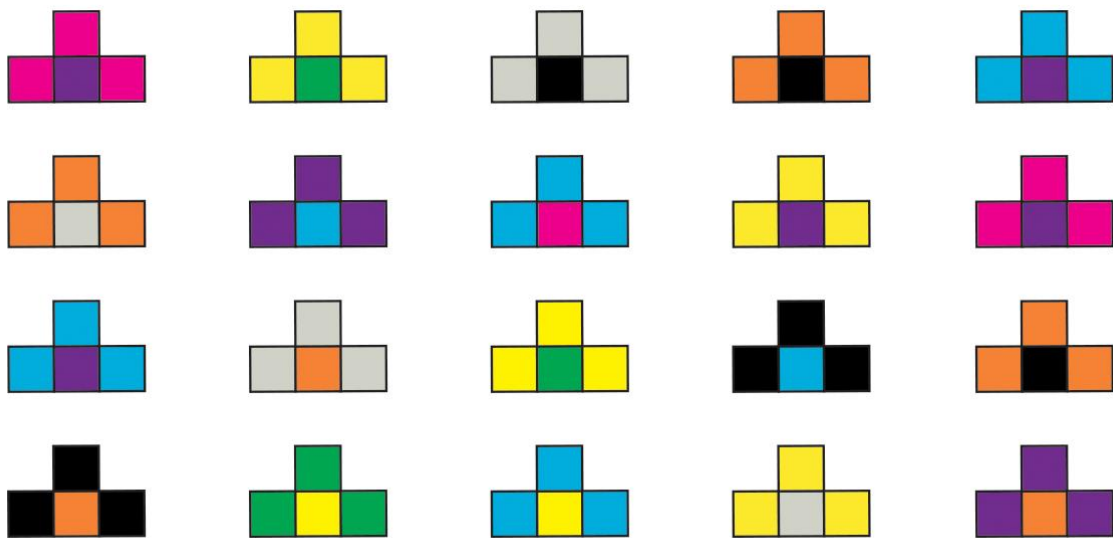
Q.02 Given below is a series of numbers. Which number will replace the question mark?

101, 103, 107, 109, ?, 127, 131, 137, 139, 149, 151, 157, 163

Q.03 How many lines are there in the image given below?



Q.04 How many configurations of blocks appear only once in the figure given below?



Q.05 What is the number of fonts used in the words given below?

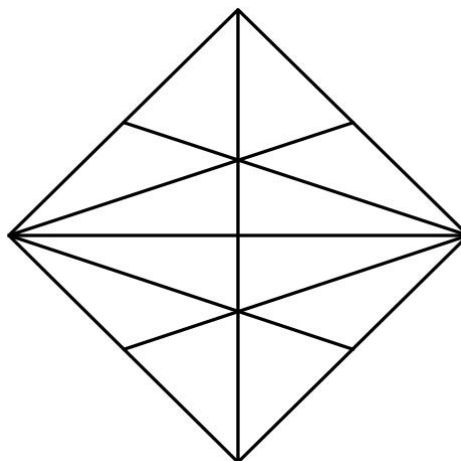
Mango Papaya Apple Banana  
Pineapple Orange Grapes Pear  
Guava Tomato Pomegranate

Q.06 What is the maximum number of whole cuboids of length = 2 cm, breadth = 1 cm and height = 1 cm that can be packed into a larger cuboid of length = 3 cm, breadth = 3 cm and height = 11 cm?

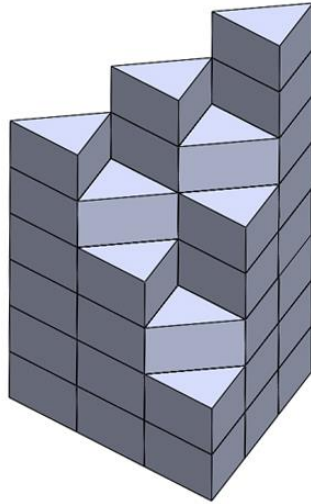
Q.07 Prof. Paityyam, in an attempt to create the world's most delicious dish, managed to merge a cylindrical *Idli* (diameter = 17 cm, height = 6 cm) with a torus shaped *medu wada* (inner hole diameter = 2 cm, outer diameter = 16 cm, and tube diameter i.e height of torus = 7 cm) such that the *medu wada* is parallel to the base of the *Idli* and the centroids of the two solids coincide. How many surfaces does the resulting solid contain?

Q.08 What is the maximum number of equilateral triangles (side 3 cm) that can be placed in a square of side 6.8 cm without overlapping each other?

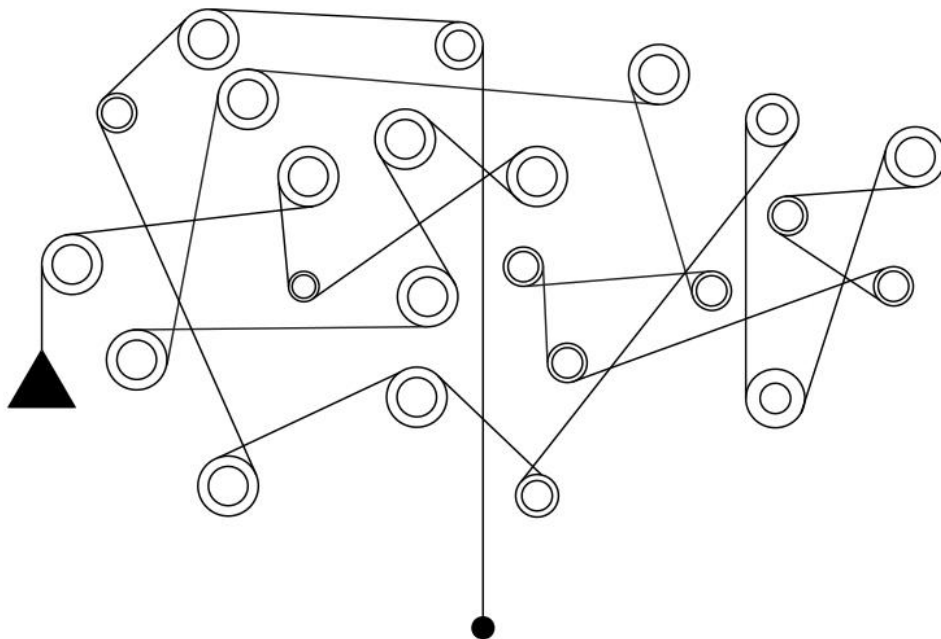
Q.09 How many triangles are there in the figure shown below?



Q.10 Count the number of stacked triangular pieces in the image shown below.



Q.11 Shown below is a combination of fixed pulleys. If the triangular load moves down, how many pulleys will rotate in the same direction as the smallest pulley (including itself)? The overlapping paths do not interfere with each other.

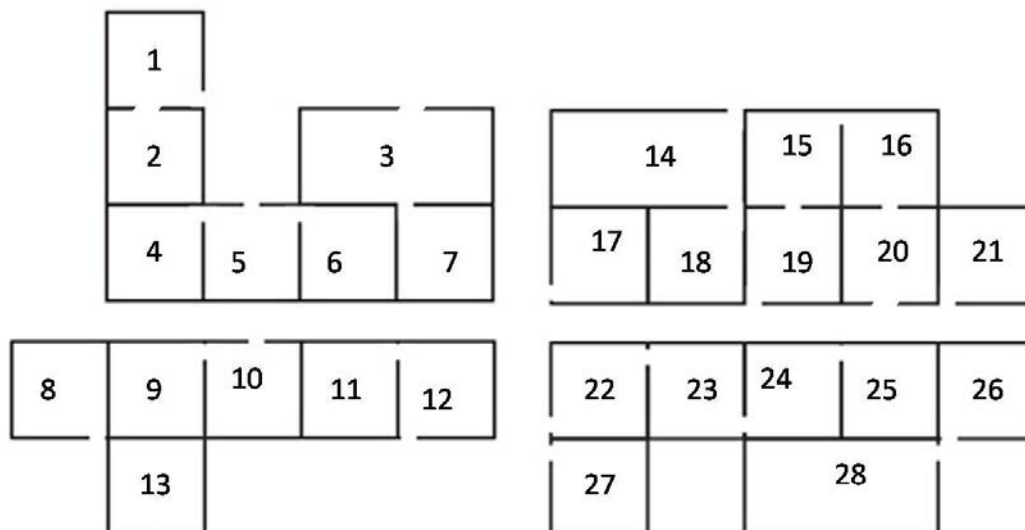


Q.12 The current time is 10 minutes past 3 in the afternoon. What will the angle be between the hour hand and the minute hand of the clock, 4 hours and 40 minutes from now?

Q.13 The word 'Ape' is an anagram of 'Pea'. How many of the following words are anagrams of animals?

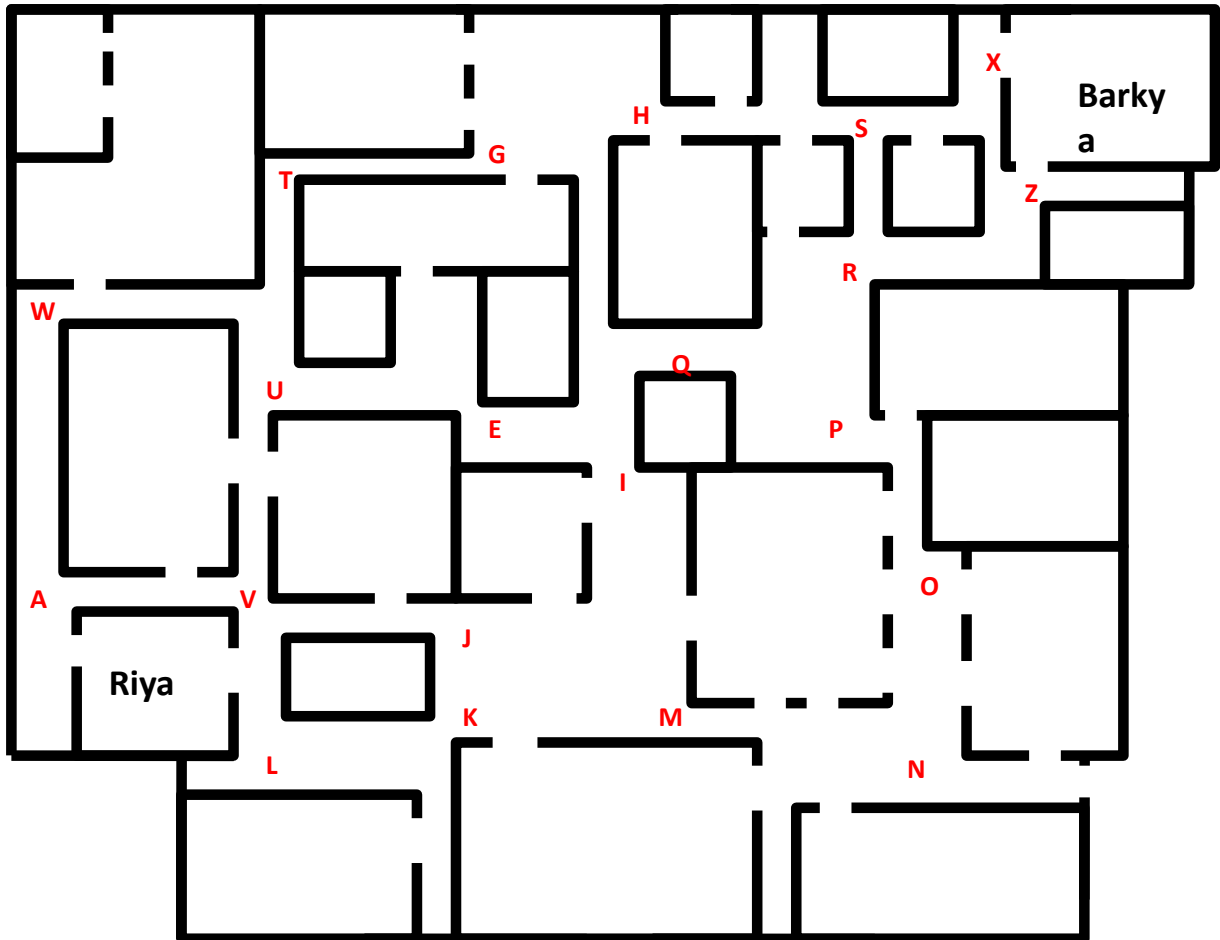
Glow, flow, loin, sit, balm, bare, god, lane, act, tab, bit, tar, reef

Q.14 Privacy of a space depends on the level of closure it has from its surroundings i.e. the difficulty of accessing that space from outside the house. The figure below shows the plans of four houses at a village street junction. Which is the most private room amongst all the rooms across all the houses?

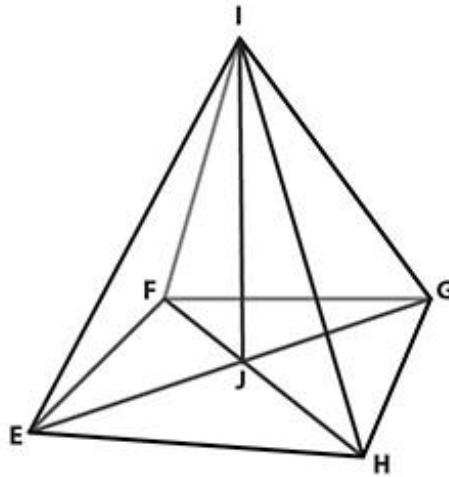




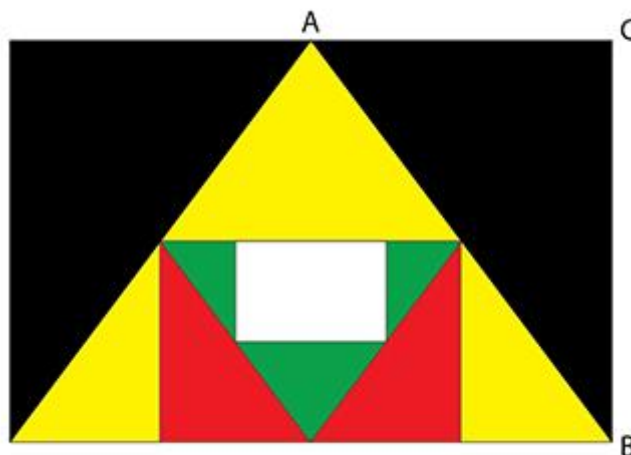
Q.15 The figure below shows the layout plan of the conservative Themmalwadi village which consists of a cluster of houses. Black lines represent walls and the openings in those walls represent either windows or doors. Also marked are the houses of Riya (who lives with her family) and Barkya, who are in love and having an affair. So, hidden from the eyes of the villagers, they regularly meet at night in Barkya's house. Themmalwadi is so conservative that even the sight of women on the street at night raises eyebrows. If Riya takes the path that has the least number of openings, what is the number of openings that she will have to pass by to get to Barkya's house?



Q.16 Shown in the figure is a pyramid with a square base, formed by vertices EFGH and a top vertex I. The diagonally opposite vertices, EG and FH are connected to form the vertex J at their intersection. The vertices I and J are also connected as shown. How many triangles are formed by all these vertices?

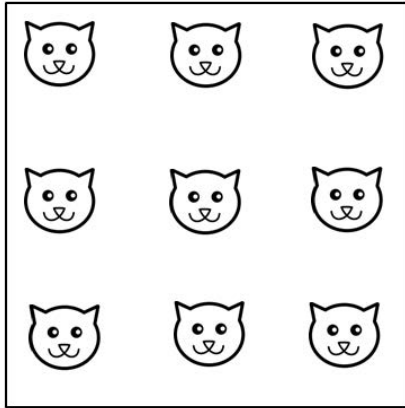


Q.17 The length and breadth of the white rectangle are 6 and 4 respectively. The proportions of the outer black, middle red and inner white rectangles are the same. What is the length of the hypotenuse of triangle ABC?



Q.18 Meethapur works on a barter system. Each person there loves different sweets. Mukund is willing to exchange 2 toffees for a lollypop and 3 ice creams for a toffee. Ranjana is willing to exchange one ice cream for 2 lollypops and 3 toffees for a lollypop. Mukund and Ranjana don't know each other, but both of them know Sita who loves toffees. Sita has one lollypop. She can meet Ranjana and Mukund only once (not necessarily in that order). What is the maximum number of toffees that Sita can get?

Q.19 Atul has nine cats that always fight with each other. He puts all of them into a square box. What is the least number of square partitions he must use to keep all the cats separated from each other? You may use any size of square partitions.



Q.20 How many differences are there in the two images shown below?



## Section B: Multiple Select Questions

**Section B (100 Marks)** contains a total of 25 **Multiple Select Questions (MSQ)**. Each question may have **one or more than one correct choice(s)** out of the four given. A candidate gets 4 marks only if **ALL** the correct choices and **NO** wrong choices are selected for each question. There is **NO PARTIAL** marking and **NO NEGATIVE** marking for this section. Questions not attempted or with incorrect or incomplete answers will be given zero marks. Questions from 21 to 45 belong to this section.

Q.21 On the left is a photograph. Which option(s) is/are part(s) of that photograph?



A



B



C



D

Q.22 If spaces and special characters are ignored in the following text, which country/countries is/are hidden in the text shown below?

I think the earth's ecosystem will collapse very soon. Natural resources have been exploited for far too long at the cost of the wellbeing of humankind, I am afraid. I don't want to stir another controversy but I ardently feel that the time has come for us to take urgent actions to save our planet from manmade disasters.

- A. Ghana
- B. India
- C. Peru
- D. Iran

Q.23 The CBI is investigating a dangerous gang of three criminals. The criminals are Donga, Tirudan and Daaku. The investigation team consists of Pradyuman, Daya, Fredricks, Salunkhe, Tarika and Purvi. Each criminal is to be investigated by exactly two investigators, and each investigator investigates exactly one criminal. The investigation is to be conducted subject to the following constraints:

Pradyuman and Daya do not investigate the same criminal.

Fredricks and Salunkhe investigate the same criminal.

If Fredricks investigates Tirudan, then Tarika must investigate Daaku.

Given these constraints, which of the following could be the acceptable assignment(s) of investigators to potential criminals?

- A. Fredricks & Salunkhe investigate Tirudan, Pradyuman & Daya investigate Donga and Tarika & Purvi investigate Daaku
- B. Fredricks & Salunkhe investigate Donga, Tarika & Pradyuman investigate Tirudan and Daya & Purvi investigate Daaku
- C. Tarika & Purvi investigate Donga, Fredricks & Pradyuman investigate Tirudan and Salunkhe & Daya investigate Daaku
- D. Daya & Purvi investigate Tirudan, Tarika & Pradyuman investigate Daaku and Fredricks & Salunkhe investigate Donga

Q.24 If,  $9 + 8$  means 9 is the child of 8, and  $7 * 6$  means that 6 is the wife of 7, then which of the following statements can be derived from  $2 + 3 * 1 + 4 * 5$ ?

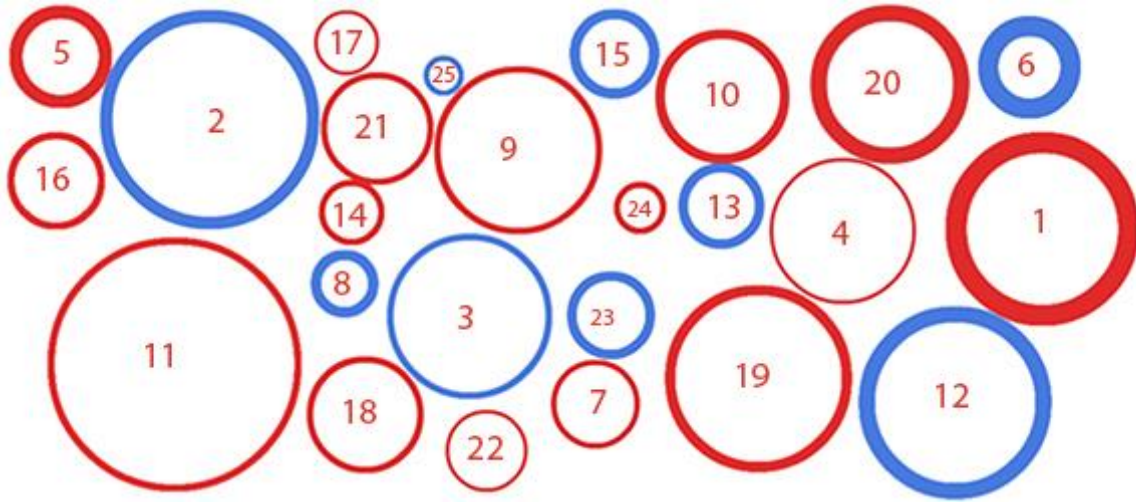
- A. 2 is the grandchild of 4
- B. 1 is the daughter of 5
- C. 5 is the grandfather of 3
- D. 1 is the mother of 2

Q.25 30 circles are given below, with a set of rules:

1. The bigger the circle, the farther away it is from us.
2. The thinner the line of the circle, the closer it is to us.
3. The red circles are farther away from us as compared to the blue circles.

Which of the options given below is/are TRUE?





- A) Circle 25 is the closest to us
- B) Circle 25 is farthest from us
- C) Circle 24 is closer to us than circle 14
- D) Circle 6 is closer to us than circle 8

Q.26 Which concept does this image by Escher illustrate?



- A. Tessellation
- B. Figure and Ground
- C. Mise en Scene
- D. Collage

Q.27 Read the passage given below, written by Nick Hughes:

“We tend to treat power as though it is intrinsically valuable. We seek it out and covet it, quite irrespective of how we might wield it and what it might get us. One need only look at the history of totalitarian politics to recognise this tendency in its most grotesque form. But power isn’t intrinsically valuable, it’s only instrumentally valuable – valuable as a means to an end. And whether or not they are objectively valuable, the ends that matter to us, the things that we care about most – our relationships, our projects and goals, our shared experiences, social justice, the pursuit of knowledge, the creation and appreciation of art, music and literature, and the future and fate of ours and other species – do not depend to any considerable extent on our having control over a vast but largely irrelevant Universe. We might be distinctly lacking in power from the cosmic perspective, and so, in a sense, insignificant. But having such power and such significance wouldn’t make much of a difference anyway. To lament its lack and respond with despair and nihilism is merely a form of narcissism. Most of what matters to us is right here on Earth.”

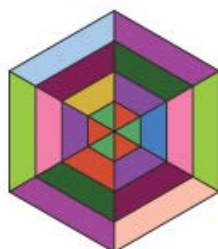
Which of the statements is/are TRUE of the paragraph above:

- A. The author argues that intrinsic value is distinct from instrumental value and that power possesses the latter of the two.
- B. “Humans and our significance in the universe”, is one of the themes discussed in the passage.
- C. The philosophies of nihilism and narcissism are suggested as remedies by the author.
- D. The author suggests that we look at the history of totalitarian politics to recognise that we shun power in the most grotesque form.

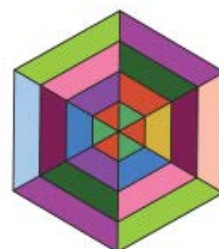
Q.28 Which option(s) is/are simple rotations of the figure given below?



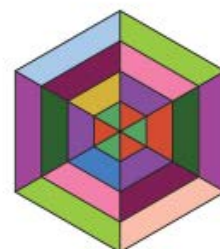
A



B



C



D

Q.29 Read the statements below:

All female and male natives in their country are strong.

Some men in their country are migrants.

All migrants in their country are not strong.

Not all migrants are women.

Based on the above, which conclusion(s) stated in the options is/are valid?

- A. Some women in their country are strong.
- B. Some migrants in their country are men.
- C. Some people in their country are not strong.
- D. All strong people in their country are women.

Q.30 Which of the following words are similar in meaning?

- A. Scribble
- B. Doodle
- C. Nibble
- D. Feeble

Q.31 Which of the following words is/are similar in meaning to 'Centre'?

- A. Heart
- B. Core
- C. Nucleus
- D. Nub

Q.32 Consider this poem:

Now, marriages happen in halls  
They used to happen at home  
Honeymoon too  
Before they wandered into halls  
Stage. Actors. Audiences from afar.  
Receptions never really took place  
Yet they would go on for days.  
Now, receptions include



Those who don't really figure.  
Show face, shove envelope (gifts not accepted)  
Grin for the camera.  
Get out. Not all that bad.  
Quick and efficient. No one really cares.

Which mood(s) does the poem evoke?

- A. Cynicism
- B. Nostalgia
- C. Happiness
- D. Lust

Q.33 Goethe said, "Doubt grows with knowledge". From this perspective, who would a knowledgeable person be?

- A. One for whom doubt does not grow with knowledge
- B. One who has no doubt
- C. One who has doubt
- D. One whose doubt grows with knowledge

Q.34 Theory is already existing knowledge and Practice is knowledge that comes by 'doing'.

Based on this statement which of the following is/are TRUE?

- A. Theory precedes Practice.
- B. Practice is knowledge in action.
- C. Knowledge without 'doing' is Theory.
- D. Theory and Practice are one and the same.

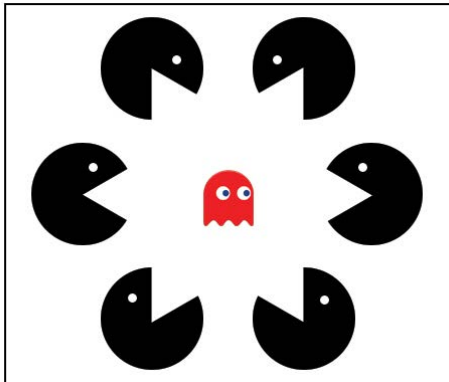
Q.35 Which of the following quotes celebrate(s) technology?

- A. "Did that search engine really know what you want, or are you playing along, lowering your standards to make it seem clever?"
- B. "I fear that we are beginning to design ourselves to suit digital models of us, and I worry about a leaching (leakage) of empathy and humanity in the process"
- C. "The approach to digital culture I abhor would indeed turn all the world's book into one book".
- D. "What a computer is to me is the most remarkable tool that we can ever come up with. It's the equivalent of a bicycle for our minds".

Q.36 Consider the drip irrigation system in villages on hilly terrain. Which of the following statements is/are correct?

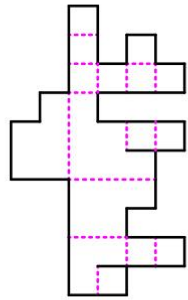
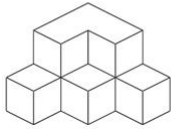
- A. Bamboo pipes can be used to divert perennial springs on the hilltops to the lower reaches by gravity.
- B. If the bamboo pipes have to cross a road they can be taken above the land.
- C. This irrigation system is useful for the places with high ground water level.
- D. The bamboo pipes could be replaced with PVC pipes.

Q.37 Six pacmen have joined hands to take revenge from an evil ghost. They are standing around in a circular formation. Lo and behold, a white star full of pure light emerges in the centre. In complete disbelief, the pacmen are mesmerized. Which of the gestalt laws of perception explain(s) the appearance of the star in the centre?

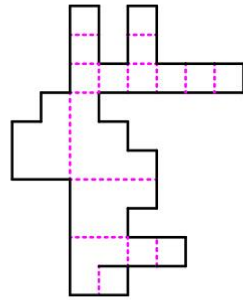


- A. Proximity
- B. Continuity
- C. Figure and ground
- D. Closure

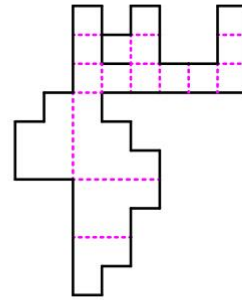
Q.38 If the black lines represent cutting lines and dotted pink lines are folding lines, which of the options correctly represent(s) the opened up surfaces of the solid shown?



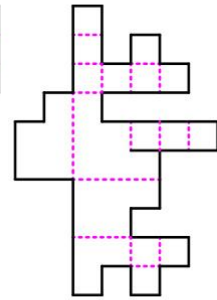
**A**



**B**



**C**



**D**

Q.39 Which of the following images belong(s) to Ajanta?



**H**



**I**



**J**



**K**



**L**



**M**

- A. H
- B. L
- C. K and M
- D. J and I

Q.40 Based on the paintings below, which of the following statements is/are TRUE?



H



I



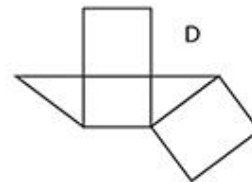
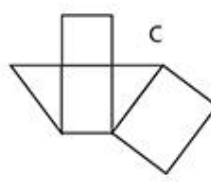
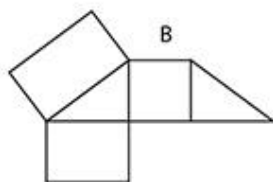
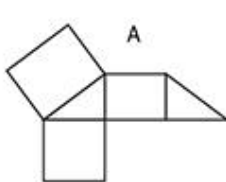
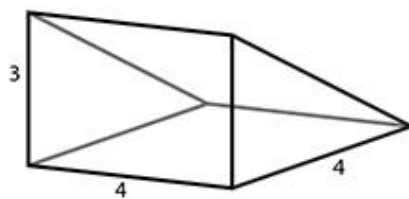
J

- A. These paintings use geometric grids for their construction.
- B. All three painting are from Maharashtra.
- C. All these paintings draw upon tribal folklore.
- D. These paintings are wall murals.

Q.41 Which of the following is/are greenhouse gas(es)?

- A. Hydrogen Sulphide
- B. Carbon Dioxide
- C. Chlorine
- D. Methane

Q.42 Which of the options represent(s) correctly the opened up surfaces of the solid shown?



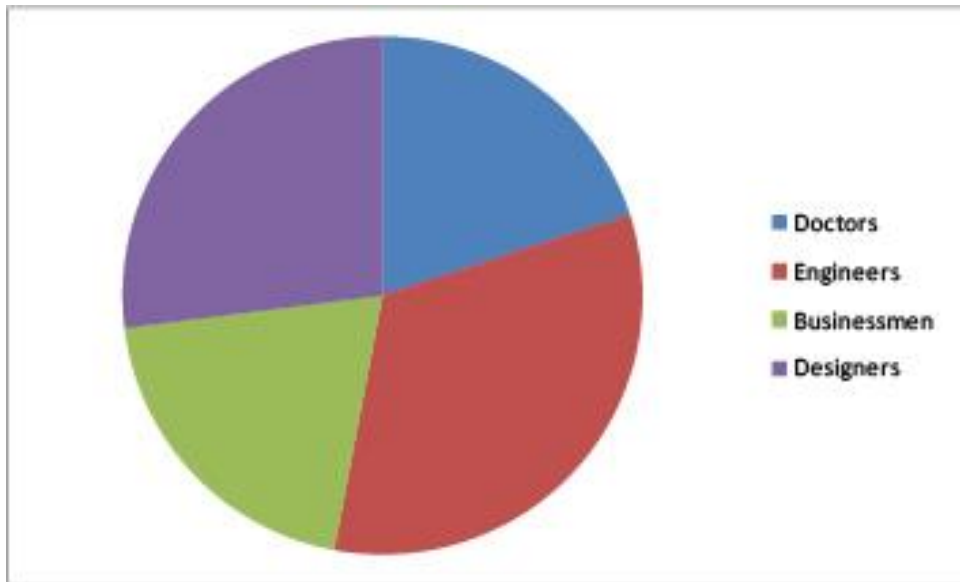
Q.43 Consider the following text by Edward Shanken:

“By 2000, it had become increasingly apparent that the exclusion and ghettoization confronting the practice and criticism of new media art and the larger historiography of art and technology required an explicit suturing strategy. In ‘Art in the Information Age’ (2001) I argued that by ‘interpreting conceptual art and art-and-technology as reflections and constituents of broad cultural transformations during the information age’ categorical distinctions can be relaxed, allowing parallels to be drawn between seemingly diverse theory of systems aesthetics and the notion of software as a metaphor for art. My analysis of works by Levine, Haacke and Kosuth in ‘Software’ led to the conclusion that in the information age, ‘meaning and value are not embedded in objects, institutions or individuals so much as they are abstracted in the production, manipulation and distribution of signs and information’. Finally, I implicitly applied Burnham’s systems approach to analyse the system by which art history is written. Using Haacke and Ascott as examples, I claimed that the historicization of an artist’s work as conceptual art or art and technology ‘says less about their work than it does about the institutional mechanisms that have created and reinforced categorical distinctions...at the expense of identifying continuities between them.”

Which of the statements is/are TRUE of the paragraph above?

- A. Historicization of an artist’s work speaks only of institutional mechanisms that create and define categories.
- B. Categorical distinctions do not allow parallels to be drawn between seemingly diverse practices.
- C. If software is a metaphor for art, meaning and value are more in the making and distribution of signs and information.
- D. Conceptual art cannot be interpreted as reflections of broad cultural transformations.

Q.44 The following diagram shows the distribution of population in an apartment building as per the profession of its residents.



Which of the following is/are correct?

- A. Doctors and businessmen combined is less than half of the total residents.
- B. About  $\frac{1}{3}$  of the population is engineers.
- C. Engineers and designers combined is about 60% of the residents.
- D. Doctors and businessmen combined is more than half of the total residents.

Q.45 In which of the following applications is a convex lens used?

- A. Peepholes
- B. Magnifying glass
- C. Microscope
- D. Car headlight

## Section C: Multiple Choice Questions

*Section C (120 Marks) contains a total of 40 Multiple Choice Questions (MCQ). Each question has four choices out of which ONLY ONE is the correct answer. There is NEGATIVE marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive -1 (minus 1) mark. Questions not attempted will be given zero marks. Questions from 46 to 85 belong to this section.*

Q.46 Who is the woman in this painting by Raja Ravi Varma?

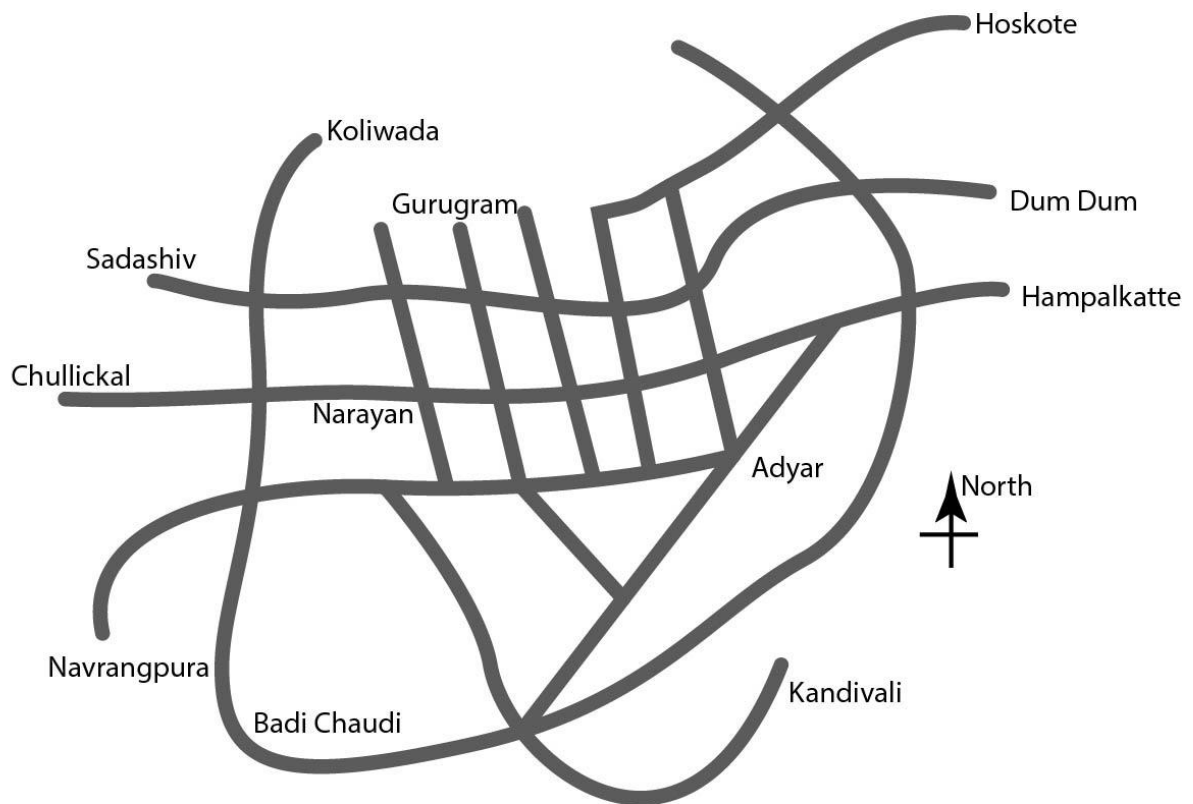


- A. Shakuntala
- B. Lakshmi
- C. Saraswati
- D. Damayanti

Q.47 Which option arranges the states in an ascending order in terms of area?

- A. Gujarat, Kerala, Uttar Pradesh, Rajasthan
- B. Gujarat, Kerala, Rajasthan, Uttar Pradesh
- C. Kerala, Gujarat, Uttar Pradesh, Rajasthan
- D. Kerala, Gujarat, Rajasthan, Uttar Pradesh

Q.48 Shown below is a map of a city with names of prominent localities. A man starts walking from Hampalkatte towards the west, takes the second right, second left, first left, third right, second left, and walks on straight to the end of the street. Where does he reach?



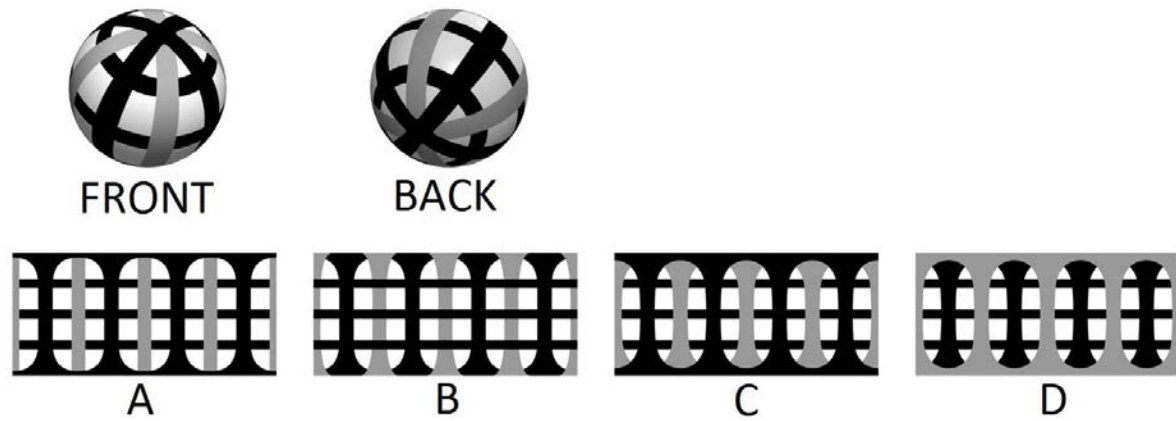
- A. Kandivali
- B. Gurugram
- C. Navrangpura
- D. Hoskote

Q.49 The door height of entrance of an Indian Public Hall is to be finalised. Which of the following should be considered to decide the height of the door frame?

- A. The height of tallest 5 percent of Indian male population.
- B. The height of tallest 50 percent of Indian female population.
- C. The average height of tallest 95 percent of Indian male and female population.
- D. The height of tallest 95 percent of Indian male child population.



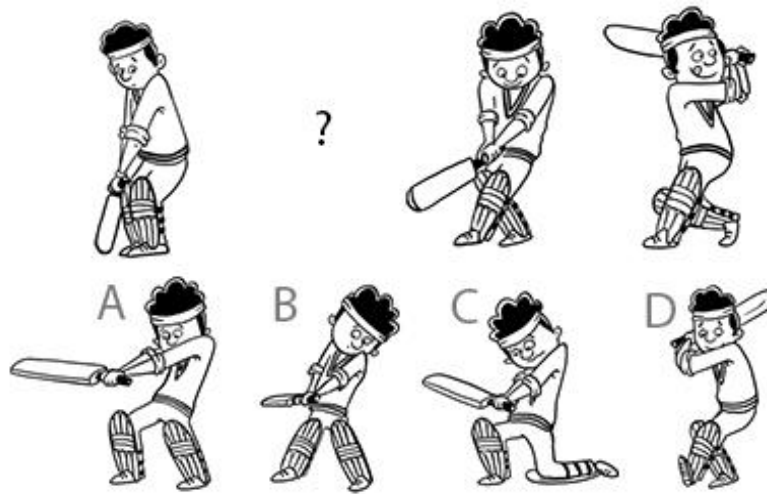
Q.50 Two different views of a sphere are shown below. Select the correct digital image that is mapped on the sphere.



Q.51 Which of these is an example of traditional embroidery from Punjab?



Q.52 Given below is a sequence of drawings from the animation of a cricket batsman performing a pull shot, with one missing drawing represented by a question mark. Which option would best replace the question mark?



Q.53 Which option will replace the question mark?

If  $\blacklozenge + \blacklozenge = \blacklozenge$   
 and  $\blacklozenge + \blacktriangle = \blacktriangle$   
 and  $\blacktriangle + \blacktriangle = \blacktriangle \blacklozenge$   
 and  $\blacktriangle + \blacktriangle \blacktriangle = \blacktriangle \blacklozenge \blacklozenge$   
 and  $\blacktriangle + \blacktriangle \blacklozenge = \blacktriangle \blacktriangle$   
 then  $\blacktriangle \blacklozenge + \blacktriangle \blacklozenge = ?$

- A  $\blacklozenge \blacktriangle \blacktriangle$
- B  $\blacklozenge \blacktriangle \blacklozenge$
- C  $\blacktriangle \blacklozenge \blacktriangle$
- D  $\blacktriangle \blacklozenge \blacklozenge$

Q.54 Shown below is a flower. Which is the leaf of the plant to which the flower belongs?



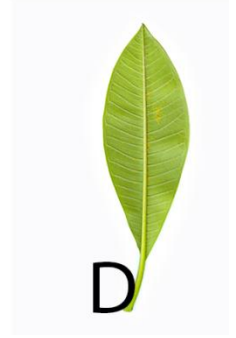
A



B



C



D

55 The word shown below is a specific font. From the options choose the letter that belongs to the same font.

மகிழ்ச்சி

ஆ

A

ஆ

B

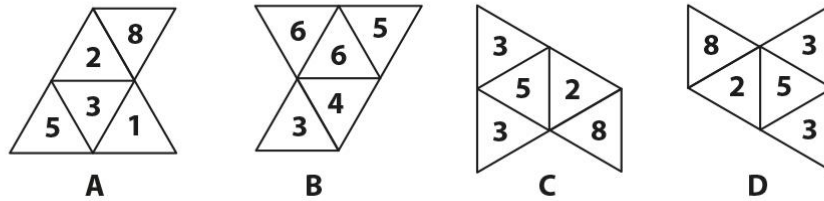
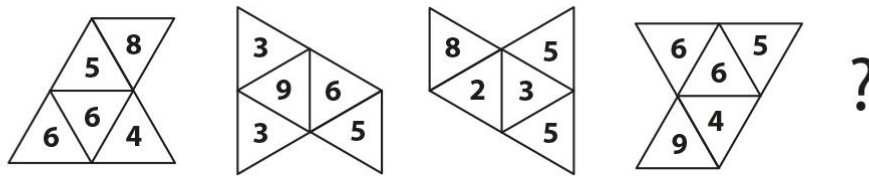
ஆ

C

ஆ

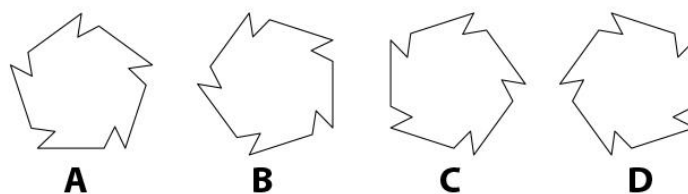
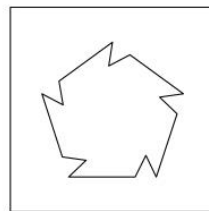
D

Q.56 Which option will replace the question mark?



Q.57 If the following operations were performed in the given sequence on the figure shown in the box, what would the resultant figure be?

- i. Rotate the figure clockwise by 90 degrees.
- ii. Flip along the vertical axis passing through its centre.
- iii. Flip along the horizontal axis passing through its centre.



Q.58 In the left column are names of some National Parks. In the right column are the names of the states in which they are located. Which option contains all correct pairs?

i. Jim Corbett	A. Rajasthan
ii. Ranthambore	B. Assam
iii. Kaziranga	C. Uttarakhand
iv. Kanha	D. Madhya Pradesh

- A. Jim Corbett-Assam; Ranthambore-Rajasthan; Kaziranga-Madhya Pradesh; Kanha-Uttarakhand
- B. Jim Corbett-Uttarakhand; Ranthambore-Madhya Pradesh; Kaziranga-Assam; Kanha-Rajasthan
- C. Jim Corbett-Assam; Ranthambore-Rajasthan; Kaziranga-Uttarakhand; Kanha-Madhya Pradesh
- D. Jim Corbett-Uttarakhand; Ranthambore-Rajasthan; Kaziranga-Assam; Kanha-Madhya Pradesh

Q.59 Figure 1 is unfolded into Figure 2 and individual letters are written on each face. Which option is the correct representation when it is folded back?

Figure 1

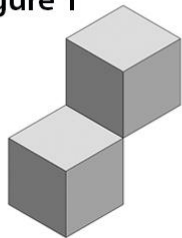
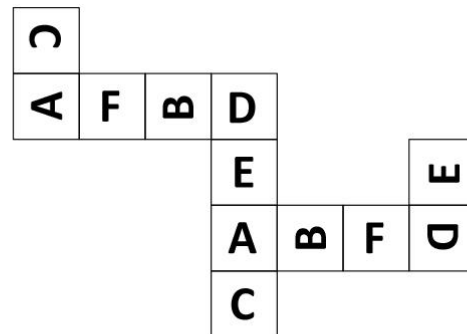


Figure 2



A



B



C



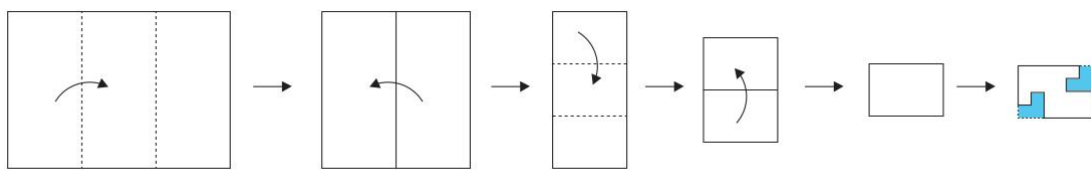
D

Q.60 The image below shows four different dance forms. Which states do these dance forms belong to?



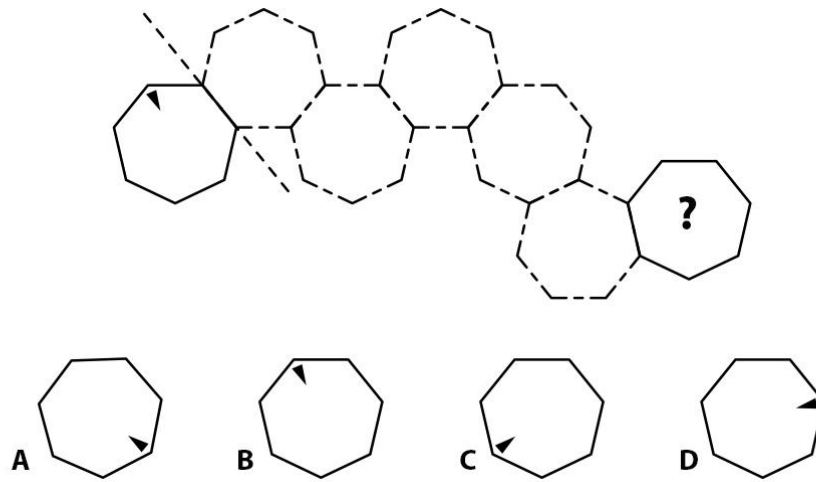
- A. 1-Kerala; 2-Orissa; 3-Andhra Pradesh; 4-Assam
- B. 1-Kerala; 2-Kerala; 3-Andhra Pradesh; 4-Orissa
- C. 1-Kerala; 2-Andhra Pradesh; 3-Kerala; 4-Assam
- D. 1-Orissa; 2-Assam; 3-Kerala; 4-Andhra Pradesh

Q.61 A paper is folded in the sequence shown in the image below. Blue patches are the areas that are cut out. What would the resultant figure be when the paper is unfolded?

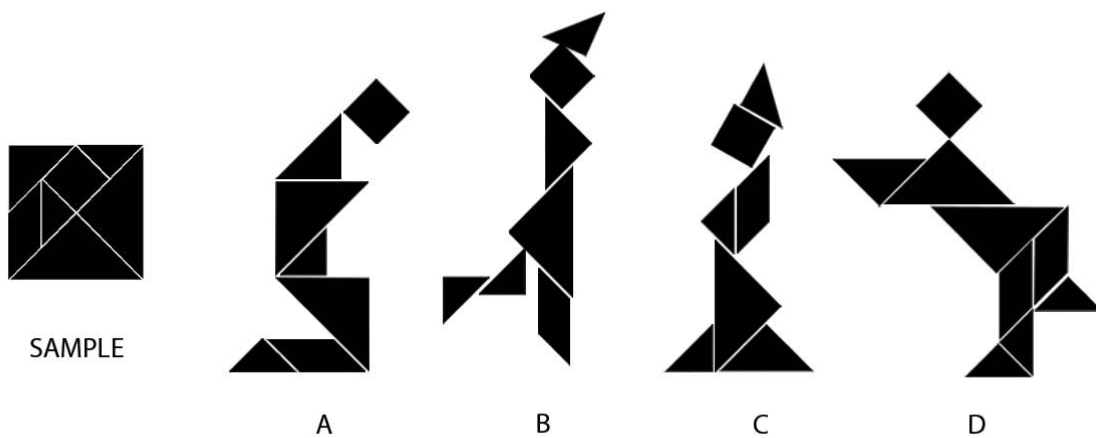


- A
- B
- C
- D

Q.62 If the heptagon with the triangle is mirrored along the common edge (depicted by a dotted line) between two consecutive shapes, what would the resultant figure be?



Q.63 Which of the following compositions is possible by rearranging pieces of Tangram puzzle (Sample given on the left)? Rotation of the pieces is allowed but flipping and scaling are not allowed.



- A) A
- B) B
- C) C
- D) D

Q.64 Consider the poem below:

Drip drip Drip Drip  
Dripdripdripdrip  
Painters far away  
Fishermen in oceans of colour

Who or what from the options, drip?

- A. Painters
- B. Fishermen
- C. Oceans
- D. Beaches

Q.65 Which of the following crawl on a surface?

- A. Helicopters
- B. Words
- C. Fruits
- D. Satellites

Q.66 Read the following lines from a poem:

Lad Bazaar *gallis*. Thin and crooked.  
On the prime prized precincts  
Sat sleeves rolled Ali  
Sipping sweet *suleimani*  
Props ready, goods ready  
Theatre of give and take

What profession could be attributed to Ali?

- A. Shopkeeper
- B. Teacher
- C. Pilot
- D. Traffic police



Q.67 Read the following lines and answer the question given below:

Pleading farts and ponderous burps  
Upset the silence of dignified insides,  
Sounds of occupation and exile.

What makes up dignified insides?

- A. Stomach
- B. Country
- C. Silence
- D. Circus

Q.68 The hour hand of a particular clock moves at half the speed, and the minute hand at 6 times the speed of a regular clock. If this strange clock matches time with the regular clock at 12 noon, what is the actual time when the strange clock next looks as shown below?



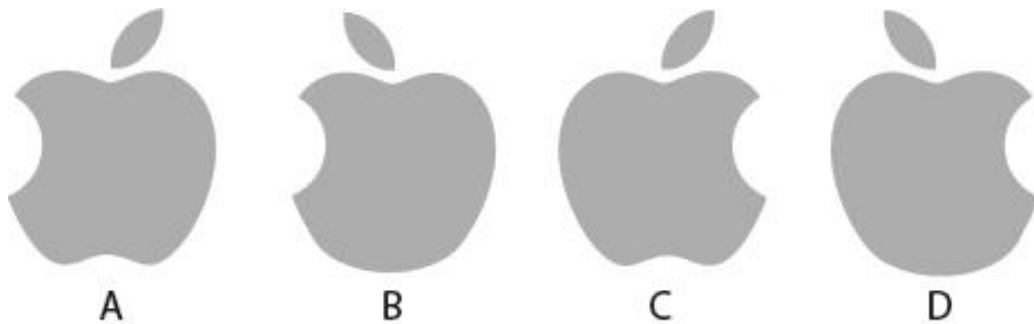
- A. 8.45
- B. 9.05
- C. 8.05
- D. 10.15

Q.69 Count the number of people with a moustache in the picture below:



- A. 12
- B. 16
- C. 18
- D. 22

Q.70 Which of the following is the correct logo of Apple Computers?



Q.71 What does a camera use to form an image?

- A. Convex lens
- B. Concave lens
- C. Both Convex and Concave lens
- D. Plano Concave lens

Q.72 The picture shows a man holding a traditional product in his hands. What is it used for?



- A. Separate rice from husk
- B. Catch fish in shallow water
- C. Separate tea leaves from dust and foreign particles
- D. Separate gravel from sand

Q.73 Which of the options closely match the Avatars with their associations?

<b>P Kurma</b>	<b>1 Karma</b>
<b>Q Parashurama</b>	<b>2 Dharma</b>
<b>R Rama</b>	<b>3 Complex</b>
<b>S Krishna</b>	<b>4 Amphibian</b>
<b>T Kalki</b>	<b>5 Destruction</b>

- A. P-1, Q-2, R-4, S-3, T-5
- B. P-4, Q-5, R-1, S-3, T-2
- C. P-4, Q-5, R-2, S-1, T-3
- D. P-1, Q-3, R-4, S-2, T-5

Q.74 Which of the options correctly match the paintings with corresponding art movements?



H



I



J



K



L

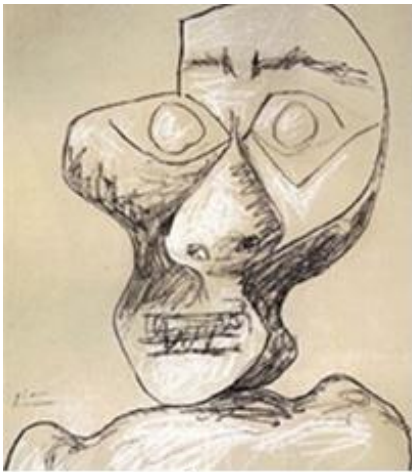


M

1.Expressionism    2.Realism    3.Pop Art    4.Pointilism    5.Op Art    6.Surrealism

- A. 1 – I; 2 – H; 3 – K; 4 – J; 5 – L; 6 – M
- B. 1 – J; 2 – K; 3 – M; 4 – I; 5 – H; 6 – L
- C. 1 – L; 2 – J; 3 – I; 4 – K; 5 – M; 6 – H
- D. 1 – H; 2 – K; 3 – M; 4 – I; 5 – L; 6 – J

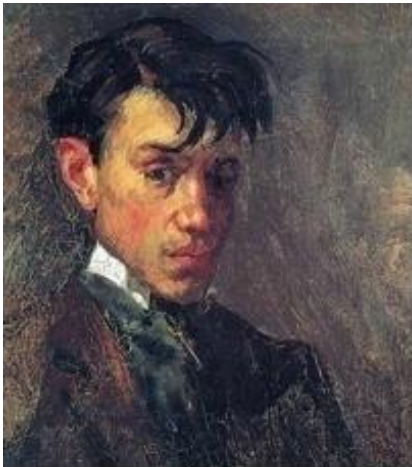
Q.75 If the following self portraits by Picasso are arranged in chronological order starting with the earliest painting, which one of these options is correct?



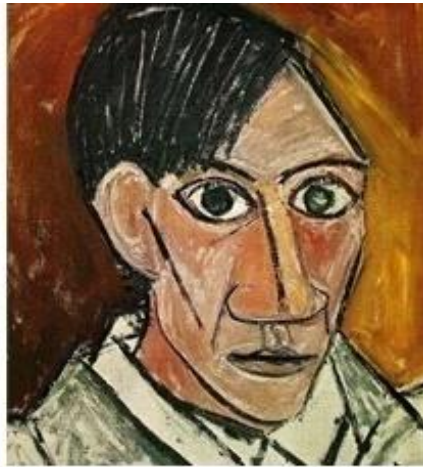
**A**



**B**



**C**



**D**

- A. B, C, A, D
- B. A, D, B, C
- C. C, B, D, A
- D. D, B, A, C



Q.76 Where is this famous painting from?

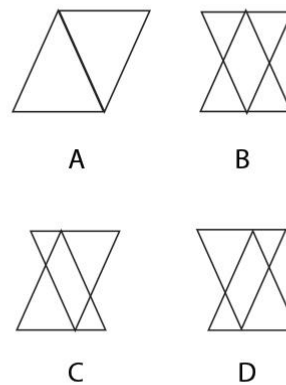
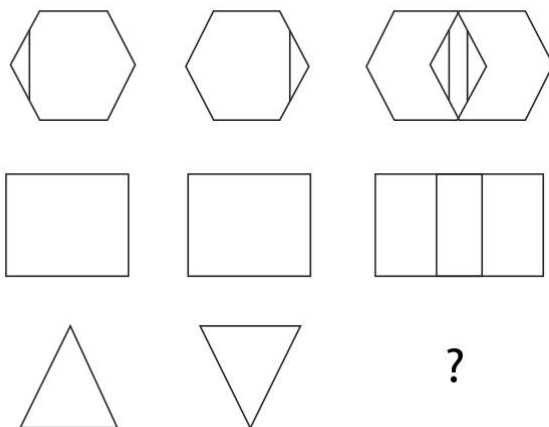


- A. Korea
- B. China
- C. Japan
- D. Indonesia

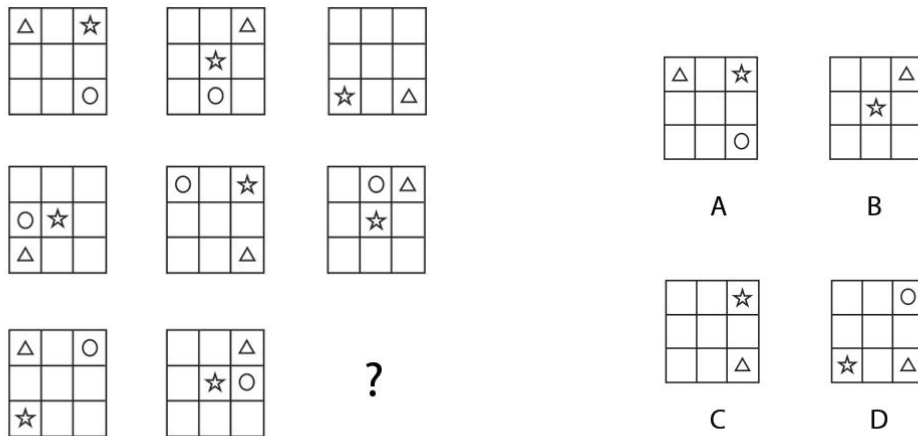
Q.77 Two men start at the same point, walk in opposite directions for 4 meters, turn left and walk another 3 meters. What is the distance between them?

- A. 6 meters
- B. 8 meters
- C. 10 meters
- D. 12 meters

Q.78 Which is the appropriate option that can replace the question mark to complete the series?



Q.79 Which is the appropriate option that can replace the question mark to complete the series?



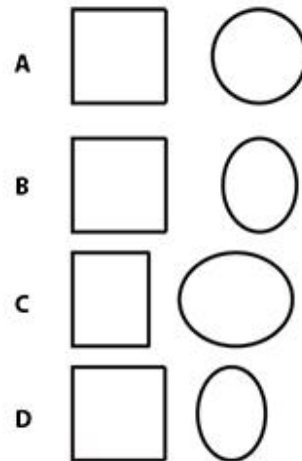
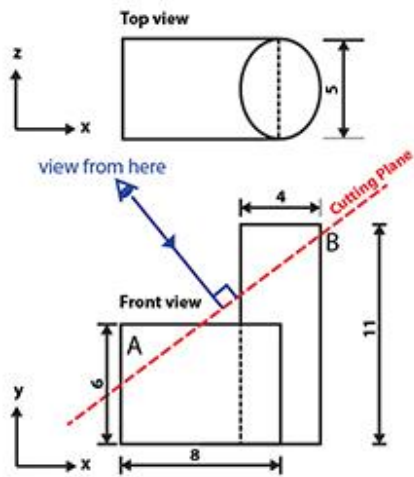
Q.80 Which of the following options is related to the phrase 'Easy to understand'?

- A. Functionality
- B. Usability
- C. Durability
- D. Aesthetics

Q.81 Which of the following options helps in establishing interchangeability of products?

- A. Standardization
- B. Stylization
- C. Diversification
- D. All of the above

Q.82 The figure shows a solid formed by the union of two solids. The first is an elliptic cylinder (cylinder with an elliptical cross-section) of shorter width 4 inches, larger width 5 inches, and height of 11 inches, and the second is a cuboid of 8 inches x 5 inches x 6 inches. The centre of the extruded ellipse is aligned with the edge of the cuboid as shown in the figure. If the resultant solid is cut by a plane (shown by the red dotted line), what will be the cross section of the resulting face as viewed from an angle perpendicular to the face?



Q.83 A matrix sequence is shown on the left. Which of the options given on the right can replace the matrix with question marks?

7	6	3
4	2	9
1	8	5

1

6	3	9
7	8	5
4	1	2

2

3	9	5
6	1	2
7	4	8

3

?	?	?
?	?	?
?	?	?

4

7	8	1
3	5	9
6	2	4

A

9	5	2
3	4	8
6	7	1

B

5	1	2
7	4	3
6	8	9

C

7	8	2
1	4	3
9	6	5

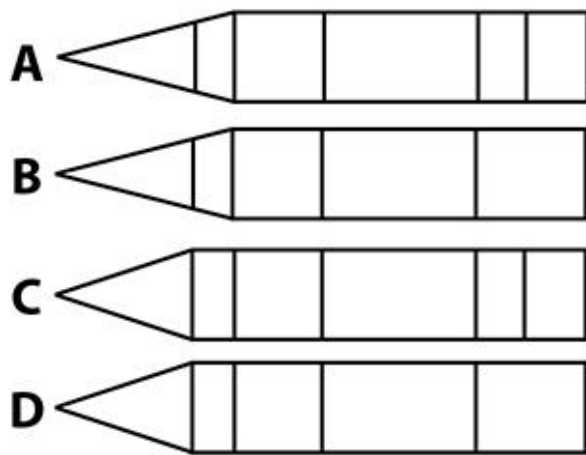
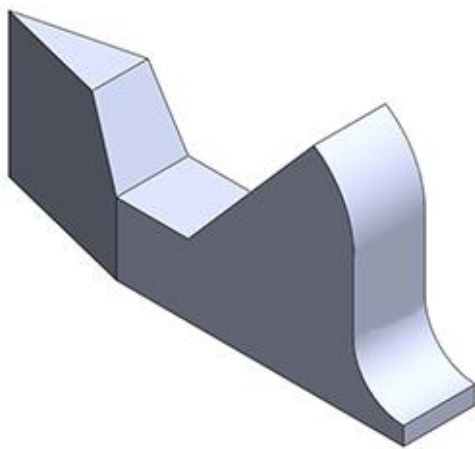
D



Q.84 What does “carbon footprint” refer to?

- A. The amount of carbon dioxide produced by a certain human activity.
- B. The total greenhouse gases produced by a certain human activity.
- C. Geographical mapping of the amount of carbon fixed from carbon dioxide by plants through photosynthesis.
- D. The measuring of the presence of prehistoric life based on the fossilised carbon content.

Q.85 Which is the correct top view for the solid shown?



\*\*\*\*\*

**Undergraduate Common Entrance Examination for Design**

**UCEED 2017**



**Indian Institute of Technology Bombay**

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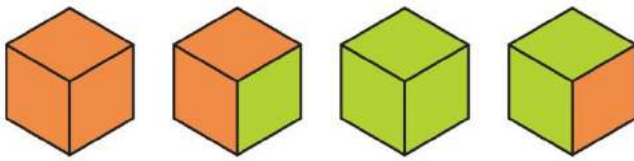
## Paper Specific Instructions

1. The examination is of 3 hours duration. There are in total **85 questions** carrying a total of 300 marks. The paper is divided into three sections, **A, B** and **C**. All sections are compulsory. Questions in each section are of different types.
2. **Section A (80 Marks)** contains a total of 20 **Numerical Answer Type (NAT)** questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NO NEGATIVE** marking for this section. Each correct answer will be awarded 4 marks. Questions not attempted or with wrong answers will be given zero marks. Questions from 1 to 20 belong to this section.
3. **Section B (100 Marks)** contains a total of 25 **Multiple Select Questions (MSQ)**. Each question may have **one or more than one correct choice(s)** out of the four given choices. A candidate gets 4 marks only if **ALL** the correct choices and **NO** wrong choices are selected for each question. There is **NO PARTIAL** marking and **NO NEGATIVE** marking for this section. Questions not attempted or with wrong answers will be given zero marks. Questions from 21 to 45 belong to this section.
4. **Section C (120 Marks)** contains a total of 40 **Multiple Choice Questions (MCQ)**. Each question has four choices out of which **ONLY ONE** is the correct answer. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive **-1** (minus 1) mark. Questions not attempted will be given zero marks. Questions from 46 to 85 belong to this section.
5. Calculators, charts, graph sheets, tables, cellular phone, smart watches and/or other electronic gadgets are **NOT** allowed in the examination hall.
6. Papers will be provided for rough work.

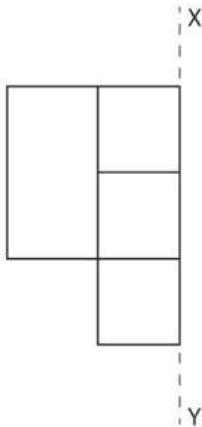
## Section A: Numerical Answer Type Questions

This section contains a total of 20 Numerical Answer Type (NAT) questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is NO NEGATIVE marking for this section. Each correct answer will be awarded 4 marks. Questions not attempted or with wrong answers will be given zero marks. Questions from 1 to 20 belong to this section.

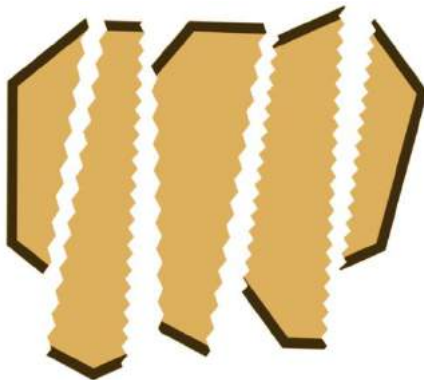
1. A 12cm x 12cm x 12cm wooden cube is painted and its four views are shown below. This cube is sliced into 64 smaller equal sized cubes of 3cm x 3cm x 3cm. How many of these small cubes will have exactly one green face and exactly one orange face in the same cube?



2. The following figure is cloned and the cloned figure is reflected along the XY axis. How many rectangles are present in the resultant figure?



3. Shown below are pieces of a regular polygon. How many sides does the polygon have?



4. How many different types of characters appear in the figure given below?

Б	Г	З	И	Г	И	Л
Л	Ж	Ө	Ц	Ч	Б	З
Щ	Ч	Б	Ш	А	П	Ц
Ч	Ё	Ю	Ж	Д	Ж	Ө
Д	П	Ф	Ж	Ь	Ю	Ь
А	Б	Ь	А	Л	Ь	Ж
Ө	Ж	П	З	Д	С	Б

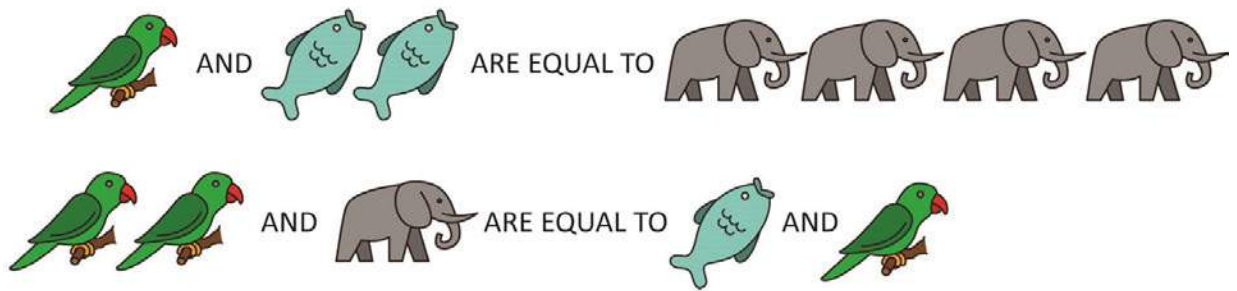
5. How many fonts are used in the given set of words?

मुनिः सर्वदा सर्वेषां विषये उत्तमम् एव  
चिन्तयन् अभयप्रदानं कुर्वन् सञ्चरति।  
तस्य अन्यस्मात् कस्मात् अपि भयं न  
भवति । यत् भावयति तत् भवति।

6. A shopkeeper is offering discounts for the festive season. The discount is based on a series. The following table depicts the first five combinations of this series. The purchase amount and discount are in rupees. How much is the discount for a purchase of Rupees 75,000?

Purchase	Discount
≥151 and <301	19
≥301 and <601	49
≥601 and <1201	109
≥1201 and <2401	229
≥2401 and <4801	469

7. Given the following equation, how many parrots are equal to one elephant?



8. How many of the alphabets using the font shown below when flipped on the horizontal axis, can still be read as capital alphabets in the same font?



9. Shown below in figure 1 is a layout of a chess board with one knight and several pawns. Given that the knight cannot land on any square that has a pawn, but can jump over it, the pawns cannot move, and the knight moves on a chess board as shown in figure 2, what is the least number of steps required for the knight to reach square x?

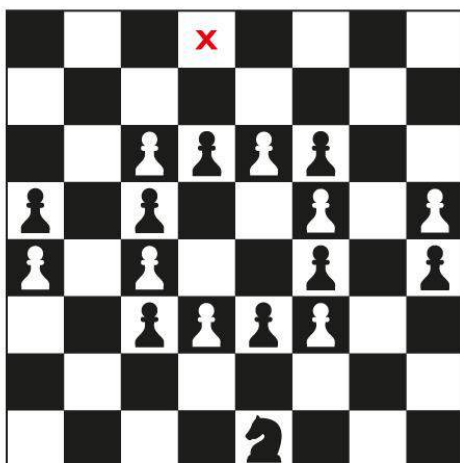


Figure 1

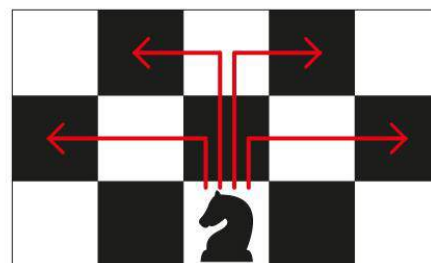


Figure 2

10. Shown below is a fan with red coloured patterns on it. When it rotates, the patterns make circles. How many red circles will be seen when the fan rotates?



11. Figure 1 has been constructed by overlapping some alphabets. Assuming the alphabets may be rotated, how many alphabets from figure 2 cannot be overlapped to fit within figure 1?

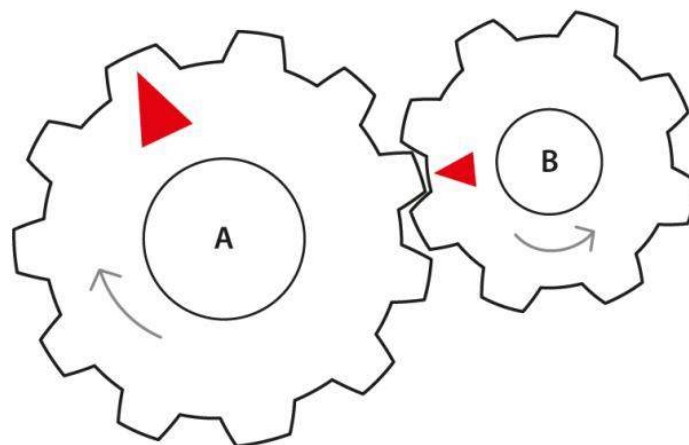


Figure 1

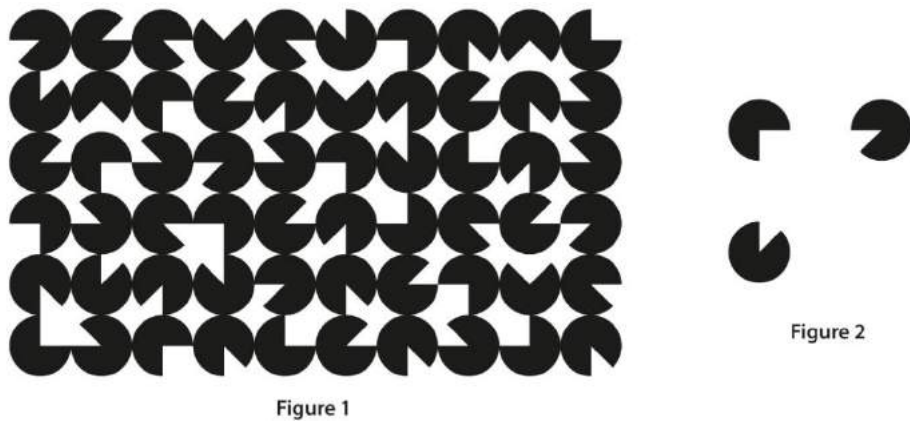


Figure 2

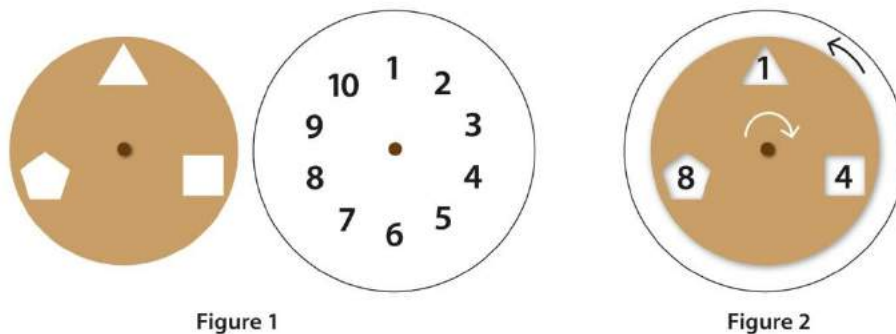
12. Two gears A and B with red arrows are shown below. Gear A rotates in clockwise direction. How many complete rotations does the gear B have to make for the red arrows to meet?



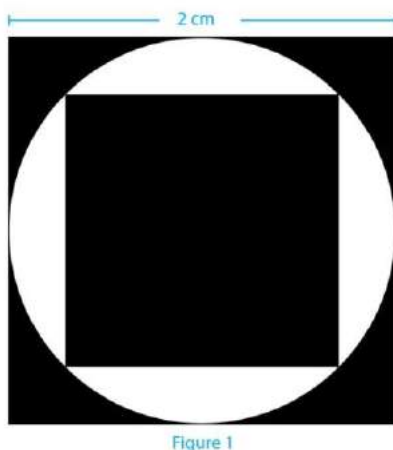
13. Figure 1 is an image composed of partial circles. Some cuts in the circles form the corners of triangles as shown in Figure 2. What is the total number of triangles whose three corners are formed by three circles?



14. There are two discs, one with numbers and other with three cut-outs as shown in the figure 1 and are overlapped as shown in figure 2. For every second, the numbered disc rotates two numbers in anti-clockwise direction and the cut-out disc rotates one number in the clockwise direction. If the arrangement at zero second is as shown in figure 2, what will be the number inside the pentagonal cut-out at 5 seconds?

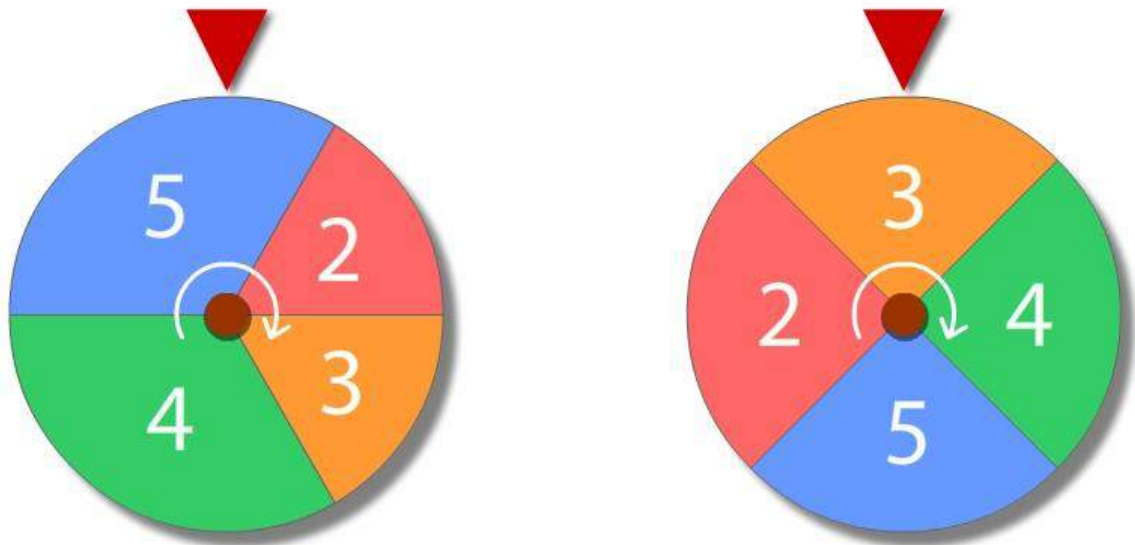


15. Figure 1 is formed by a black square inscribed in a white circle which in turn is inscribed in another black square of side 2 cm as shown. If a point is chosen at random inside figure 1, what is the probability that the point will be in the area shaded black?

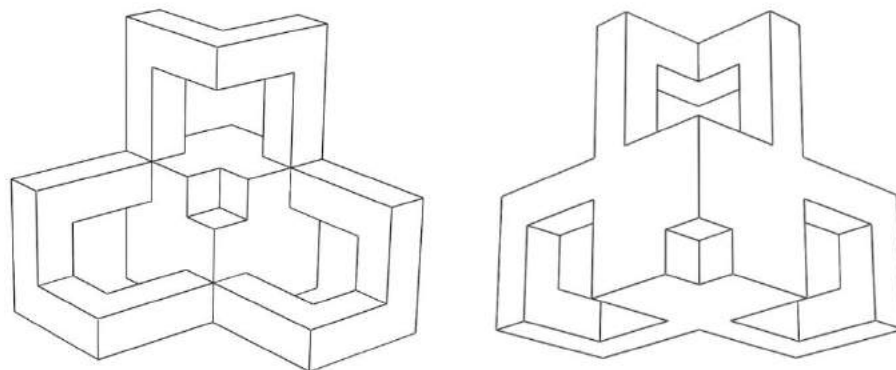




16. Two discs shown below are spun randomly and they come to rest after some time. What is the probability that the sum of the two numbers in the two discs pointed by the red arrows equals seven or more?



17. Shown below are two views of the same 3D object. How many non-contiguous surfaces are there in the object?



18. Sharmila takes the office bus home every day in the evening. She takes the five o' clock bus and gets off exactly at six o' clock at the bus stop nearest to her house. Her husband driving from home picks her up at the bus stop, and they drive back home. One day Sharmila decided to take the four o' clock bus and reached her bus stop at five o' clock. Thinking that her husband won't be able to pick her up earlier than usual, she decided to walk home. At some point during her walk, her husband picked her up and they reached home ten minutes earlier than they usually reach home. Assuming that Sharmila's husband always drives at a constant speed, and that on this occasion he left home as usual, how long (in minutes) Sharmila walked before she was picked up?

19. A  $3 \times 3$  grid as shown in figure 1 is to be filled with numbers 1 to 9 according to the following rules:

- 8 is above 9 and to the right of 2
- 3 is to the right of 7 and above 9 which is to the left of 4
- 2 is to the left of 5
- 7 is above 6 and 2
- 1 is above 5
- 'To the left of' or 'to the right of' means in the same row
- 'Above' or 'below' means in the same column

What is the sum of the three numbers in the middle row?

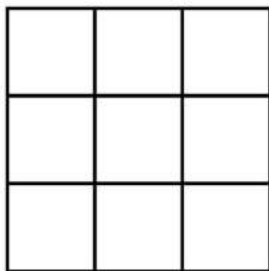
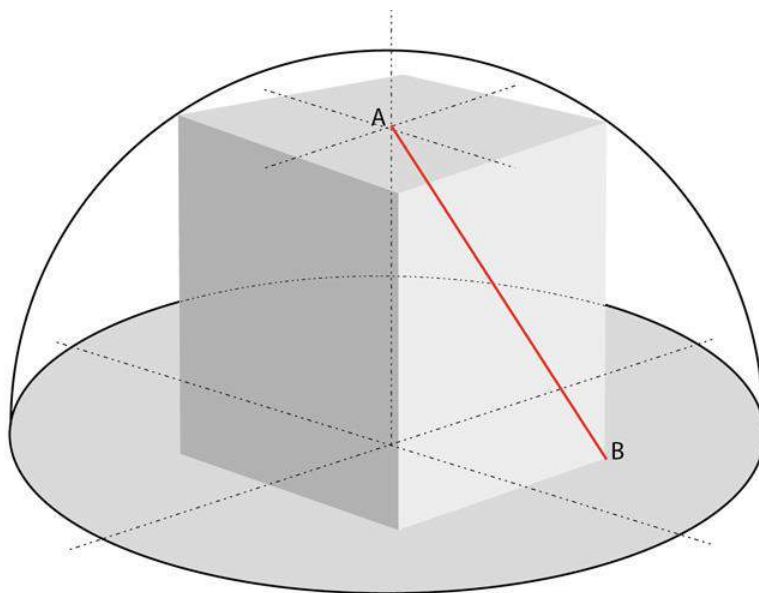


Fig.1

20. A greenhouse constructed in the shape of a hemi-spherical dome houses a cuboid structure as shown in the given figure. The top four corners of the cuboid just touch the inside of the hemi-sphere. The diameter of the hemi-sphere is 20 m. The centre of the base of the cuboid and the centre of the base of the hemi-sphere coincide. A ladder AB is placed from one corner of the cuboid as indicated by the point B, reaching the centre of the top surface of the cuboid as indicated by the point A. What is the length of the ladder AB?



## Section B: Multiple Selection Questions

This section contains a total of 25 Multiple Select Questions (MSQ). Each question may have one or more than one correct choice(s) out of the four given choices. A candidate gets 4 marks only if ALL the correct choices and NO wrong choices are selected for each question. There is NO PARTIAL marking and NO NEGATIVE marking for this section. Questions not attempted or with wrong answers will be given zero marks. Questions from 21 to 45 belong to this section.

21. Which of the sculpture(s) given below belong(s) to the Gandhara style?



22. Consider a scenario in India in the year 2000: Women from several nomadic tribes are in danger of having complicated pregnancies. At times, they have little or no knowledge of pregnancy or childbirth related ailments, interventions and government schemes. The problem is worsened by the fact that women's literacy within these communities is low and since they keep moving from place to place, access to electricity is low. An NGO decides to address this problem and hopes to improve maternal health in this community through information dissemination.

Which of the following could be effective in communicating this information to this community?

- I. Smartphone applications
  - II. Smart watches with health monitoring sensors
  - III. Camps and workshops
  - IV. Folk songs
  - V. Radio
  - VI. Folk theatre
  - VII. Pregnancy tracking websites
  - VIII. Posters
  - IX. Printed booklets
- 
- A. I, II, VII
  - B. IV, VI
  - C. V, III
  - D. VIII, IX

23. Which of the statement(s) is/are TRUE for the photos given below?



- A. There are only two mammals
- B. There are only two reptiles
- C. There are only two fishes
- D. There is only one bird

24. Consider the following paragraphs:

Somewhere, on some remote planet set at precisely the right distance from a star of just the right magnitude and the right temperature, on the other side of our galaxy, there is at this moment a committee nearing the end of a year-long study of our own tiny, provincial solar system. The intelligent beings of that place are putting their signatures (numbers of some sort, no doubt) to a paper which asserts, with finality, that life is out of the question here and the place is not worth an expedition. Their instruments have detected the presence of that most lethal of all gases, oxygen, and that is the end of that. They had planned to come, bringing along mobile factories for manufacturing life-giving ammonia, but what's the use of risking strangulation?

The only part of this scenario that I really believe in is that committee. I take it as an article of faith that this is the most fundamental aspect of nature that we know about. If you are going to go looking for evidences of life on other celestial bodies, you need special instruments with delicate sensors for detecting the presence of committees. If there is life there, you will find consortia, collaborating groups, working parties, all over the place.

At least this is true for our kind of life.

Which of the following statements is/are TRUE of the paragraph above?

- A. The author suggests that bureaucratic committees waste a lot of time before taking decisions on important projects.
- B. The basic error in the passage is in the assertion that oxygen can be a lethal gas.
- C. Past the veneer of sarcasm, the author admits to a deep faith in the fundamental human urge to collaborate and consort in all large endeavours.
- D. Whether as numerals or symbols, the author believes in the universality of numbers as a language that transcends boundaries.

25. Consider the following paragraph:

A central part of disgust’s pathology is the bifurcation of the world into the “pure” and the “impure”—the construction of a “we” who are without flaw and a “they” who are dirty, evil, and contaminating. Much bad thinking about international politics shows the traces of this pathology, as people prove all too ready to think about some group of others as black and sullied, while they themselves are on the side of the angels. We now notice that this very deep-seated human tendency is nourished by many time-honored modes of storytelling to children, which suggest that the world will be set right when some ugly and disgusting witch or monster is killed, or even cooked in her own oven. Many contemporary stories for children purvey the same worldview. We should be grateful for artists who suggest to children the world’s real complexity: the Japanese filmmaker Hayao Miyazaki, for example, whose wild and fantastic films contain a view of good and evil that is both gentler and more nuanced, in which dangers may come from such real and complex sources as decent humans’ relation to the environment; or Maurice Sendak, whose Max, in *Where the Wild Things Are*—which has now become an impressive film—romps with monsters that represent his own inner world and the dangerous aggression that lurks there. Nor are the monsters even entirely hideous; for the hatred of one’s own internal demons is a frequent source of the need to project them outward onto others. Stories learned in childhood become powerful constituents of the world we inhabit as adults.

Which of the following statements is/are TRUE of the paragraph above?

- A. The ability to feel concern and to respond with sympathy and imaginative perspective is a deep part of our evolutionary heritage.
- B. Traditional storytelling often feeds a deep-seated human tendency to divide the world into binaries, such as pure-impure, us-them, etc., nurturing a pathology that needs to be brought in check.
- C. Children’s stories need not be a matter of much concern, since the world of adults is complex enough to comfortably accommodate and/or mitigate the tendencies reflected in such tales.
- D. Hayao Miyazaki and Maurice Sendak are held up as exemplars of a new, more nuanced kind of storytelling, that carries the possibility of a changed relationship with the self and the world.

26. Read the three statements below, and the conclusions deduced from these statements.

**Statements:**

All letters of the Greek alphabet have symbol-to-sound mapping.

Some letters of the Greek alphabet are aspirated plosives.

All aspirated plosives in Greek are consonants in Greek.

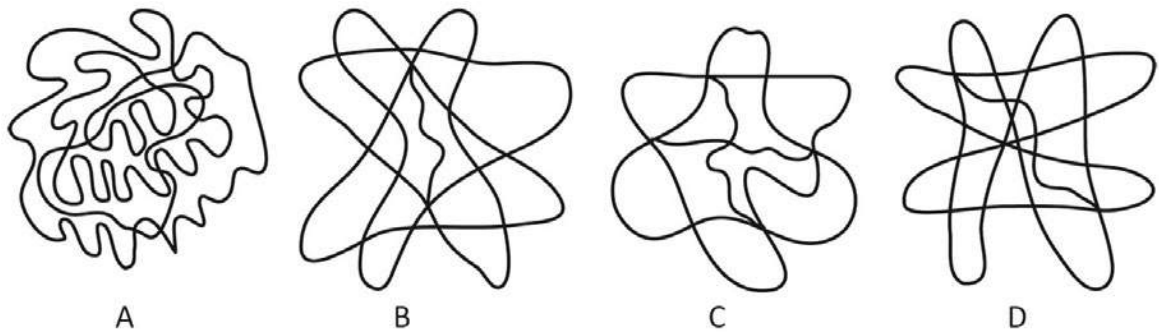
Based on the above, which of the conclusions actually follows from the statements?

- A. Some consonants are aspirated plosives.
- B. Some consonants have symbol-to-sound mapping.
- C. All aspirated plosives are letters of the Greek alphabet.
- D. No letters of the Greek alphabet are consonants.

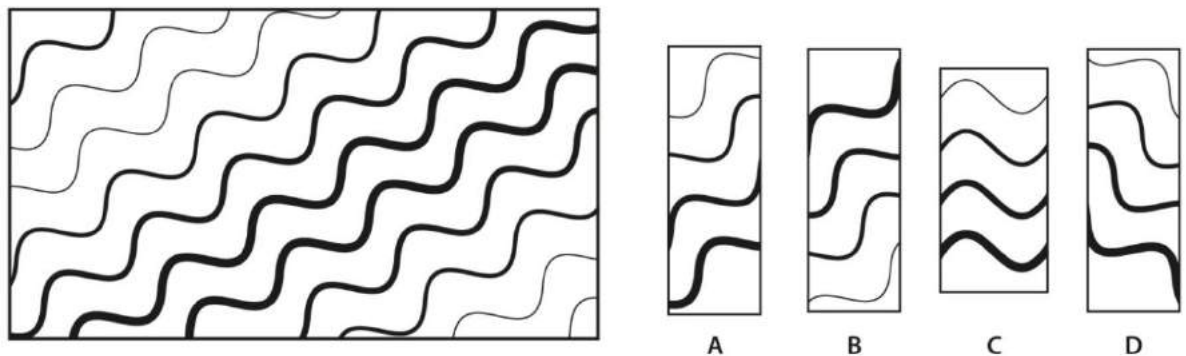
27. Which of the visual element(s) is/are part of the design shown below? The element(s) may be rotated or scaled.



28. Which of the figure(s) can be drawn by neither lifting the pen nor redrawing the line?

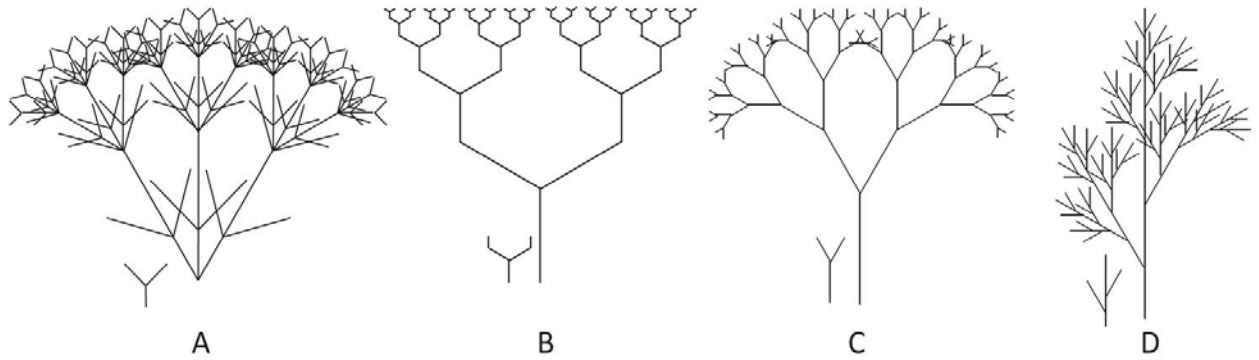


29. Shown below is a design pattern. Which of the given option(s) can be used as blocks to print the given pattern?

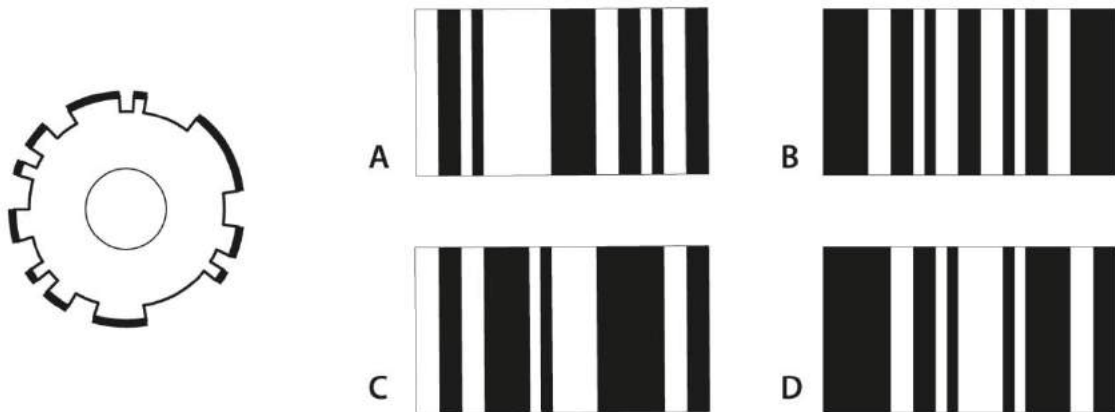




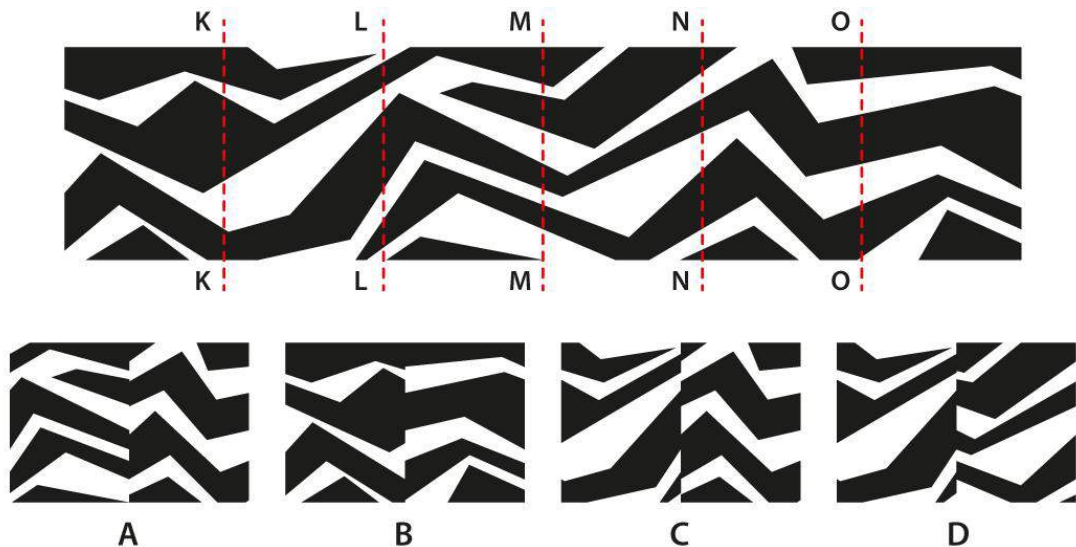
30. Shown below are fractal images generated by the repetition and scaling of basic units (shown next to the fractal). Which of the option(s) has/have the correct basic unit?



31. Shown below is a print roller. Which of the given option(s) is/are partly or fully printed using the roller?



32. Shown below is a wooden partition with hinges along KK, LL, MM, NN and OO. The partitions are folded in such a way that only two panels are to be visible side by side at any time. Which of the given option(s) showing the folds is/are possible?



33. Consider the following paragraph:

“Imagine a gigantic banquet. Hundreds of millions of people come to eat. They eat and drink to their hearts’ content—eating food that is better and more abundant than at the finest tables in ancient Athens or Rome, or even in the palaces of medieval Europe. Then, one day, a man arrives, wearing a white dinner jacket. He says he is holding the bill. Not surprisingly, the diners are in shock. Some begin to deny that this is their bill. Others deny that there even is a bill. Still others deny that they partook of the meal. One diner suggests that the man is not really a waiter, but is only trying to get attention for himself or to raise money for his own projects. Finally, the group concludes that if they simply ignore the waiter, he will go away. This is where we stand today on the subject of global warming. For the past 150 years, industrial civilization has been dining on the energy stored in fossil fuels, and the bill has come due. Yet, we have sat around the dinner table denying that it is our bill, and doubting the credibility of the man who delivered it.”

So said Naomi Oreskes in “Merchants of Doubt”.

Which of the statements reflect/s the *author’s position*:

- A. Global warming is due to our usage of fossil fuels.
- B. Global warming may not be man-made, but it is still real.
- C. Some are sceptical of what science is telling us about global warming.
- D. Some are not willing to take responsibility for global warming.

34. Given below are images of sculpture, furniture and buildings. Which of the statement(s) is/are TRUE for the images given below?



L



M



N



P



Q



R

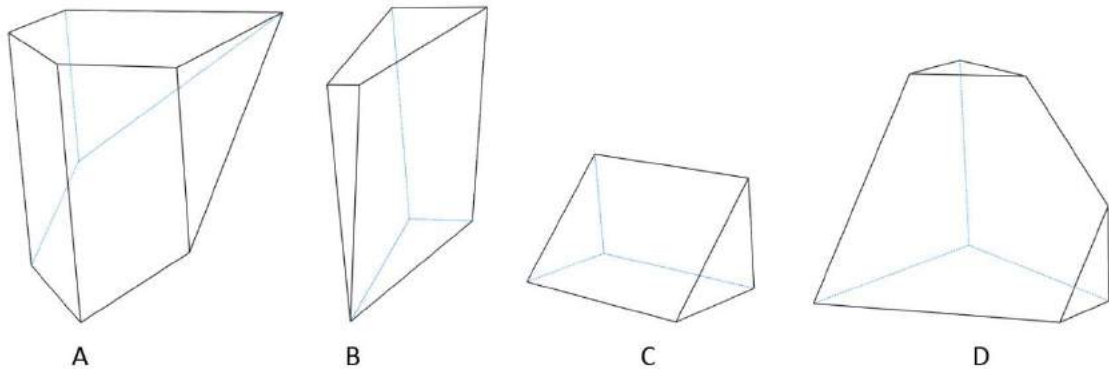
- A. M and L are by the same designer
- B. P and Q are by the same designer
- C. L and N are by the same designer
- D. P and R are by same architect



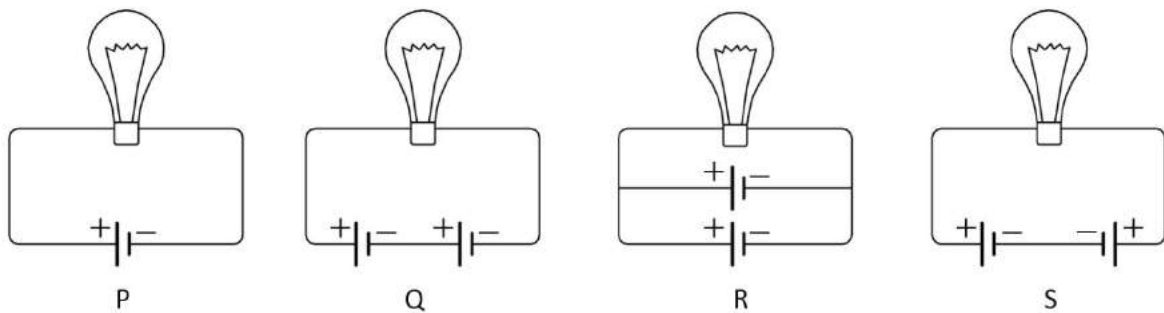
35. Which of the statement(s) is/are TRUE?

- A. Agricultural activities and use of fertilizers leads to higher nitrous oxide concentration
- B. Deforestation leads to decrease in carbon dioxide due to human activities
- C. Oxygen and ozone are not greenhouse gases
- D. Global warming leads to sea level rise

36. Which of the pieces given below can be joined together to form a complete cube?

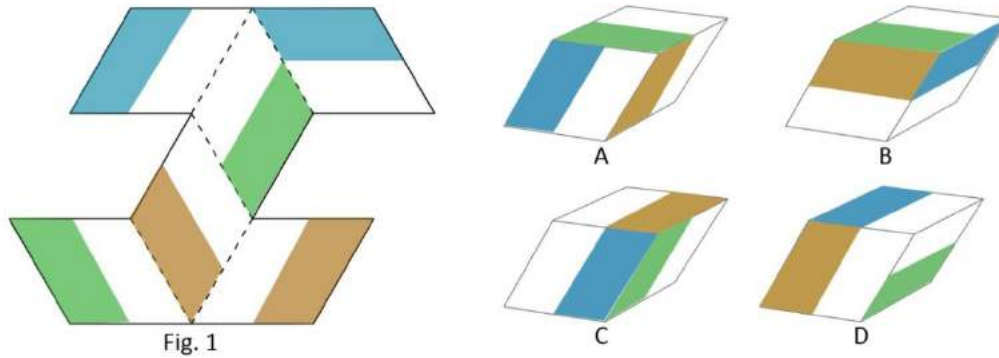


37. Given all the batteries in the circuits shown below are of same voltage and all the bulbs are of same wattage, and the internal resistance is negligible in all the cases, which of the statement(s) is/are TRUE?

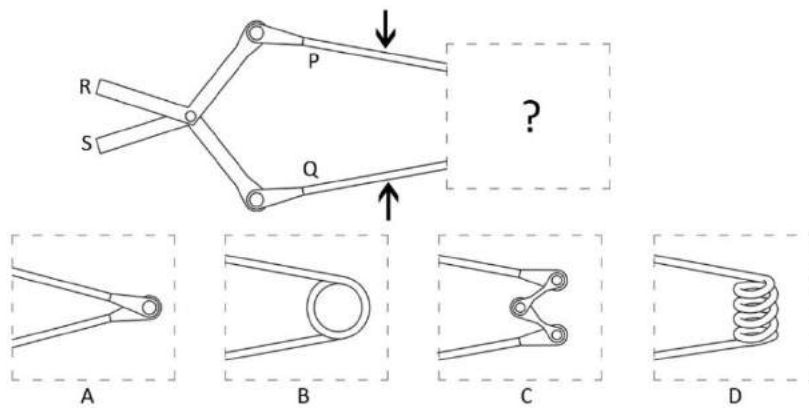


- A. Bulbs in circuit Q and R will have same intensity
- B. Bulbs in circuit P and R will have same intensity
- C. Bulb in circuit Q will be the brightest
- D. Bulb in circuit S will not glow

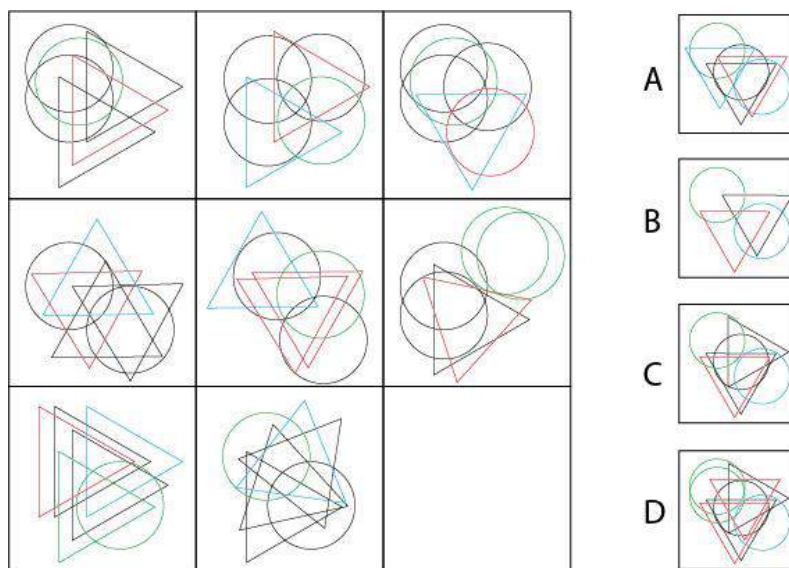
38. Figure 1 shows an unfolded view of a box. The dotted lines depict the folding lines. The options show four fully folded boxes. Identify the box(es) that can be unfolded as figure 1?



39. When force is applied on arms P and Q in the direction indicated by the arrows, R and S move away from each other. When that force is removed, R and S fall back towards each other. Which of the option(s) satisfies (satisfy) the above condition?



40. Which of the option(s) given below can fit in the empty box?



41. Which of the following statements is/are TRUE about sound?

- A. As you tighten a drum skin, the sound made when you beat it gets lower in pitch.
- B. As the water level in a bottle increases, the sound made when you blow over the top of it gets lower in pitch.
- C. As the water level in a bottle decreases, the sound you make when you tap on the mouth, periodically gets lower in pitch.
- D. When you hit a steel plate to make a loud sound and then hold the edge of the plate tightly between your fingers, the sound becomes higher in pitch.

42. Shown below are photographs of same objects using different settings. Given that the lighting conditions were constant in all, which of the following statement(s) is/are TRUE?



- A. All the photographs are of equal exposure
- B. The third photograph was taken with a moving camera
- C. The photographs are in the order of small to large aperture size
- D. The third photograph was taken with a higher shutter-speed compared to the first photograph

43. When photographs are taken on bright sunny days, there is a possibility of an intense glare appearing in the photograph. Which action(s) can be taken to avoid the glare?

- A. Change the angle of the camera
- B. Open up the aperture to its maximum
- C. Attach a lens hood
- D. Use a polarizing filter

44. Which of the option(s) describe(s) the films shown below in the correct order?



1



2



3



4



5



6

- A. Animation, Adventure, Interview, Fantasy, Comedy, Documentary
- B. Comedy, Adventure, Documentary, Science-Fiction, Mystery, Action
- C. Animation, Adventure, Documentary, Action, Film Noir, War
- D. Comedy, Drama, Action, Science-Fiction, Romance, Thriller

45. Shown on the left is the logo of Beijing Olympics. Which of the pictogram(s) was/were used in the same Olympics?



A



B



C



D

## Section C: Multiple Choice Questions

This section contains a total of 40 Multiple Choice Questions (MCQ). Each question has four choices out of which ONLY ONE is the correct answer. There is NEGATIVE marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive -1 (minus 1) mark. Questions not attempted will be given zero marks. Questions from 46 to 85 belong to this section.

46. Read the poem given below and identify the *Rasa* in it.

Ashadha's ending on the mountain found  
Him weakened, gold ring slipping from his wrist,  
And mixed his pleasure when a cloud came down  
So playfully to hug the summit mist,  
As elephants in heat will butt the ground.

In tears withheld he took that fall from grace,  
From wealth attending on the King of Kings.  
The otherworld that brimmed in cloudy air  
Was still discomfort when far longing brings  
A breath to hold him to that neck's embrace.

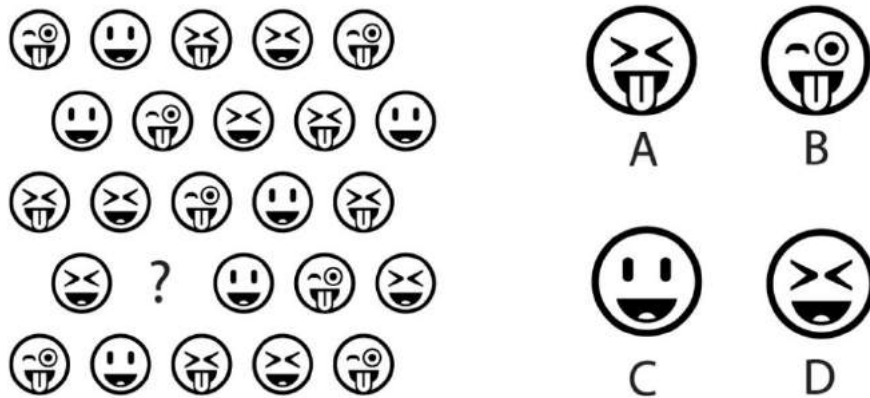
With now the rainy month stood close at hand,  
To fresh Kutaja blooms he adds his plea  
And asks most courteously the cloud bring news  
Of welfare to his loved-one—words that she,  
Revived to hear of him, will understand.

- A. Veera often translated as Valour
- B. Hasya often translated as Comic
- C. Adbhuta often translated as Wonder
- D. Shringara often translated as Love

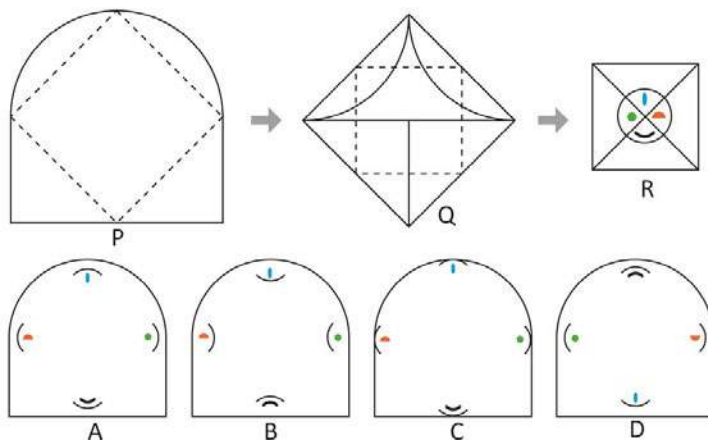
47. An *oxymoron* is a figure of speech in which contradictory images or words are juxtaposed in order to intensify a statement or to produce a heightened poetic effect. Which of the statements given below is NOT an oxymoron?

- A. We eat in order to live, not live in order to eat.
- B. Still-waking sleep, that is not what it is!
- C. No light, but rather darkness visible.
- D. To that bad eminence; and from despair.

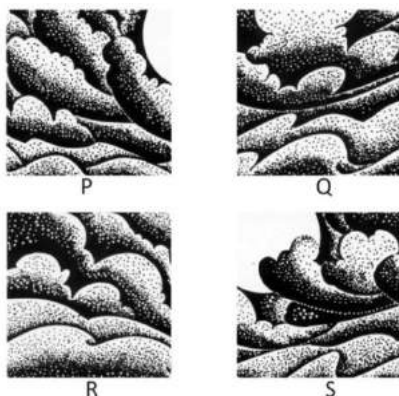
48. Identify the option that will replace the question mark.



49. Shape P is folded along the dotted lines to form shape Q and then folded again to form shape R. Identify the pattern on the backside of P.



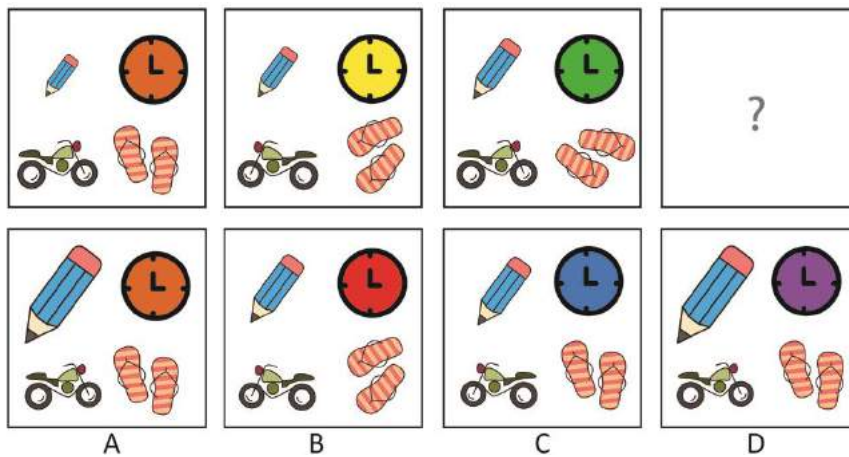
50. An image strip is cut into four pieces. Identify the correct sequence that will complete the image correctly.



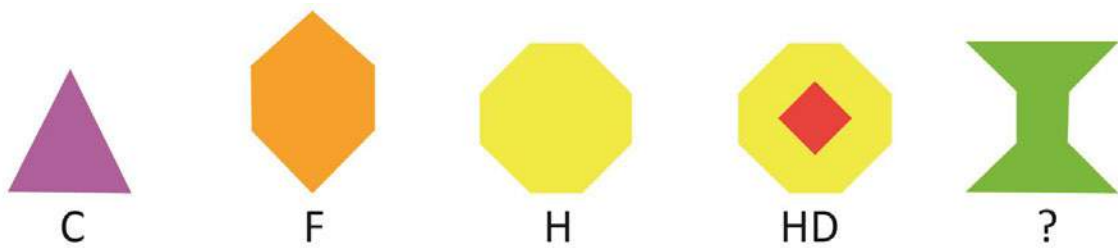
- A. Q, R, P, S
- B. Q, P, S, R
- C. P, S, Q, R
- D. R, P, S, Q



51. Identify the option that will replace the question mark.

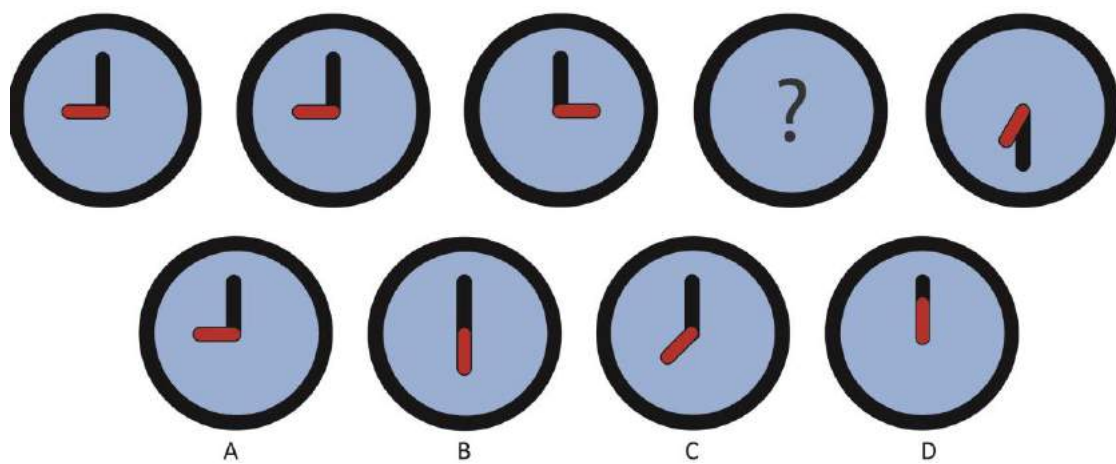


52. Each of the shapes is associated with one or more alphabets. Identify the alphabet(s) for the last shape.

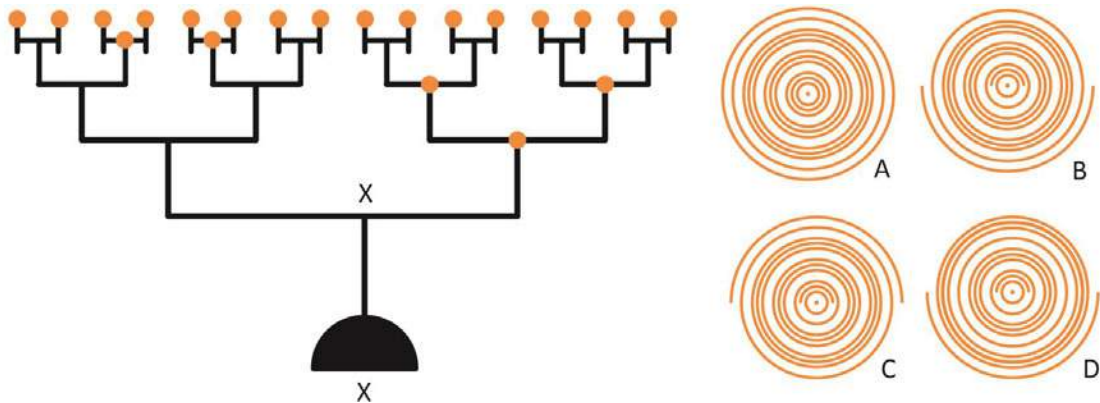


- A. H
- B. HF
- C. G
- D. J

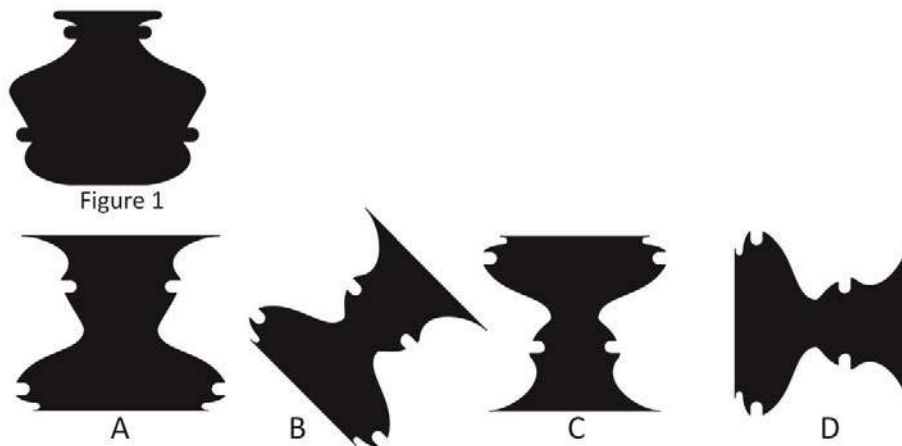
53. Identify the option that will replace the question mark.



54. The object shown below is rotated by 180 degrees about the X axis in the anticlockwise direction as seen from the top. Identify the trail left by the orange blobs when seen from the top.



55. Which shape will exactly fit with Figure 1 without leaving any gaps, given that the shapes can be rotated?

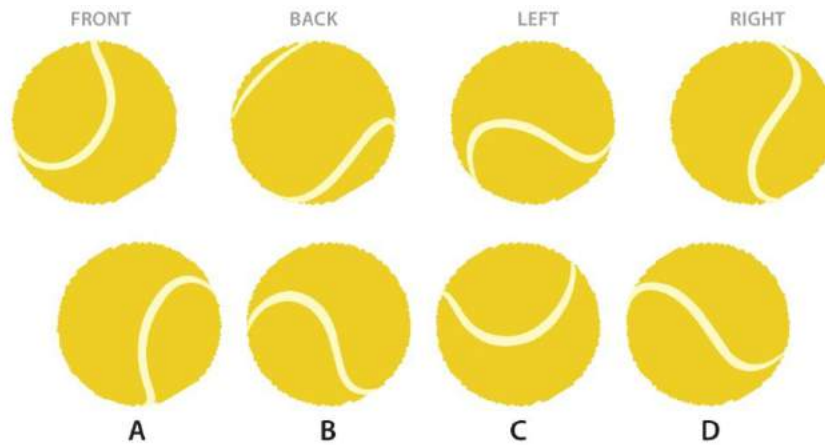


56. A cube, a cuboid, a cone and a sphere were developed from an experimental material. In vacuum, the combined mass of the cuboid and the sphere is equivalent to the combined mass of the cube and the cone. The mass of the cuboid is equivalent to the combined mass of the sphere and the cone. The sphere weighed 2 kilograms and occupied a volume of 62.5 cubic cm in vacuum. One of the properties of this material is such that the length of the side of the cube doubles when exposed to air. How many cubes are needed to fill a tank of dimension 50 cm x 50 cm x 50 cm in air?

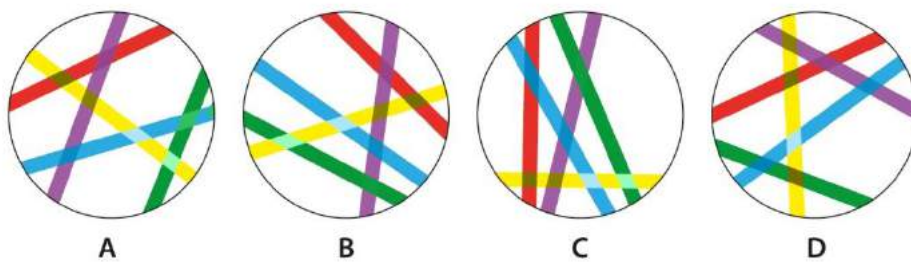
- A. 1000
- B. 125
- C. 100
- D. 81



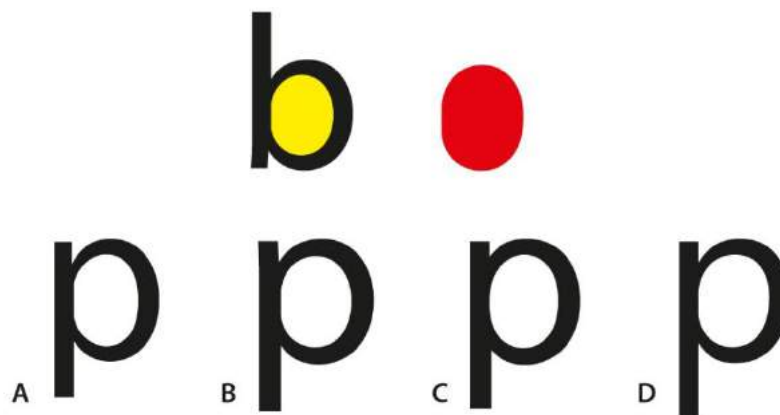
57. Shown below are the different views of the same ball. Identify its top view.



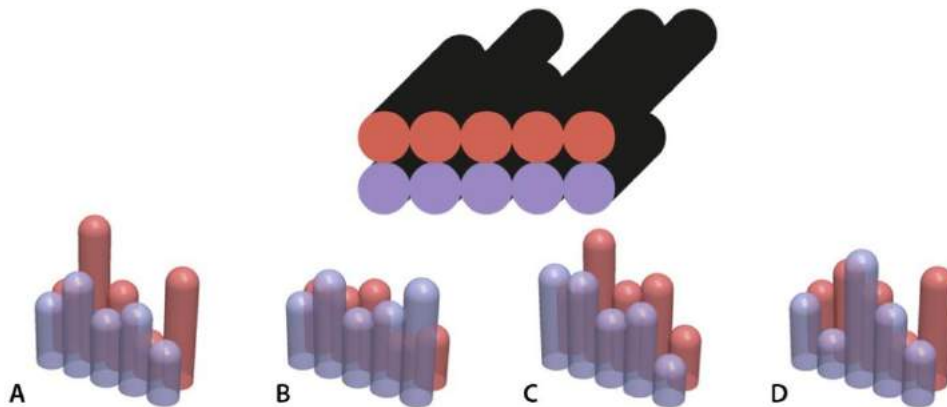
58. Identify the odd one out.



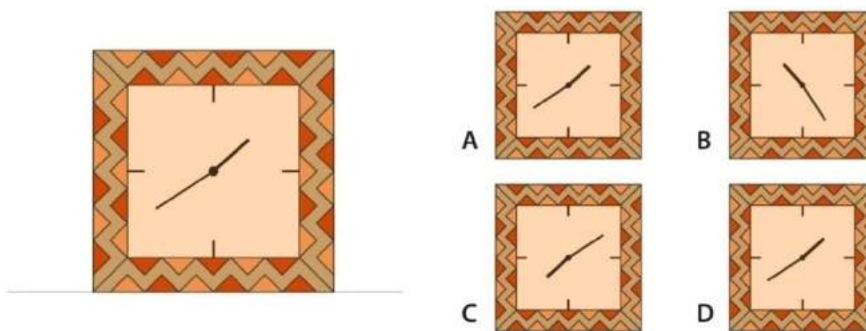
59. The enclosed yellow shape within the letter 'b' is called a counter. Which option has the red shape as the counter?



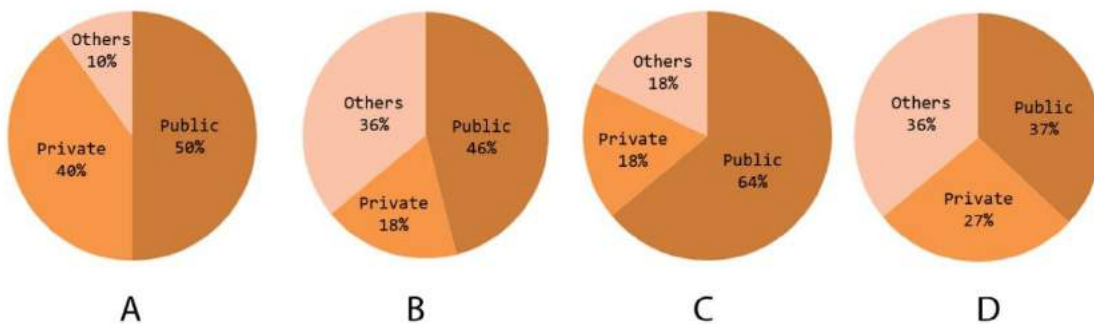
60. Shown below is a schematic figure of two rows of test tubes with the ground shadows seen from the top. The test tubes are of varying heights. Identify the set of test tubes that cast the shadows.



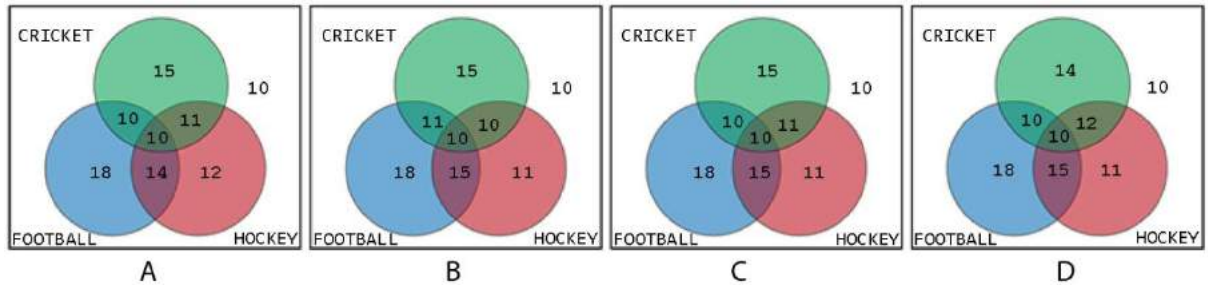
61. A naughty kid plays with a clock kept on a table as shown below. She changes the hour and minute hands clockwise adding 8 hours and 45 minutes to the time and places the clock by rotating 270 degrees anti-clock wise. Identify the option that shows the modified time?



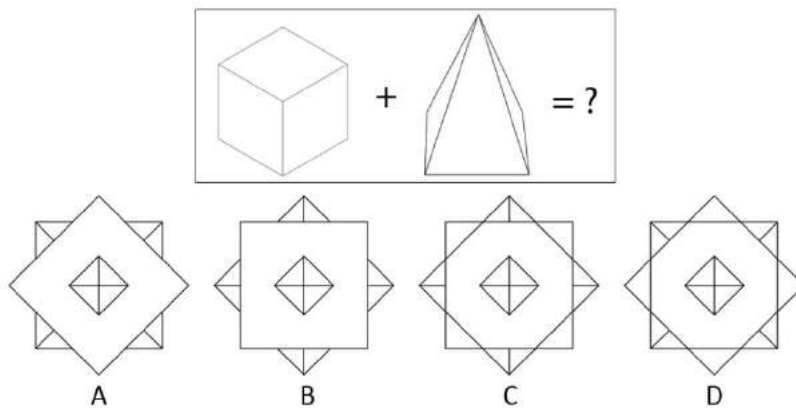
62. In 2001, one lakh people (10% of the total population) of a city used private vehicles and 50% of the population used public transportation. In 2011, there was a decadal growth of 10% and it was observed that five lakh people used public transportation, while 2 lakh people used private vehicles. Which pie chart depicts the transportation mode usage in 2011?



63. In a school of 600 students, 10% played football, hockey and cricket while 60 were engaged in other sports. 18% of the students played football while 90 played cricket exclusively. 60 students played both football and cricket. 66 students played hockey exclusively and another 11% played both hockey and cricket. Which option represents the school?



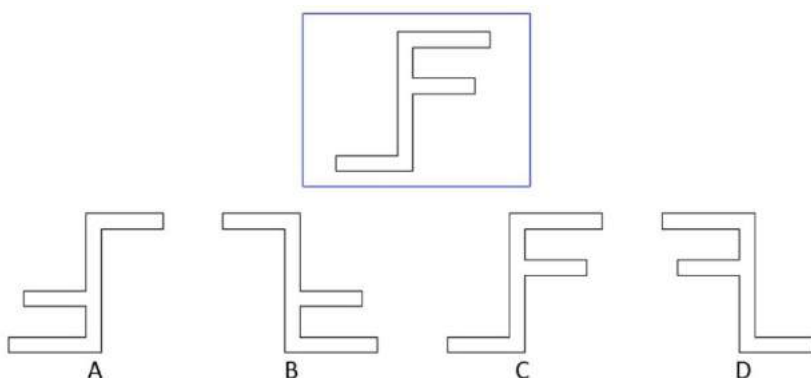
64. A cube of side 10 cm is merged with a square pyramid of base 10 cm and height 15 cm. The centers of the base for both the objects are aligned. Identify the top view of the resultant figure from the options given below.



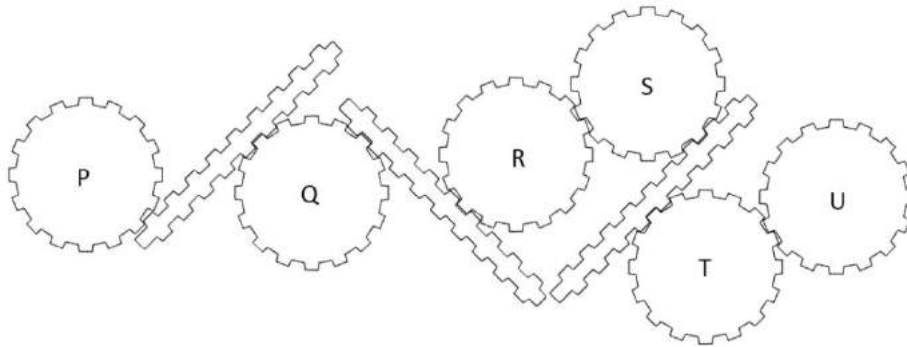
65. Following operations, in the given order have been performed on the figure shown in the box.

- Rotate  $180^\circ$
- Flip horizontal (about an axis perpendicular to the plane of the computer screen)
- Rotate  $180^\circ$
- Flip vertical (about an axis perpendicular to the plane of the computer screen)

Identify the resultant figure.

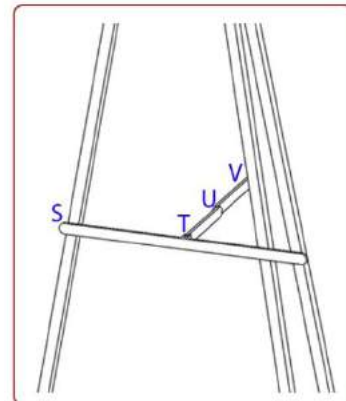
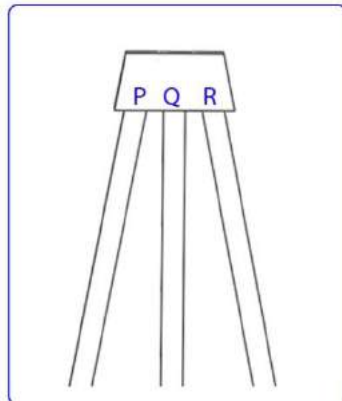
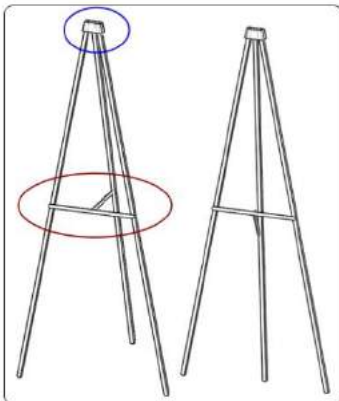


66. If gear 'P' is the driving gear and rotates clockwise, which of the following statements is true?



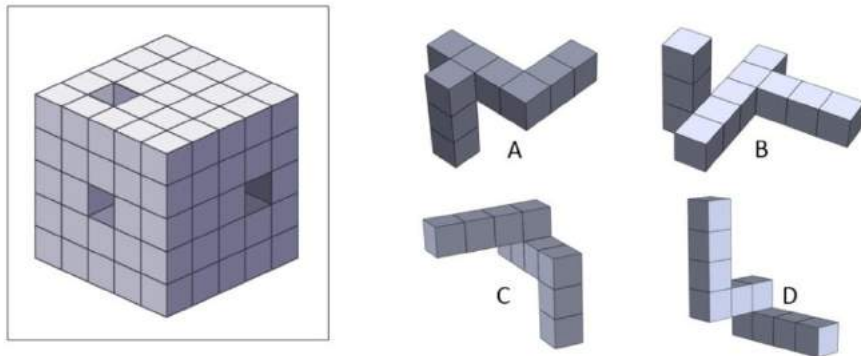
- A. Q will rotate clockwise and S will rotate anticlockwise
- B. R and T both will rotate anticlockwise
- C. R will rotate clockwise and U will rotate anticlockwise
- D. S will rotate anticlockwise and U will rotate clockwise

67. The image in the box on the left hand side shows the open and closed positions for a metal stand. The other two images show the various joints in the stand. If a fixed joint is denoted by 'f' and a hinged joint is denoted by 'h' then which of the options is correct?

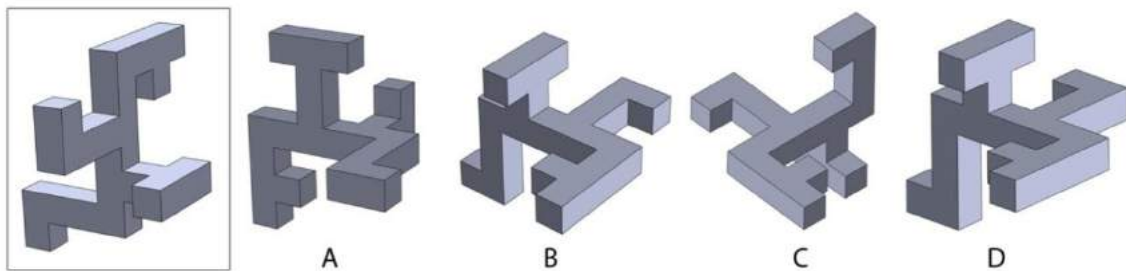


- A. P-f ; Q-h ; R-f ; S-h ; T-h ; U-f ; V-f
- B. P-h ; Q-h ; R-h ; S-f ; T-h ; U-f ; V-h
- C. P-f ; Q-h ; R-f ; S-h ; T-h ; U-h ; V-h
- D. P-f ; Q-h ; R-f ; S-f ; T-h ; U-h ; V-h

68. Three holes have been drilled through a cube of size 5 x 5 x 5 units. From the options given, identify the form that can fill the holes perfectly?



69. The image in the box given below shows a 3D object. Only one of the options shows the same object from a different view. Identify it.



70. Given below is a list of ten idioms with animal/bird/fish/insect origins. Each of the four options contains four meanings. Identify the option that contains four correct meanings for any four of the idioms.

- I. The elephant in the room
- II. Hold your horses
- III. Pig headed
- IV. Wild goose chase
- V. Wolf down
- VI. Red herring
- VII. Go to the dogs
- VIII. Hogwash
- IX. Sacred cow
- X. Clam up

- A. Obvious, adamant, brave attempt, deteriorate
- B. Too big, Stubborn, devour, bluff
- C. Obstinate, foolish pursuit, subterfuge, rubbish
- D. Be patient, recalcitrant, clean up, protected interest

71. Choose the set of words that will correctly complete the following five sentences from the word sets given in the options

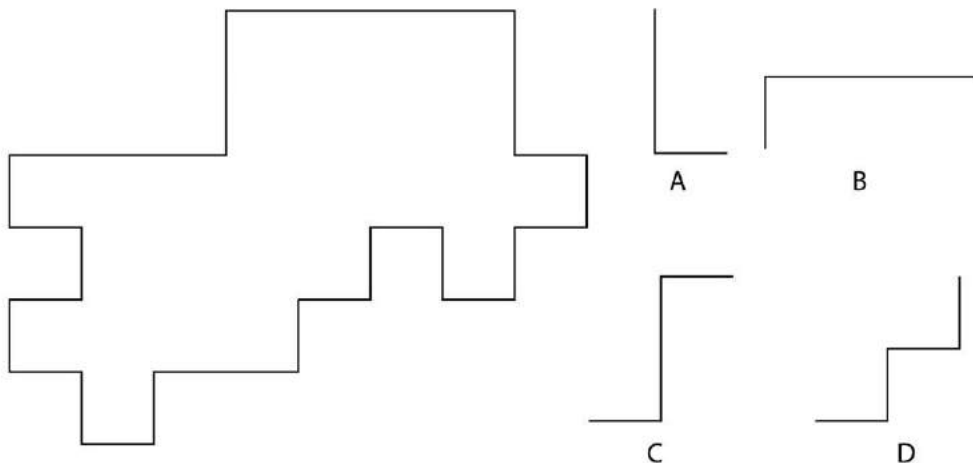
- I. He (lays / lies) the book on the table.
- II. The new rules (affected / effected) positive changes in the school.
- III. The road through the mountains was (tortuous / torturous).
- IV. The nurse was able to (staunch / stanch) the bleeding.
- V. When rain threatens, fans are (reticent / reluctant) to buy tickets to the cricket match.

- A. lies, effected, tortuous, staunch, reluctant.
- B. lies, affected, torturous, staunch, reticent.
- C. lays, effected, torturous, staunch, reluctant.
- D. lays, effected, tortuous, stanch, reluctant.

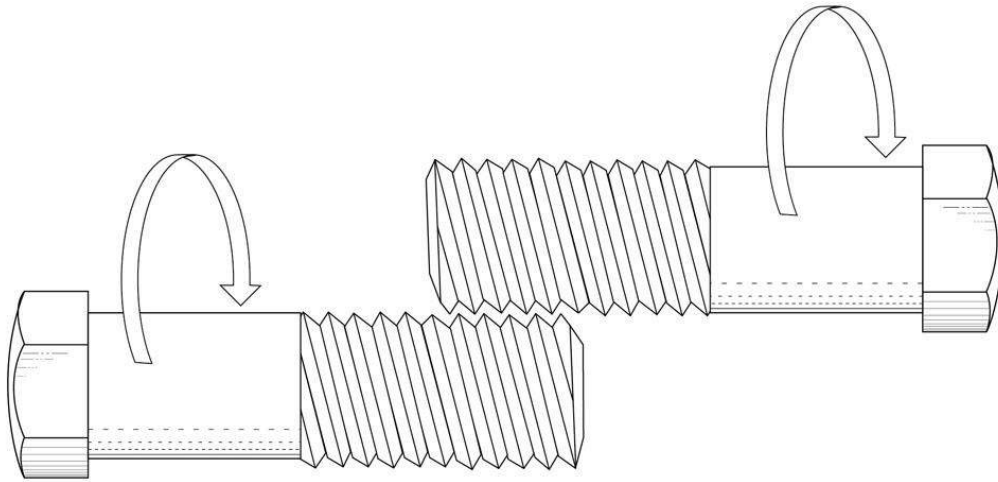
72. Our natural \_\_\_\_\_ to focus on the unusual, the dramatic and the \_\_\_\_\_ is strengthened \_\_\_\_\_ by newspapers and other media, but our interest \_\_\_\_\_ quickly as well.

- A. aversion, grotesque, considerably, increases
- B. penchant, unique, inestimably, intensifies
- C. proclivity, new, immeasurably, wanes
- D. dislike, bizarre, greatly, diminishes

73. Identify the option that will bisect the given shape into two identical shapes.

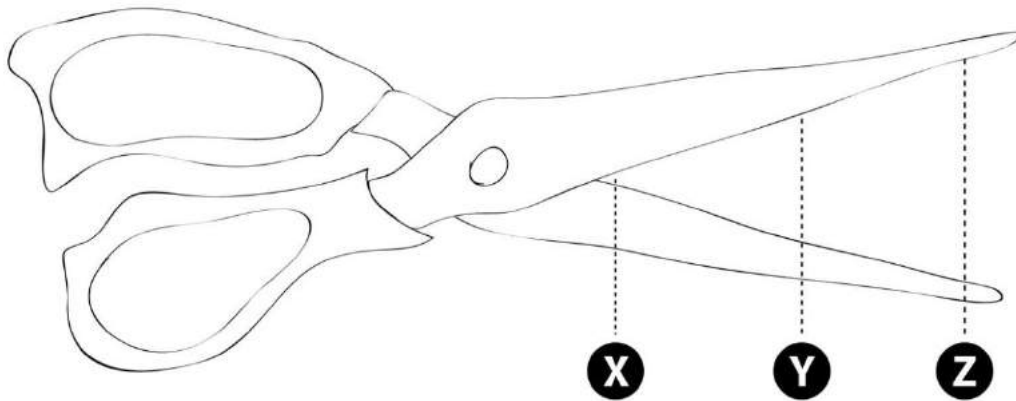


74. Shown below are two metal bolts. Suppose they were to be rotated (at the same rate) in the two directions as shown by the two arrows respectively, what would happen to the distance between the two bolt heads?



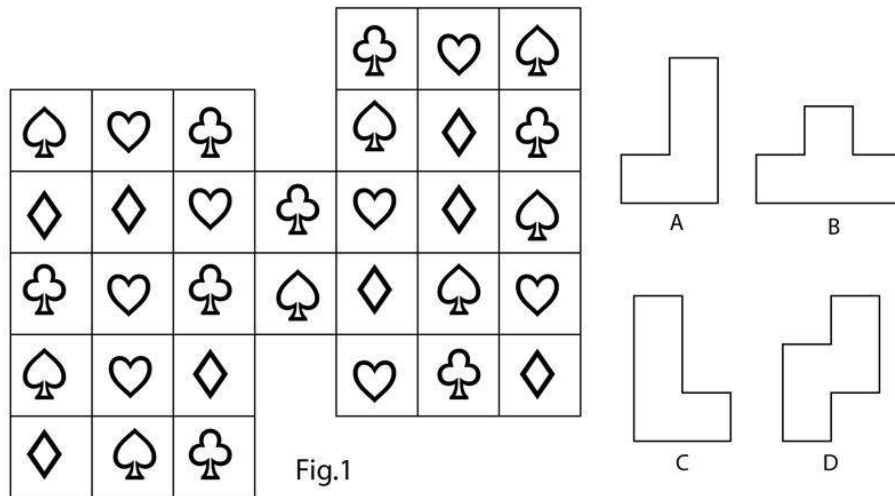
- A. Move closer to each other
- B. Move farther apart from each other
- C. Remain at the same distance from each other
- D. The bolts cannot be rotated

75. Three positions X, Y and Z are marked on the cutting edges of a pair of scissors as shown. Rank the points in terms of cutting strength from strongest to weakest.

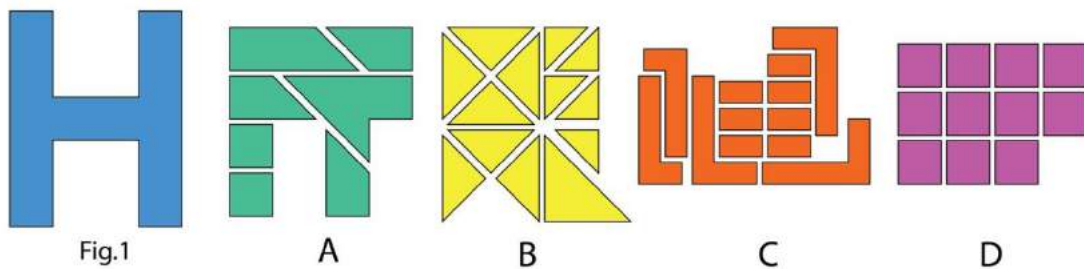


- A. XYZ
- B. ZYX
- C. YXZ
- D. All are of equal strength

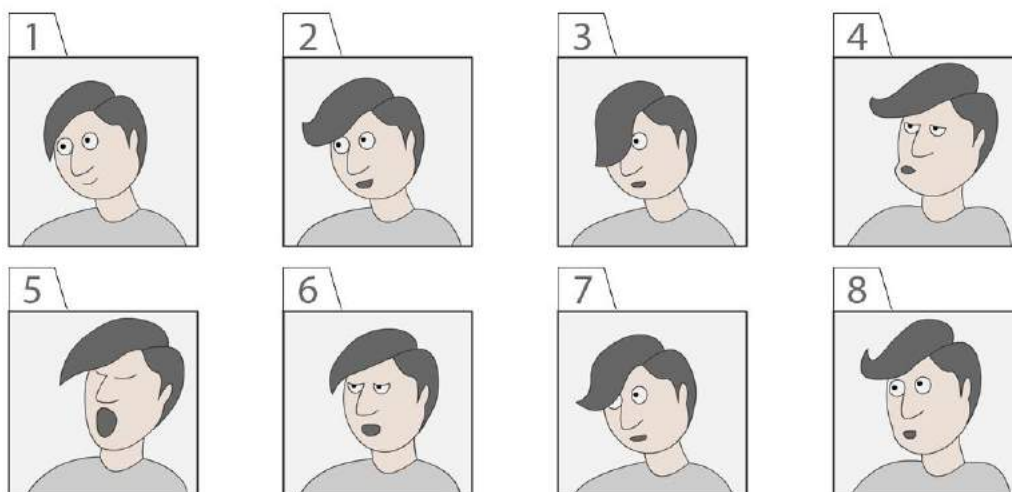
76. The shapes given in the options can be used to cut figure 1 into a number of identical pieces. Which shape will cut figure 1 such that, all four symbols are included in each of the pieces, and no symbols are left over?



77. The given figure 1 is cut into pieces. Identify the option whose pieces can be correctly assembled to form the figure 1.



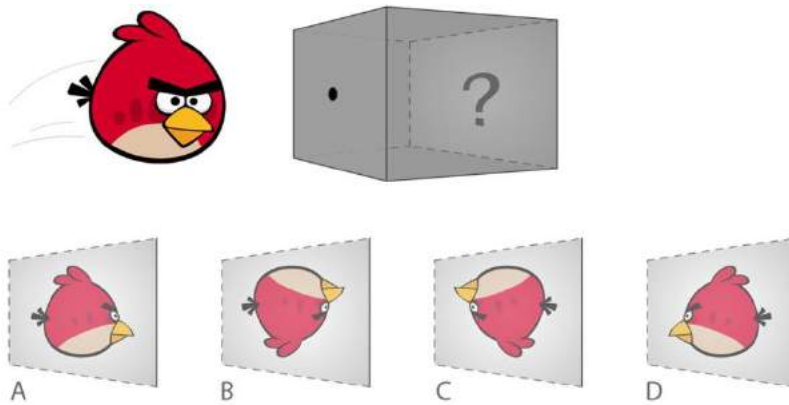
78. Below is an animation sequence of Raju playing with his hair. However except Frame no.1 all others seem to be mixed up. Choose the correct order.





- A. 1, 6, 7, 2, 4, 5, 2, 3
- B. 1, 7, 2, 8, 4, 5, 3, 6
- C. 1, 6, 5, 4, 8, 2, 7, 3
- D. 1, 7, 2, 8, 4, 5, 3, 6

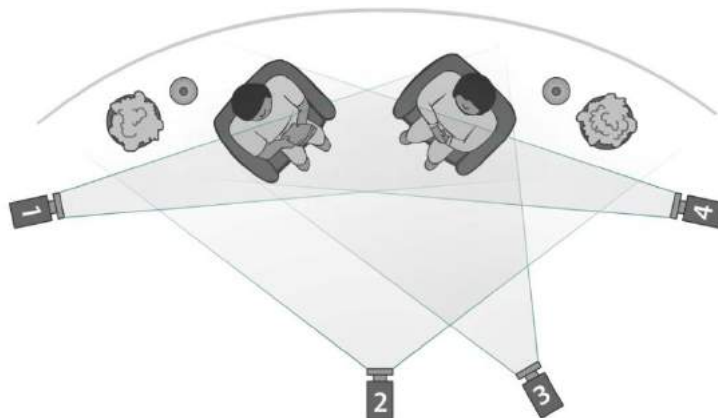
79. An angry bird is flying in front of a pin-hole camera as seen in the picture below. If it flies back in the opposite direction, what would be the image cast on the inner wall of the camera?



80. A short interview is being planned for live TV as described below:

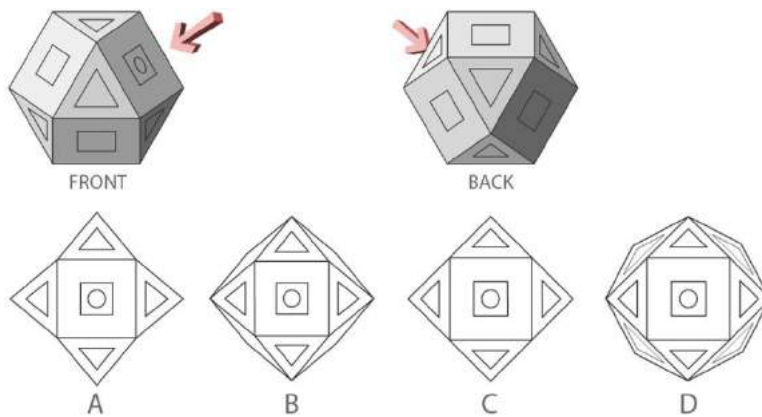
“We start with establishing the interview space, then close-up of the interviewer who introduces the interviewee. As the interview continues we shift between both of them as the questions are answered. After three questions, we end the interview showing both of them in the frame and then close with showing the interview space.”

For filming it, four cameras 1, 2, 3 and 4 have been placed as seen in the image below. From the options given, choose the sequence that was most closely followed.

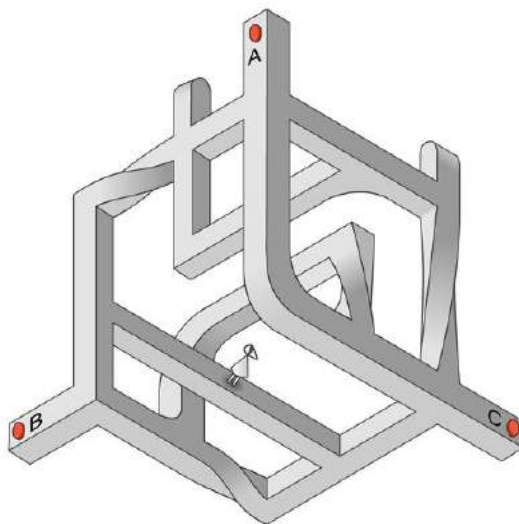


- A. 2, 4, 1, 4, 1, 4, 1, 4, 1, 2, 3
- B. 3, 4, 1, 4, 1, 4, 1, 4, 1, 3, 2
- C. 2, 4, 1, 3, 1, 4, 1, 4, 1, 4, 2
- D. 2, 4, 1, 4, 1, 4, 1, 4, 1, 3, 2

81. Two different views of a solid object are shown below. If viewed from a different direction as the arrows suggest, what would the view be?



82. Ida is standing on the structure as shown below. She wants to reach points A, B or C, but she can only travel on a continuous surface. Which of the following statements is true?

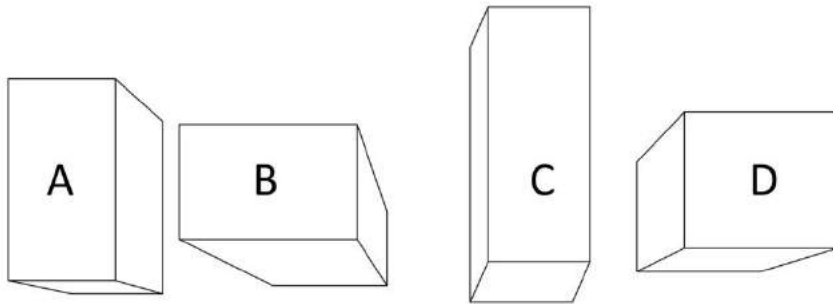


- A. Ida will be able to reach only A and B
- B. Ida will be able to reach only C
- C. Ida will be able to reach only A and C
- D. Ida will be able to reach only A

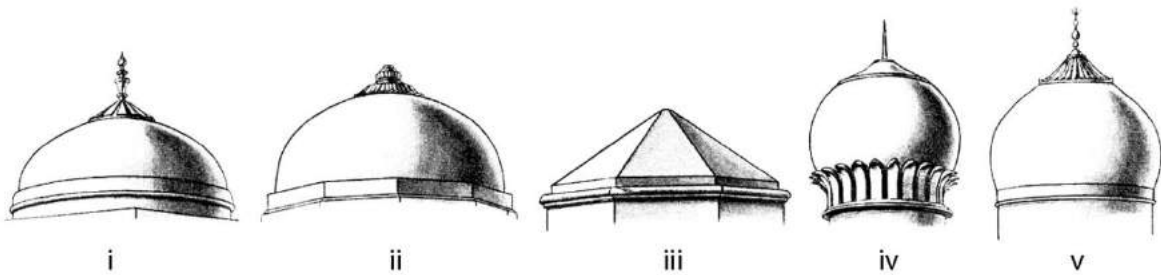
83. Water is kept in four identical beakers but made of four different materials—shiny tin, matt black tin, shiny stainless steel and blue colour plastic. When kept under the sun, with the same amounts of water and for the same amount of time, water in which of the beakers will be the hottest?

- A. Shiny tin beaker
- B. Shiny stainless steel beaker
- C. Blue colour plastic beaker
- D. Matt black tin beaker

84. Shown below is a one point perspective drawing where all the blocks except one share the same converging point. Identify the block.



85. Below is a set of pictures that show the variety of domes used in Islamic architecture in India. Select the order in which the design of the domes were developed, from the 13th to the 18th centuries CE.



- A. ii, iii, iv, i, v
- B. iii, i, ii, iv, v
- C. iii, ii, i, iv, v
- D. ii, iii, v, i, iv

**END OF THE QUESTION PAPER**

**Undergraduate Common Entrance Examination for Design**

**UCEED 2016**



**Indian Institute of Technology, Bombay**

**[www.uceed.in](http://www.uceed.in)**

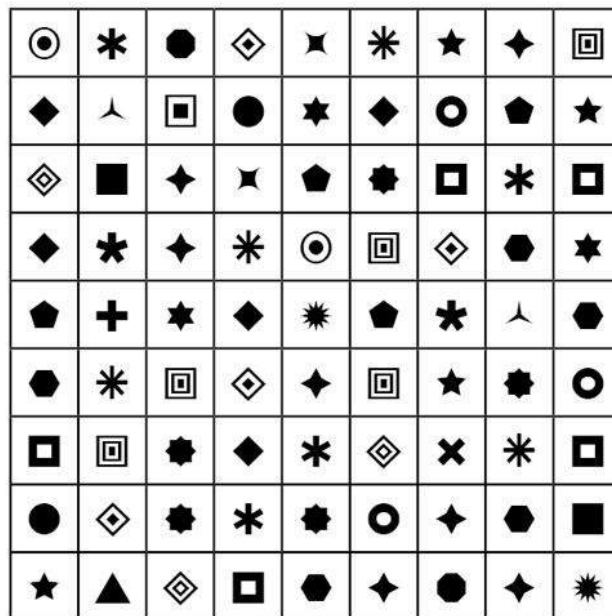
## Paper Specific Instructions

1. The examination is of 3 hours duration. There are in total 80 questions carrying a total of 300 marks. The paper is divided into three sections, **A**, **B** and **C**. All sections are compulsory. Questions in each section are of different types.
2. **Section A (80 Marks)** contains a total of 20 **Numerical Answer Type (NAT)** questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 4 marks and each wrong answer will receive  $-1$  (minus 1) mark. Questions not attempted will be given zero marks. Questions from 1 to 20 belong to this section.
3. **Section B (100 Marks)** contains a total of 20 **Multiple Select Questions (MSQ)**. Each question may have **one or more than one correct choice(s)** out of the four given choices. A candidate gets 5 marks only if **ALL** the correct answers and **NO** wrong answers are selected for each question. There is **NEGATIVE** marking for this section. Each incorrectly answered question will receive  $-0.5$  (minus 0.5) marks. Questions not attempted will be given zero marks. Questions from 21 to 40 belong to this section.
4. **Section C (120 Marks)** contains a total of 40 **Multiple Choice Questions (MCQ)**. Each question has four choices out of which **ONLY ONE** is the correct answer. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive  $-1$  (minus 1) mark. Questions not attempted will be given zero marks. Questions from 41 to 80 belong to this section.
5. Calculators, charts, graph sheets, tables, cellular phone and/or other electronic gadgets are **NOT** allowed in the examination hall.
6. Papers will be provided for rough work.

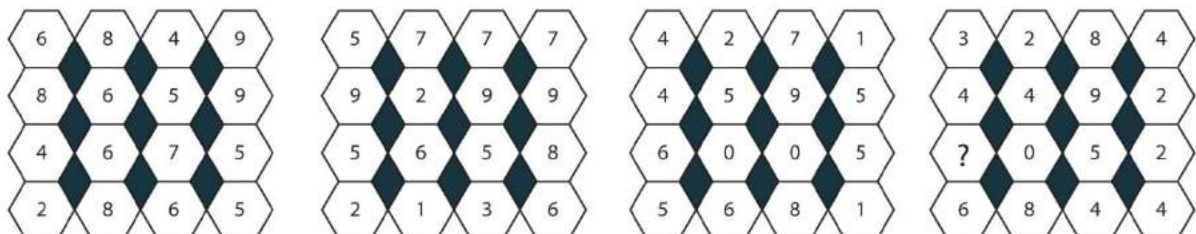
## Section A: Numerical Answer Type Questions

This section contains a total of 20 Numerical Answer Type (NAT) questions. For each question, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is NEGATIVE marking for this section. Each correct answer will be awarded 4 marks and each wrong answer will receive -1 (minus 1) mark. Questions not attempted will be given zero marks. Questions from 1 to 20 belong to this section.

1. A pyramid with a base side 6 cm and height 7 cm is merged with a cube of length 5 cm such that the centroid of the cube matches with the centre of the base of the pyramid. The base of the pyramid is parallel to the base of the cube and the edges of the base of the pyramid are parallel to the sides of the cube. Count the number surfaces in the resulting solid.
2. How many different types of symbols appear in the figure given below?

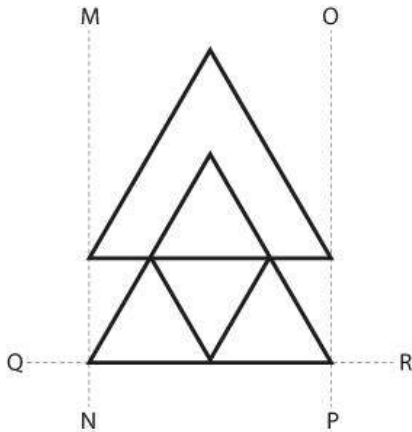


3. The numbers in the hexagon groups are arranged in a particular order. Find the number which would replace the question mark.



4. What is the maximum number of equilateral triangles of side 3 cm that can be fitted in a large equilateral triangle with length 11.2 cm?

5. The figure given below is to be cloned twice. The first clone on the right is to be reflected across the OP axis. The second clone on the left is to be reflected across the MN axis. The resultant figure is then to be cloned and reflected across the QR axis. Count the number of triangles in the final figure.



6. A company account book reveals the following figures:

Sales	2,35,126
Gross Profit	68,799
Administrative Expenses	2,456
Selling Expenses	4,789

Calculate the Operating Profit Ratio of the company.

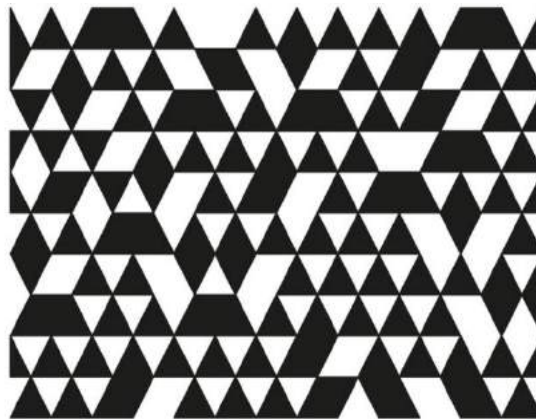
7. How many different ways are there to get from Tile A to Tile I without visiting a tile more than once, if only horizontal and vertical movements are allowed?

G	H	I
D	E	F
A	B	C

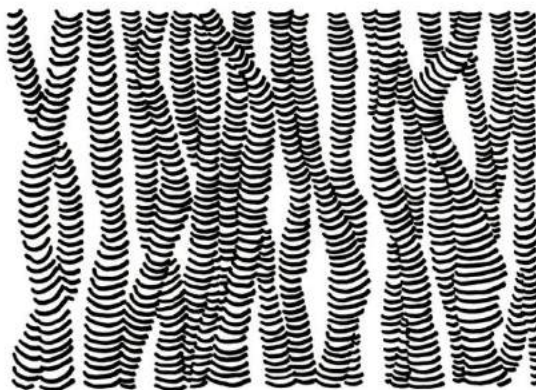
8. There are some men and some women in a group. Each person shakes hands with exactly one other person in the entire group. After this round of handshakes, eight men and four women find that they shook hands with someone of the same sex. The total number of handshakes exchanged in the entire group is 87. At most how many women can there possibly be in this group?
9. It is 12 o'clock, and the hour and minute hands are aligned exactly one over the other. Both hands move continuously. After how many minutes will they meet again?



10. At most how many spheres of the same size can be placed around a same size sphere at the centre so that they all simultaneously touch the sphere at the centre?
11. A water tank of dimensions 20 cm x 5 cm x 10 cm has 307 cc water in it. A few bricks, each of dimensions 5 cm x 2 cm x 1 cm are fully submerged in the tank. Each brick absorbs 30% of its own volume of water. Just enough bricks are put in, such that the water level rises to completely fill the tank. How many bricks were put in the tank?
12. Count the total number of black diamonds in the given pattern.



13. How many pages of size 21 cm x 25 cm can be made from a roll of 48 m x 1.2 m paper? Assume the pages are perfectly cut edge to edge.
14. How many tree trunks are there in the given figure?



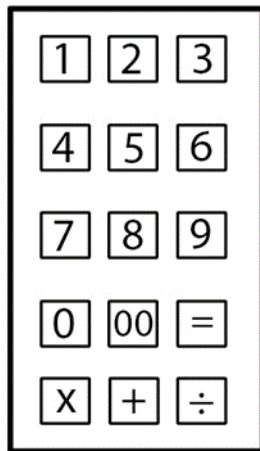
15. Shown below is a quadrant of a disc with cut-outs. Find the total number of cut-outs in the complete disc.



16. Count the number of people in this picture who are wearing spectacles.



17. You have been given a calculator that looks as in the image below. Given that you are allowed a total of only 6 key entries of which you MUST use at least one key entry for an operator and another key entry for the 'equals to' symbol, what is the largest number you can calculate?



18. Count the number of fonts used in the given set of words.

amazing discussion worried sampled entrance  
happily demarcate **deployed** canine metal  
relinquish estate **wavelength** cautiously  
temporary lavender sandalwood workable  
transfer patient karmic safety fantastic  
encourage **delightful** greetings achievement.

19. There are a host of HTTP codes which communicate different server messages: 404 for “not found”, 403 for “forbidden” and so on. Recently there has been a proposal to assign a code for “censored/censorship” in honour of the author Ray Bradbury. What is the proposed code?
20. Two friends, one on a bike and the other in a car, arrive together at a parking lot. The chance that the one in the car will find a parking space is 0.1, and the one on the bike not finding a parking space is 0.1. What is the probability that only one of them finds a parking space?

## Section B: Multiple Selection Questions

*This section contains a total of 20 Multiple Select Questions (MSQ). Each question may have one or more than one correct choice(s) out of the four given choices. A candidate gets 5 marks only if ALL the correct answers and NO wrong answers are selected for each question. There is NEGATIVE marking for this section. Each incorrectly answered question will receive -0.5 (minus 0.5) marks. Questions not attempted will be given zero marks. Questions from 21 to 40 belong to this section.*

21. Select all statements about the Silk Route that are TRUE:

- A. The Silk Route derives its name from the lucrative trade in Indian silks carried out along its length, beginning from the 3rd century BCE.
- B. Some scholars prefer the term “Silk Routes” because the road included an extensive network of routes, even though few were more than rough caravan tracks.
- C. Soon after the Roman conquest of Egypt in 30 BCE, communications and trade between China, Southeast Asia, India, the Middle East, Africa and Europe blossomed on an unprecedented scale because of the Silk Route.
- D. The Buddhist movement was perhaps the first large-scale missionary movement in the history of world religions, and its transmission to the Mediterranean began via the Silk Route in the 1st century CE.

22. There are no precise rules about punctuation (Fowler lays out some general advice (as best he can under the complex circumstances of English prose (he points out, for example, that we possess only four stops (the comma, the semicolon, the colon and the period (the question mark and exclamation point are not, strictly speaking, stops; they are indicators of tone (oddly enough, the Greeks employed the semicolon for their question mark (it produces a strange sensation to read a Greek sentence which is a straightforward question: Why weepest thou; (instead of Why weepest thou? (and, of course, there are parentheses (which are surely a kind of punctuation making this whole matter much more complicated by having to count up the left-handed parentheses in order to be sure of closing with the right number (but if the parentheses were left out, with nothing to work with but the stops, we would have considerably more flexibility in the deploying of layers of meaning than if we tried to separate all the clauses by physical barriers (and in the latter case, while we might have more precision and exactitude for our meaning, we would lose the essential flavour of language, which is its wonderful ambiguity.

Which of the following statements is/are true of the paragraph above?

- A. The thesis statement of the above paragraph is that there are no precise rules about punctuation.
- B. The author asserts that the Greeks were confused about their punctuation; they used semicolons in place of question marks.
- C. The recursive nesting of subordinate clauses within parentheses in the above paragraph simplifies sentence structure and clarifies writing.
- D. The author argues that parentheses may offer the possibility of greater rigor and accuracy for our meaning, but they do so at the cost of a critical quality of language, which is its wonderful ambiguity.

23. It is now theoretically possible to recreate an identical creature from any animal or plant, from the DNA contained in the nucleus of any somatic cell. A single plant root-tip cell can be teased and seduced into conceiving a perfect copy of the whole plant; a frog's intestinal epithelial cell possesses the complete instructions needed for a new, same frog. If the technology were further advanced, you could do this with a human being, and there are now startled predictions all over the place that this will in fact be done, someday, in order to provide a version of immortality for carefully selected, especially valuable people.

The cloning of humans is on most of the lists of things to worry about from Science, along with behavior control, genetic engineering, transplanted heads, computer poetry, and the unrestrained growth of plastic flowers.

...

The public questions are obvious. Who is to be selected, and on what qualifications? How to handle the risks of misused technology, such as self-determined cloning by the rich and powerful but socially objectionable, or the cloning by governments of dumb, docile masses for the world's work? What will be the effect on all the uncloned rest of us of human sameness? After all, we've accustomed ourselves through hundreds of millennia to the continual exhilaration of uniqueness; each of us is totally different, in a fundamental sense, from all the other [seven] billion. Selfness is an essential fact of life. The thought of human nonselfness, precise sameness, is terrifying, when you think about it.

Which of the following statements is/are true of the paragraph above?

- A. The arc of this passage moves from the biological to the social and the metaphysical—connecting the concerns of cloning with issues of identity and self-hood.
  - B. The author takes the view that cloning broadens the understanding of humanness by making room for evolving modifications in human beings and societies.
  - C. The author believes that if they are not socially objectionable, the self-determined cloning by the rich and powerful would not be a misuse of technology.
  - D. Were cloning permitted, the author is tormented by the prospect of the loss of selfness or uniqueness which, according to him, is at the very core of our sense of self.
24. In a wildlife rescue and rehabilitation centre in the Northeast of India, there are six orphaned creatures—ages 1.5 months to 6 months—who are currently receiving care, and await release into the wild in due course. They are an elephant, a rhinoceros, a wild buffalo, a clouded leopard, a swamp deer, and a hog badger. They were found in four different kinds of perilous situations, including a flooded ditch, attacks by poachers that killed the mother, a river in spate, and dangerous proximity to human habitat. After a few weeks in the rescue centre, each creature demonstrated one characteristic trait that stood out above all others: one was mischievous, another aggressive, a third shy, the fourth retiring, one fretful and the last one frisky.

Three creatures were actively injured.

The wild buffalo, who was found in a flooded ditch, is aggressive.

The creatures found in the river in spate are the mischievous and the fretful ones.

One of the two found in the flooded ditch is actively injured, while two of the uninjured, but severely stressed were found in the river in spate and as a victim of attack by poachers, respectively.

The shy creature was rescued from close to human habitat.  
 The swamp deer is fretful, and is actively injured.  
 The rhinoceres was found in a flooded ditch, and the clouded leopard was a victim of attack by poachers.  
 The elephant is mischievous and severely stressed.

Which of the following assertions is/are true?

- A. If the creature who has a retiring temperament is uninjured, then the frisky creature is a clouded leopard.
- B. The hog badger is shy, and was found close to human habitat.
- C. If the creature who is aggressive by temperament is actively injured, then so is the one who is, by nature, retiring.
- D. The elephant is uninjured.

25. From the options at bottom, select the Indian author/s writing in English whose works are represented below:

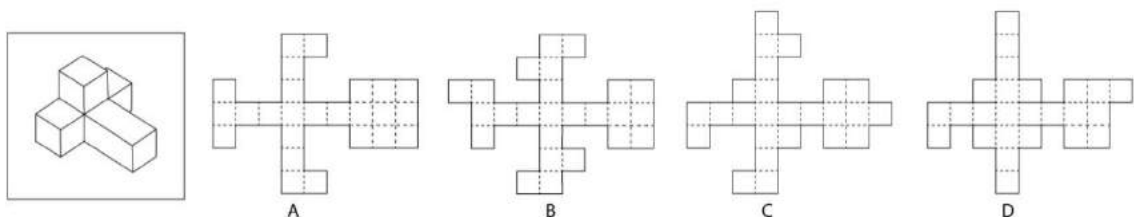
- i. Circle of Reason
- ii. Shadow Lines
- iii. Prison and Chocolate Cake
- iv. Nectar in a Sieve
- v. Roots and Shadows
- vi. That long silence

- A. Nayantara Sahgal
- B. Amitav Ghosh
- C. Namita Gokhale
- D. Shashi Deshpande

26. A recent survey among concertgoers found that smaller, older halls sound better for symphony orchestras, as compared to bigger, modern ones. What is/are the reason(s) for this?

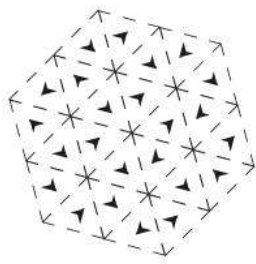
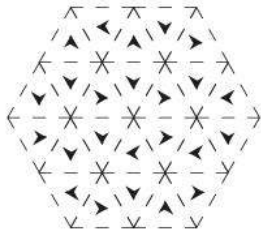
- A. Smaller halls are better able to reflect bass notes from the side walls and the ceiling, which is an important factor in the quality of symphony sound.
- B. Old halls are a part of history and heritage, so people think they sound better.
- C. Old concert halls with good acoustics tend to get maintained and preserved, while ones with suboptimal acoustics get renovated or replaced.
- D. The atmosphere is more intimate in an older concert hall—visually as well as acoustically—because the concertgoer is relatively close to the musicians.

27. Identify which of the options given below can be folded to make the 3D object shown in the box.

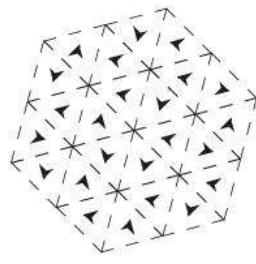




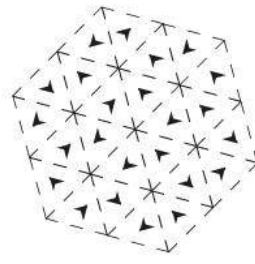
28. Which of the figures given below is/are simple rotations of the figure above.



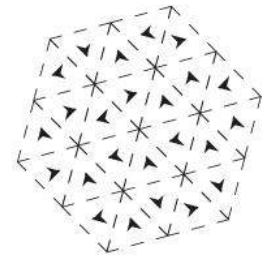
A



B



C



D

29. All doctors have to have a good understanding of the human body. Vijay has a good understanding of the human body. So he must be a cardiologist.

Which of the following options exhibit the exact same fallacy as the statement above.

- A. All dentists have to have a good understanding of human teeth. Santosh really has a good understanding of human teeth. So he must be a medical practitioner.
- B. All canines hunt in packs. Devil always hunts with his pack. So he must be a wolf.
- C. All good artists have a good sense of colour. Sunita has an excellent sense of colour. So Sunita must be a painter.
- D. All lecturers have to talk a lot. Vineet can talk for hours together. So he must be a teacher.

30. Select the artwork(s) which is/are attributed to Leonardo Da Vinci:



A



B



C



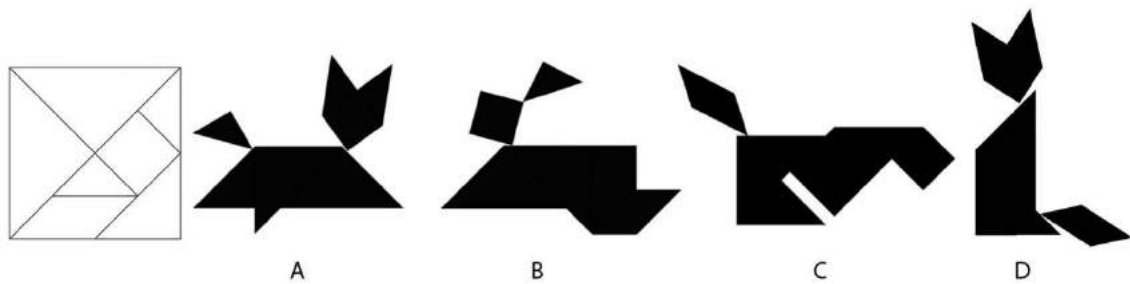
D



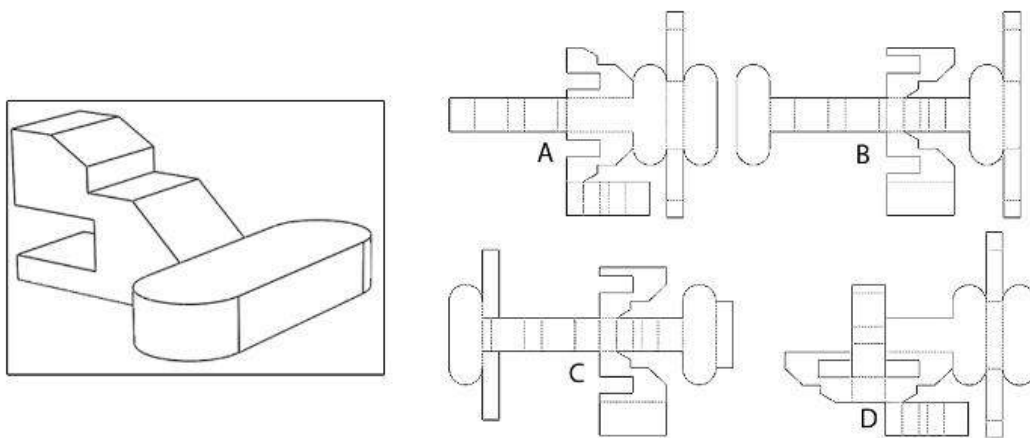
31. Which of the following is a/are river(s):

- A. Alakhnanda
- B. Parvati
- C. Vaigai
- D. Baralacha La

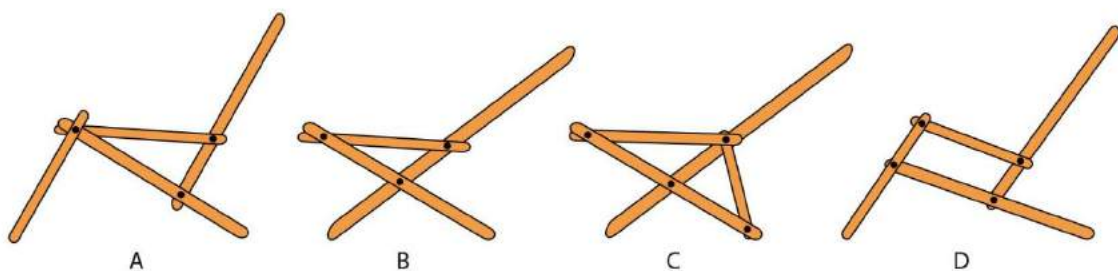
32. A square is cut into 7 pieces, as shown on the extreme left of the image. Identify which of the options can be made using all 7 pieces.



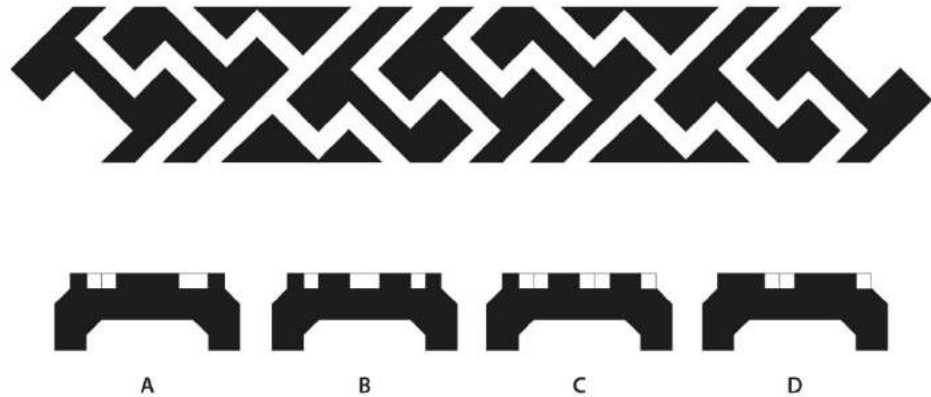
33. Identify which of the options given below can be folded to make the 3D object in the picture shown on the left.



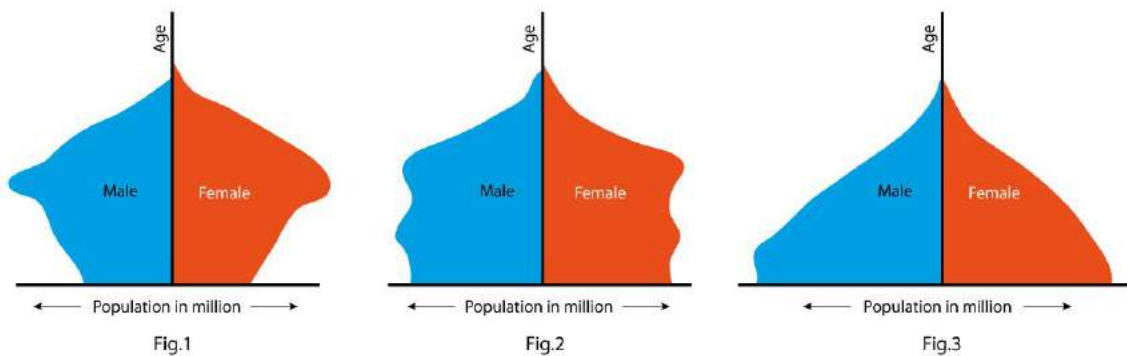
34. Shown in the image are schematic diagrams of folding chair structures. If the black dots indicate a hinged joint, identify the structure(s) that will work as a folding chair.



35. Shown below is a tyre tread mark. Choose the correct cross-section(s) that correspond(s) to the same tread mark. All cross sections are perpendicular to the tyre.



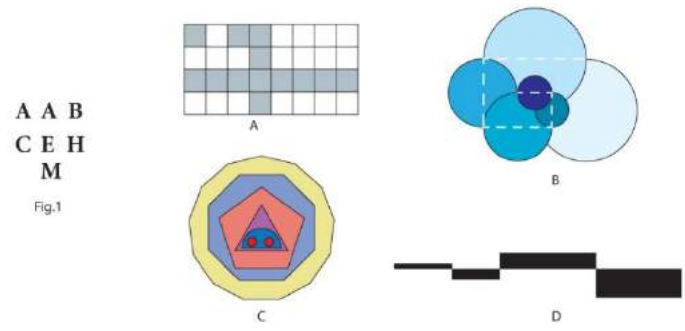
36. Shown below are three thematic population age-sex pyramids of three countries. The horizontal axis represents population in millions and the vertical axis represents age cohorts for both male and female population.



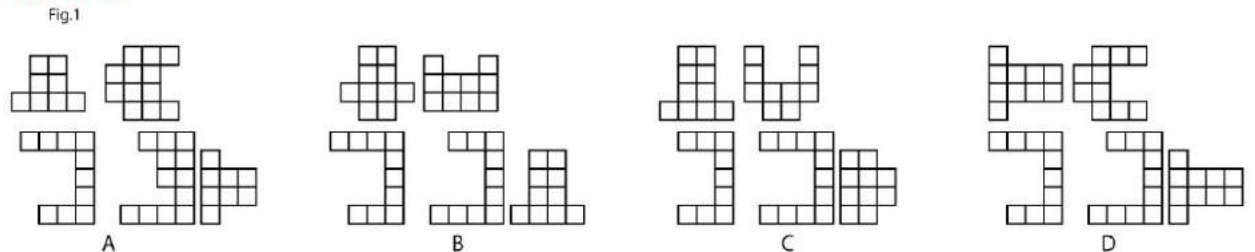
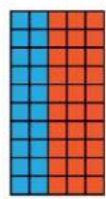
Which of the following statements is/are correct?

- A. Figure 2 depicts a low population growth, whereas it is high in figure 3.
- B. Figure 1 and figure 2 are from developed nations.
- C. Figure 1 depicts an aging society.
- D. Figure 3 depicts low life expectancy.

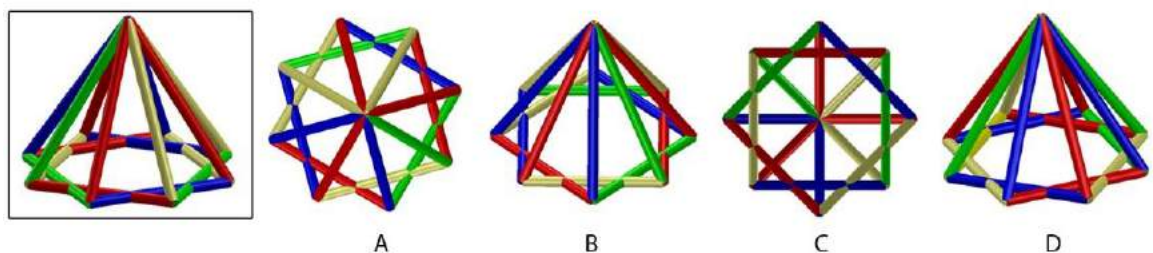
37. Figure 1 shows a specific pattern. From the options below, select the pattern that best matches the one in Figure 1.



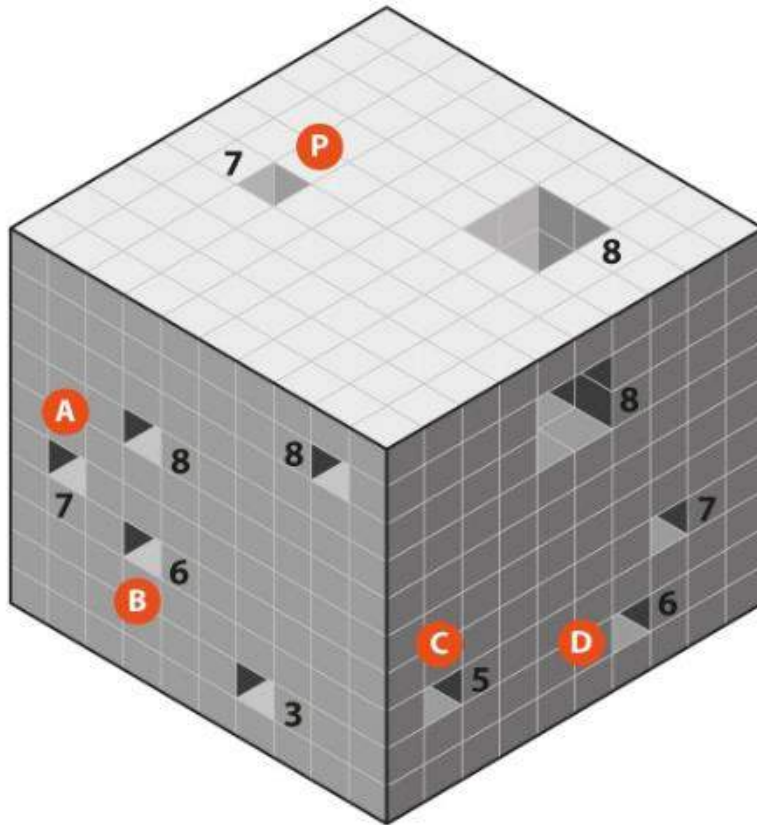
38. Figure 1 below depicts the locations of 50 families. They are affiliated with red and blue parties as shown. Five wards are to be drawn such that they are continuous and have equal number of families. The party that wins three or more of the five wards wins the election. Select the option(s) such that the blue party wins.



39. Given below is a structure made of coloured straws. Which of the views shown in the options belong(s) to the object in the box?



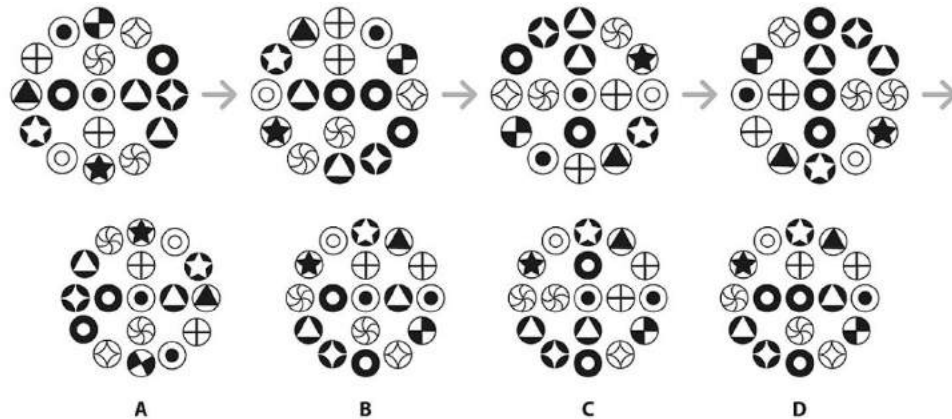
40. Holes have been drilled through a cube of size 10 x 10 x 10 units, as shown in the figure below. The number near each hole indicates its depth in units. All holes, except A, B, C, D and P, have been sealed on the surface after drilling. If water is poured through hole P, from which of the holes A, B, C, D will it find its way out?



## Section C: Multiple Choice Questions

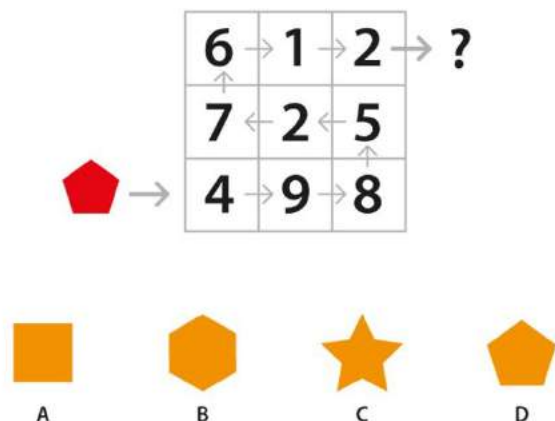
This section contains a total of 40 Multiple Choice Questions (MCQ). Each question has four choices out of which ONLY ONE is the correct answer. There is NEGATIVE marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will receive -1 (minus 1) mark. Questions not attempted will be given zero marks. Questions from 41 to 80 belong to this section.

41. Choose the option that comes next in the pattern sequence given below.

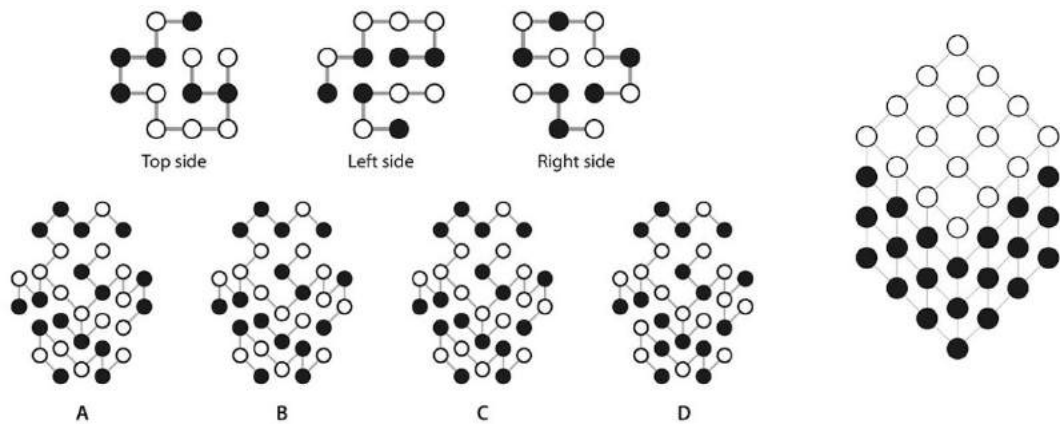


42. A polygonal shape moves through a series of numbered tiles as shown in the figure. The shape transforms itself at every tile according to rules given below. There can be one or more transformations on any given tile. Choose the resultant polygon from the options below.

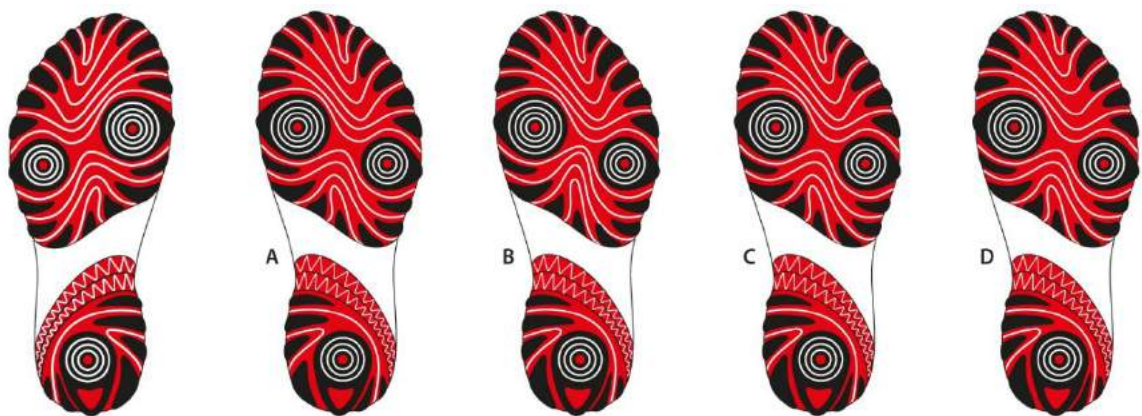
- i. At even numbers one side gets added to the shape.
- ii. At odd numbers two sides get removed from the shape.
- iii. If the number is divisible by 2, one side gets added to the shape.
- iv. If the number is divisible by 3, one side is removed from the shape.
- v. On reaching the first prime number the colour of the shape changes to yellow.
- vi. On reaching a second prime number the colour of the shape changes to orange.



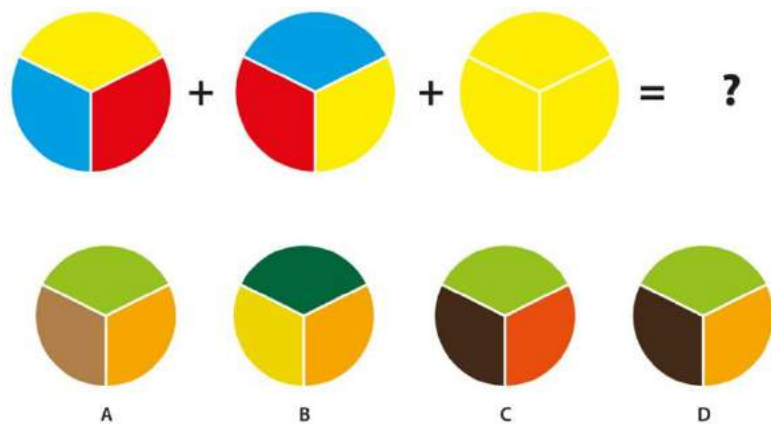
43. Three sides, each with circles and connecting lines, show three faces of a three-dimensional cube. (An example of such a cube is shown on the right.) Choose the correct option that corresponds to a cube with the three sides shown below.



44. From the given options, choose the correct shoe sole that pairs with the sole shown on the left.



45. A circular palette with three pigment colours of the same quantity are mixed in the sequence shown below. Choose the correct resultant colour from the options.





46. Figure 1 shows the top view of a lawn sprinkler. The Swastika-shaped arms rotate freely around a central pivot which supplies water to the arms. Water is sprinkled through the nozzles located at the end of the arms, which causes the sprinkler head to rotate. Now, imagine the whole sprinkler submerged under water and imagine the water being aspirated (suctioned) instead of being expelled. Which direction will the sprinkler head rotate?

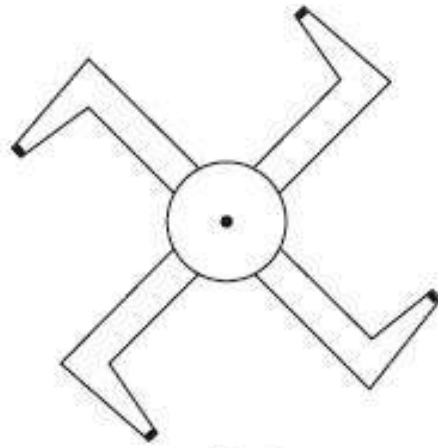
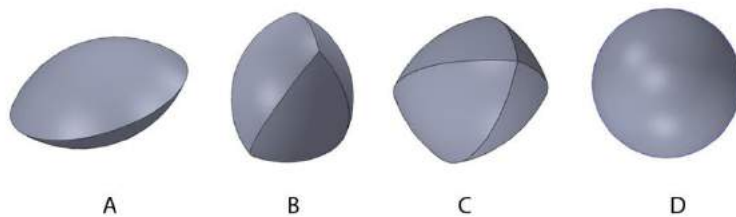


Fig. 1

- A. It will rotate anti-clockwise.  
 B. It will rotate clockwise.  
 C. It will not rotate at all.  
 D. It will shuffle between clock-wise & anti-clock-wise rotations.
47. Four spheres are merged as shown in the box. After merging, the portion that is common to all of them (i.e. intersection) is removed. Identify the removed portion from the options given below.



48. Identify which of the musical instruments mentioned below use(s) the technique of hammering on strings to produce sounds: Santoor, Piano, Harmonium and Keyboard.


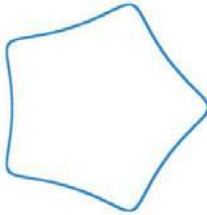
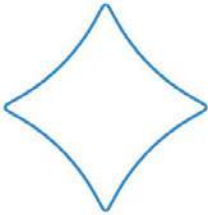

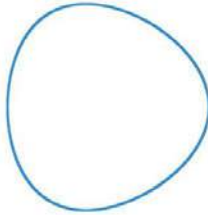
- A. Piano and Santoor.  
 B. Only Santoor.  
 C. Harmonium and Santoor.  
 D. Keyboard and Piano.



49. A point P is placed at a distance of 12 cm from the centre of a circle of radius 17 cm. How many integer length chords of this circle can pass through P?

- A. 19
- B. 24
- C. 32
- D. 360

50. Given below are images drawn with the same set of equations but with different parameters. The parameters used to generate a figure are given below the figure. Identify the correct set of parameters which would generate the figure shown on the right.

				
$R = 10$ $r = 2$ $c = 2$	$R = 10$ $r = 2$ $c = 1$	$R = 16$ $r = 4$ $c = 3$	$R = 108$ $r = 4$ $c = 2$	?

- A.  $R = 24, r = 8, c = 0.9$
- B.  $R = 24, r = 6, c = 0.9$
- C.  $R = 24, r = 12, c = 1$
- D.  $R = 24, r = 3, c = 3$

51. Choose the set of words that will correctly complete the following ten sentences from the word sets given in the answer options.

- I. The unnecessarily complex plot left me (bemused / amused).
- II. The dispute should be resolved by a (disinterested / uninterested) judge.
- III. A cup of hot coffee after a long day is (enervating / energizing).
- IV. She (depreciated / deprecated) his efforts.
- V. He (flaunted / flouted) the rules.
- VI. The new batsman (floundered / foundered) initially, but recovered after sometime.
- VII. By a (fortunate / fortuitous) coincidence, I met my old friend at the mall.
- VIII. The rebels were (interned / interred) in the military jail.
- IX. The artist had a (luxurious / luxuriant) imagination.
- X. His (simplistic / simple) answer suggested he wasn't familiar with the material.

- A. bemused, disinterested, energizing, deprecated, flouted, floundered, fortunate, interred, luxurious, simplistic.
- B. amused, uninterested, enervating, depreciated, flouted, foundered, fortuitous, interned, luxuriant, simple.

- C. bemused, disinterested, energizing, deprecated, flouted, floundered, fortuitous, interned, luxuriant, simplistic.
- D. amused, disinterested, enervating, depreciated, flaunted, foundered, fortuitous, interned, luxurious, simple.

52. Given below is a sequence of shapes arranged from left to right. There are eight rules which, when applied to the sequence, will transform it to one of the four options shown below. Identify the correct option.

		Switch the 5th and 2nd shapes.
		Change shapes with a cross inside a square with shapes with a cross inside a circle.
		Replace all square shapes with their preceding circular shape.
		Reverse the whole sequence.
		Switch the 4th and 7th shapes.
		Switch the 3rd and 6th shapes.
		If 2 identical shapes occur consecutively, switch the 1st occurrence of the shape with the 1st shape in the whole sequence.

A.

B.

C.

D.

+ + + + + + = ?

53. Which of the options given below will correctly complete the series?

<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;"> <p>1</p> </div> <div style="border: 1px solid black; padding: 5px;"> <p>2</p> </div> </div>
<div style="display: flex; justify-content: space-around;"> <div style="border: 1px solid black; padding: 5px;"> <p>4</p> </div> <div style="border: 1px solid black; padding: 5px; width: 100px; height: 100px;"> <p>3</p> </div> </div>

3

A

3

B

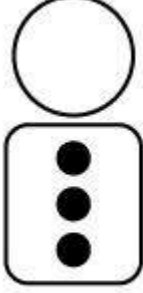
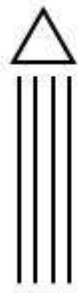


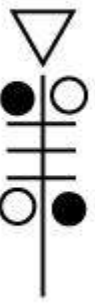



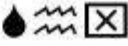
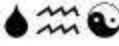
3

C

3

D

54. Five figures are coded with symbols, as shown below. From the given options, find the code for Figure 1.

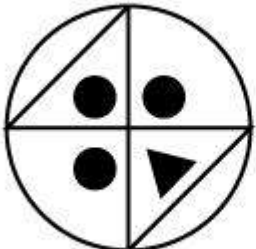
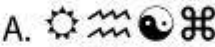
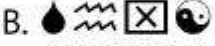
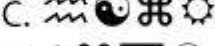
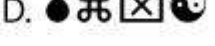


Fig.1

A. 

B. 

C. 

D. 

55. Identify the option that can be assembled to form Figure 1.

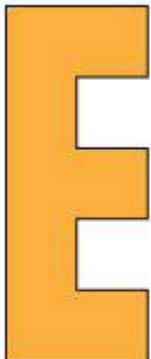
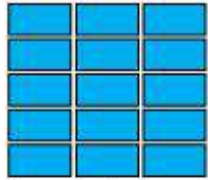




Fig.1



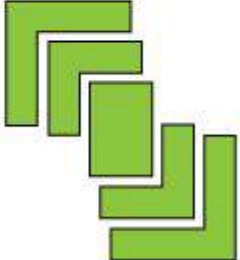
A



B



C



D

56. Read the following statements related to the economy.

- I. Devaluation of a currency means fixing the value of currency in multilateral consultation with the IMF, the World Bank, and major trading partners.
- II. The Law of Diminishing Marginal Utility states that as you keep on consuming a commodity continuously, the satisfaction derived from each subsequent unit will keep falling.
- III. Since human wants are unlimited and available resources are limited, a rational consumer will try to satisfy the least urgent needs which can be met within his/her income levels.
- IV. Budget deficit means the difference between all receipts and all expenditure.

Which of the above statements are TRUE?

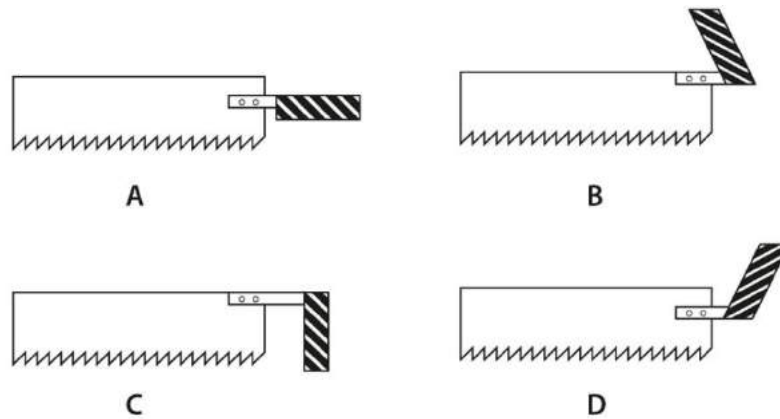
- A. I & II
- B. II & III
- C. III & IV
- D. II & IV

57. Given below is a list of sixteen idioms connected with water. Each of the four options contains meanings of four randomly selected idioms from the list. Identify the option that contains correct meanings for all four of the chosen idioms.

- I. Fish out of water
- II. Tread water
- III. Come hell or high water
- IV. Watershed moment
- V. Pour oil in troubled waters
- VI. Throw the baby out with the bath water
- VII. Watering hole
- VIII. Head above water
- IX. Carry water for someone
- X. Water under the bridge
- XI. Uncharted waters
- XII. Muddy the waters
- XIII. Mouth watering
- XIV. In deep water
- XV. Dip your toe in the water
- XVI. Water down

- A. tavern, past, make progress, in trouble
- B. confuse or complicate the situation, to help, dilute, make matters worse
- C. tentative step, persistent in the face of difficulty, tasty, survive
- D. turning point, new territory, discard bad with good, misfit

58. Shown below are different handle positions of a hand tool. Identify which handle position gives the most comfortable hand posture for a downward to-and-fro motion.



59. A pilot has to fly direct from Mumbai to Singapore. The departure of the flight from Mumbai airport is at dusk. Which colour goggles should the pilot be wearing at Mumbai airport for quickly adapting to darkness after take-off?

- A. Blue
- B. Black
- C. Red
- D. Brown

60. Here is a sketch of Alka with her mouth missing. Choose the correct sequence from the mouth shapes given below that will allow Alka to say “WELCOME TO UCEED”.



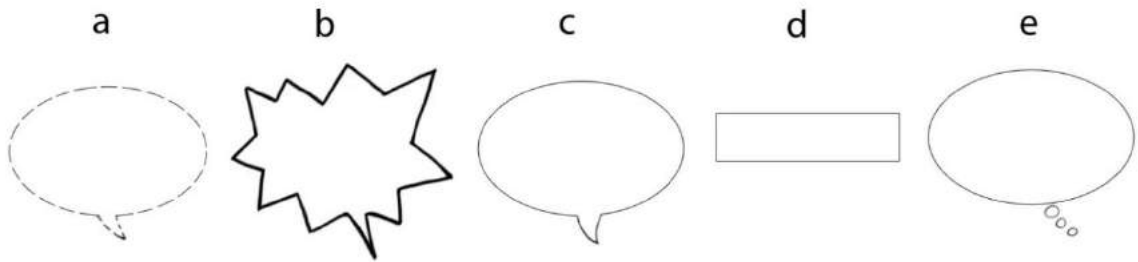
Alka's Mouth Shapes:



- A. 5, 4, 2, 6, 1, 8, 3, 7
- B. 5, 4, 2, 8, 3, 1, 6, 7
- C. 5, 7, 4, 2, 1, 8, 3, 6
- D. 4, 2, 5, 1, 6, 8, 3, 7

61. If the following passage describing a situation was to be made into a comic page, match the numbered dialogues with the appropriate bubble according to comic book conventions:

Meanwhile at the college canteen, the manager was livid (1). "How many times have I told you to keep track of the orders?" (2), He screamed at the helpless waiter. Everyone stood still and watched. "What happened? Why is he screaming?" (3), I turned around to ask the person behind me in the queue at the counter. He bent forward and whispered, "Nothing new...he screams at everybody all the time. His staff hate him for that" (4). "Oh, that's not fair!" (5), I thought to myself, while the manager got louder and louder.

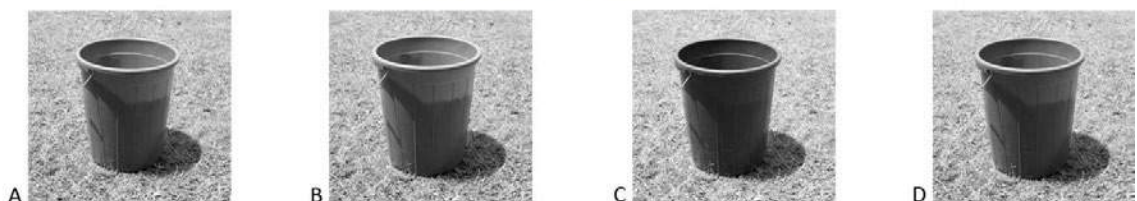


- A. 1-a, 2-b, 3-c, 4-e, 5-d
- B. 1-d, 2-b, 3-c, 4-a, 5-e
- C. 1-d, 2-b, 3-c, 4-e, 5-a
- D. 1-c, 2-a, 3-b, 4-d, 5-e

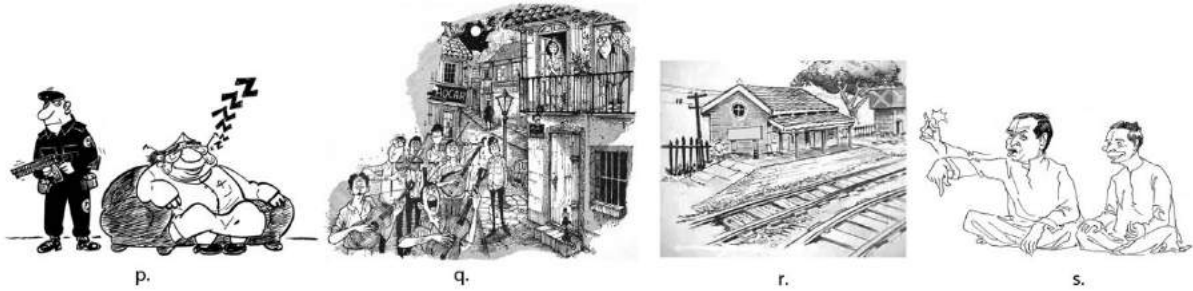
62. Arrange the following video formats according to their evolution:  
Beta, U-matic low band, VHS, Digibeta, U-matic Hi band

- A. VHS, U-matic low band, U-matic hi band, Beta, Digibeta
- B. U-matic low band, U-matic hi band, Beta, Digibeta, VHS
- C. Digibeta, Beta, U-matic hi band, U-matic low band, VHS
- D. Beta, Digibeta, U-matic low band, U-matic Hi band, VHS

63. Black & white photographs of the bin shown in Picture 1 were shot using red, yellow, and green colour filters. An additional black & white photograph was shot without any filter. From the given options, identify the photograph shot using red filter.



64. Match the cartoonist with his work.



- i. Mario Miranda      ii. Sudhir Tailang      iii. Keshav      iv. R.K.Laxman

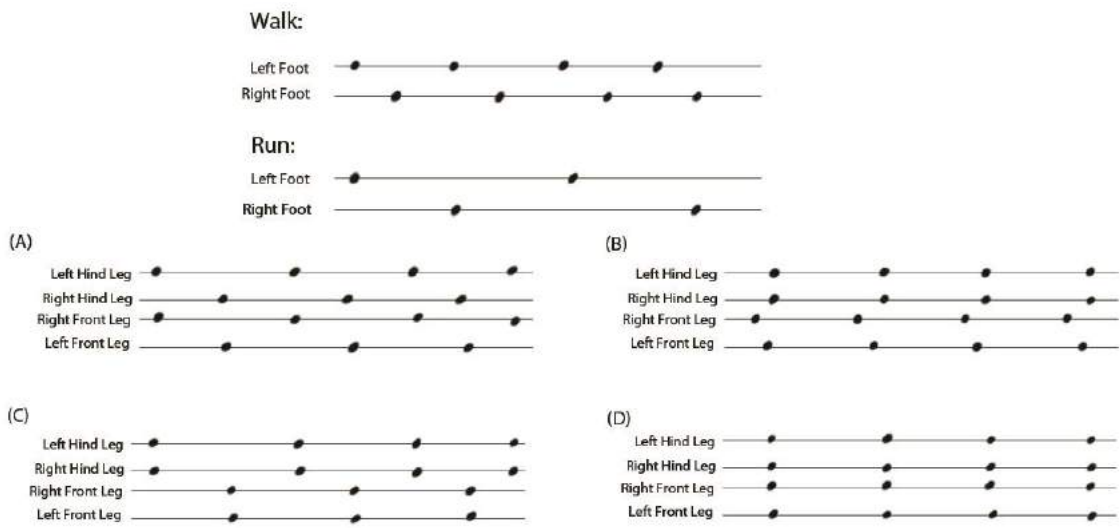
- A. i-q, ii-p, iii-s, iv-r  
 B. i-p, ii-s, iii-q, iv-r  
 C. i-q, ii-p, iii-r, iv-s  
 D. i-q, ii-s, iii-p, iv-r

65. Here are two sketches of Priyanka standing in front of a mirror. Spot the differences in the two sketches, and choose the correct number of differences from the options given below:



- A. 5  
 B. 7  
 C. 9  
 D. None of the above

66. Given below are top views of a straight path along which a man moves in different ways. The dots represent the positions where his feet touch the ground. Choose the correct option that represents a dog running fast:



67. A colour picked in a paint software had the following values (RGB mode): Red=255, Green=100, Blue=0

The colour picked was:

- A. Grey
- B. Brown
- C. Yellow
- D. Orange

68. Read the text given below and answer the question that follows.

This (presence of benefits) together with (four) reasons  
 Is what the Tathāgata himself explained  
 In (the sūtra) requested by Subāhu  
 For the benefit of those inclined toward the lesser (paths).

If a person with a helpful intention  
 Thinks, "I shall merely relieve  
 The headaches of (a few) beings,"  
 (And this thought) is (already) endowed with boundless merit,

Then it is needless to mention that  
 Wishing to dispel the boundless misery of every single being,  
 And wishing for each of them  
 To accomplish boundless qualities (also carries boundless merit).

Do even fathers and mothers  
 Have such a benefiting intention?  
 Do the gods and sages  
 Or even Brahma have it?



Which philosophical tradition does this text belong to?

- A. Jainism
- B. Advaita Vedanta Hinduism
- C. Buddhism
- D. Dvaita Hinduism

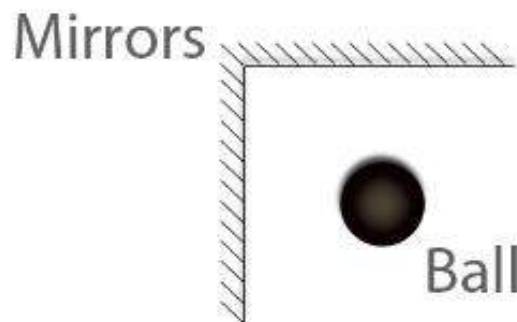
69. Climate scientists tell us that such extremes of weather as the floods in Chennai or the acute lack of rainfall in large parts of India are due to a phenomenon called El Niño. The name comes from:

- A. "The boy child" or baby Jesus, because it happens around Christmas time.
- B. "The fiery storm"—for the hurricanes that occur in Central and South America from September through December.
- C. "The bubbling sea"—named by fishermen for the huge waves that accompany dramatically varying temperature patterns.
- D. "The death zone"—named by scientists for the large numbers of marine animals that die on the Pacific coasts of the Americas, because of the seas warming up.

70. The *Vikram and Vetala* series of stories, well-known across India, originate in the:

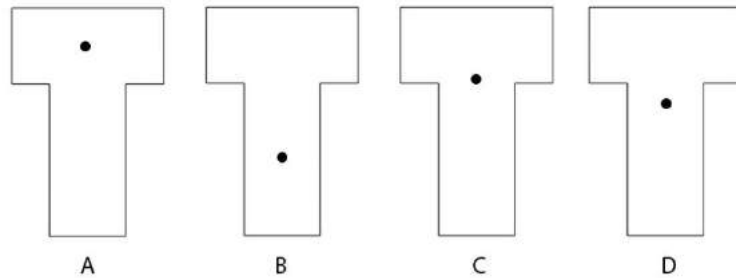
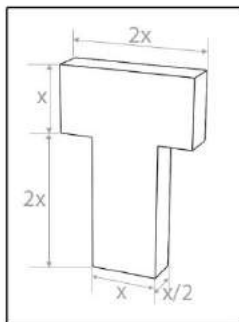
- A. Mahabhasya, perhaps of the 2<sup>nd</sup> century BCE
- B. Ubhayabhisarika, perhaps of the 4<sup>th</sup>-6<sup>th</sup> centuries CE
- C. Katha-sarita-sagara, perhaps of the 11<sup>th</sup> century CE
- D. Sukasaptati, perhaps of the 12<sup>th</sup> century CE

71. If a ball is placed in front of two mirrors at right angles to each other, as shown in the image, how many reflections will the ball generate?

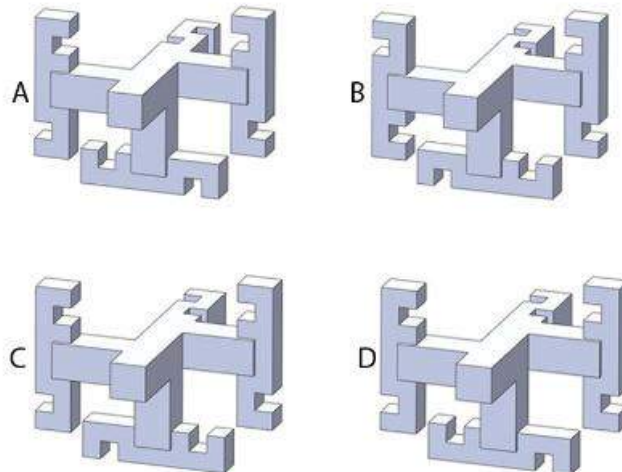
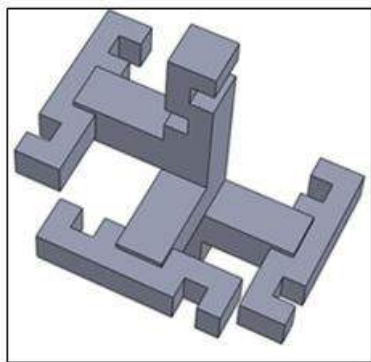


- A. 2
- B. 3
- C. 4
- D. 5

72. For the object shown in the box, which option identifies the position of its center of gravity correctly?

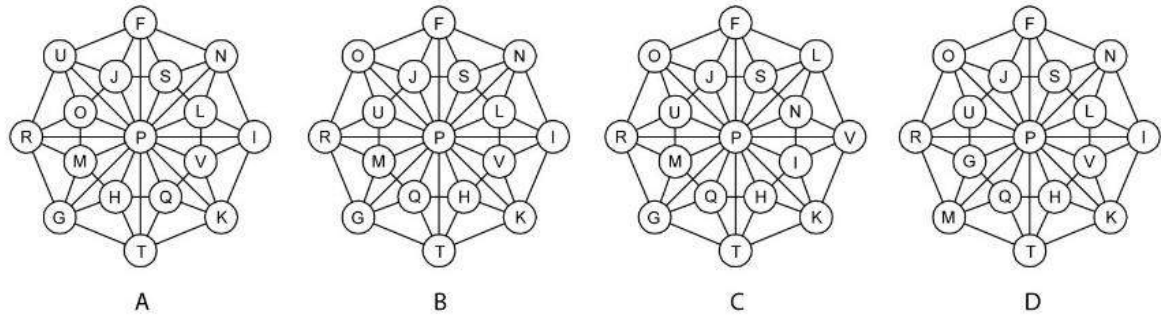


73. The image in the box shows a 3D object. From among the options below, select the one that shows the same object from a different view.



74. The circles in the image contain letters from F to V for purposes of identification of points. Directions are encoded in the statements below in such a way that NE stands for North-East, NNE for North-North-East, and so on. If all the following statements are true, select the correct representation of these statements from the given options.

- M is in NNE of G and L is in SSW of N
- P is in NW of K and U is in SSE of O
- V is in ESE of P and F is in NNW of S
- H is in SW of V and O is in NNE of J
- I is in SSE of N and Q is in SE of M

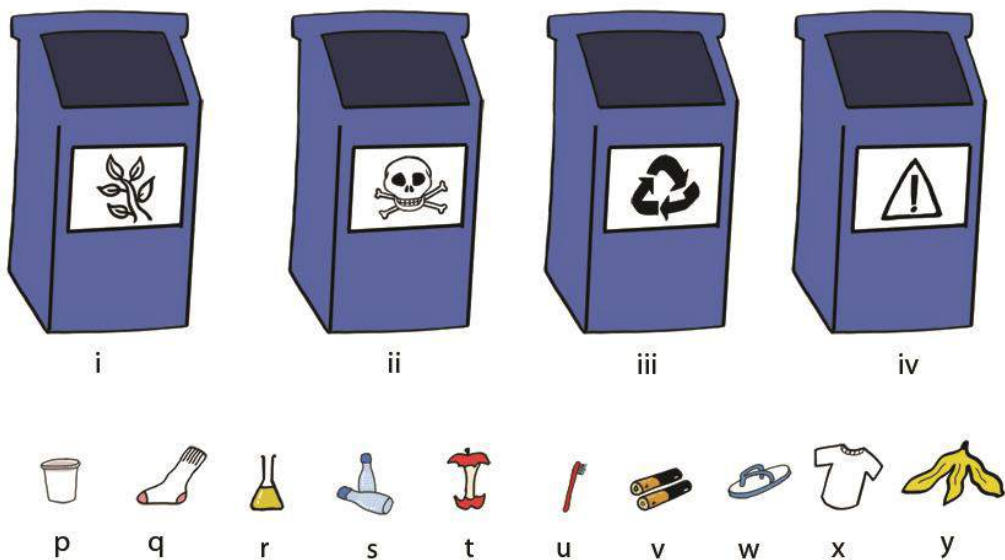


75. Select the option that has the correct match.

- |                           |   |
|---------------------------|---|
| p) Ramsar Convention 1971 | i) Unite countries to pursue sustainable development      |
| q) Vienna Convention 1981 | ii) Reduce GHG emissions                                  |
| r) Montreal Protocol 1989 | iii) Conservation and sustainable utilisation of wetlands |
| s) Kyoto Protocol 1995    | iv) Protection of the ozone layer                         |

- A. s-ii & q-iii
- B. p-ii
- C. s-iv
- D. q-iv & r-i

76. There are four bins labelled 'i' to 'iv' as shown below. If the objects labelled 'p' to 'y' are to be thrown in their respective bins, which of the following combinations is correct.



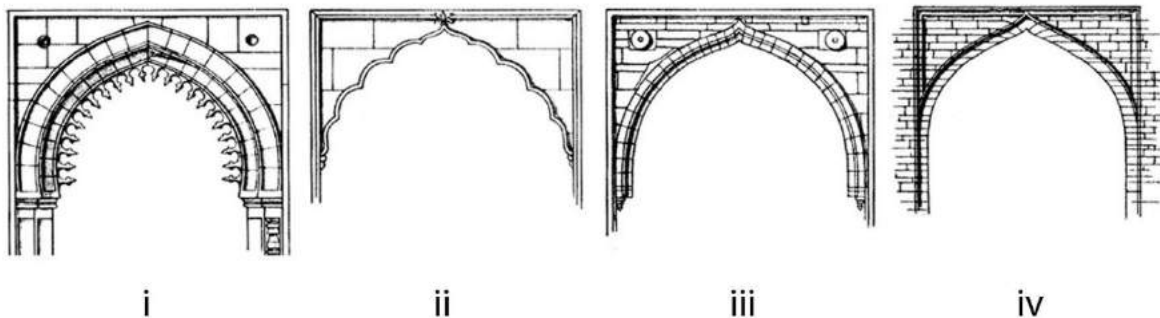
- A. p-i, q-iii, r-ii, u-i, x-ii.
- B. r-ii, t-i, x-iv, s-iii, p-iii.
- C. q-ii, u-i, y-i, v-ii, r-ii.
- D. w-iv, v-ii, x-iv, s-i.

77. Given below are some statements about rock-cut architecture. Which of these is TRUE?

- i. A lot of religious architecture was built or cut out of rock during the Vedic age; the remains of rudimentary sacrificial altars are evidence of the same.
- ii. Rock-cut temples were hollowed out of mountains or seams carved out of hard stone, but have more in common with conventional buildings constructed with blocks of dressed stone than with sculpture.
- iii. The transition from the earlier wooden to stone buildings resulted in “petrification” of forms; the heritage of the earlier periods was carefully transcribed into new materials.
- iv. The gigantic Kailasa temple at Ellora is the kind of rock-cut architecture—exactly as the rathas at Mamallapuram—where the monolithic building was carved straight out of living rock to create an occupiable space.

- A. i and ii
- B. ii and iii
- C. only iv
- D. only iii

78. Below is a set of pictures that show the variety of arches used in Islamic architecture in India from 7th to 17th centuries CE. Select the order in which the design of the arch developed.



- A. iv, i, iii, ii
- B. iv, ii, iii, i
- C. ii, iv, i, iii
- D. iv, iii, ii, i

79. Which disease is caused by the deficiency of proteins?

- A. Kwashiorkor
- B. Marasmus
- C. Pellagra
- D. Anorexia

80. The word given below is written in a specific font. From the options, choose the word that belongs to the same font family.

அறிகின்ற

टेडा    देवा    केथा    मेटा  
A                    B                    C                    D

END OF THE QUESTION PAPER

**UCEED 2015**

**Question Paper**

### Paper Specific Instructions

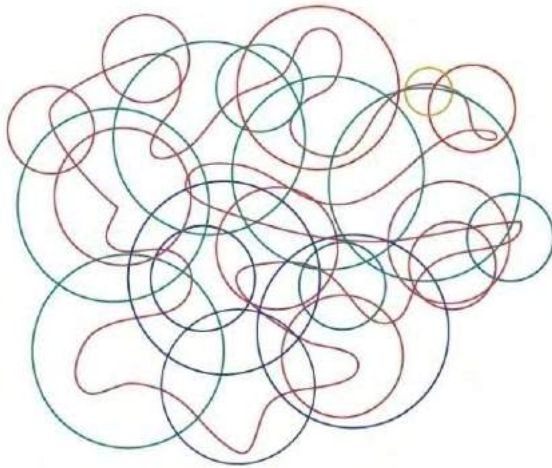
1. The examination is of 3 hours duration. There are a total of 100 questions carrying a total of 300 marks. The entire paper is divided into three sections, **A**, **B** and **C**. All sections are compulsory. Questions in each section are of different types.
2. **Section A (60 marks)** contains a total of 20 **Numerical Answer Type (NAT)** questions. For these NAT type questions, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will be awarded  $-1$  marks. Questions not attempted will result in zero mark. Questions 1-20 belong to this section.
3. **Section B (90 marks)** contains a total of 30 **Multiple Select Questions (MSQ)**. Each MSQ type question may have **one or more than one correct choice(s)** that are correct out of the four given choices. The candidate gets 3 marks **only if ALL** the correct answers, and no wrong answers are selected. There is **NO NEGATIVE** or **PARTIAL** marking for this section. Questions not attempted will be given zero marks. Questions 21-50 belong to this section.
4. **Section C (150 marks)** contains a total of 50 **Multiple Choice Questions (MCQ)**. Each MCQ type question has four choices out of which **only one** is the correct answer. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will be awarded  $-1$  marks. Questions not attempted will be given zero marks. Questions 51-100 belong to this section.
5. Calculators, charts, graph sheets, tables, cellular phone or other electronic gadgets are **NOT** allowed in the examination hall.
6. A Scribble Pad will be provided for rough work.



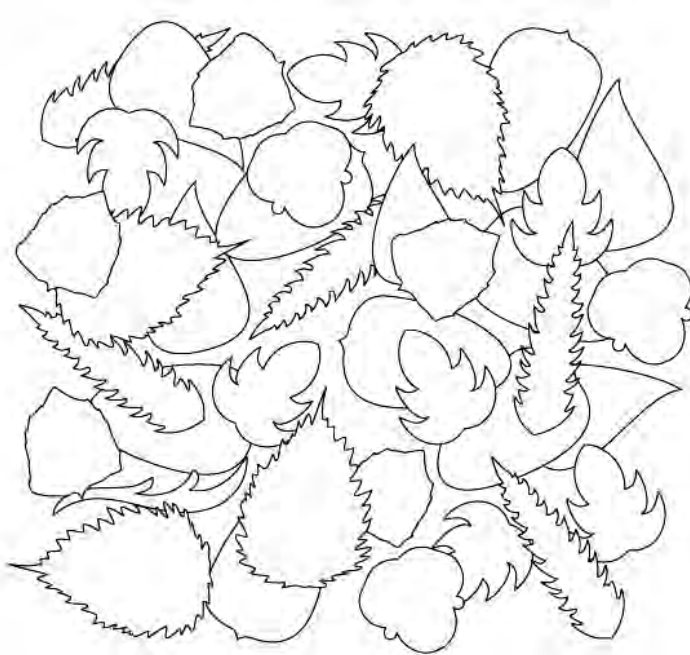
## Section A: Numerical Answer Type Questions

*This section contains a total of 20 Numerical Answer Type (NAT) questions. For these NAT type questions, the answer is a real number that needs to be entered using the virtual keyboard on the monitor. No choices will be shown for these questions. There is NEGATIVE marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will be awarded -1 marks. Questions not attempted will result in zero mark.*

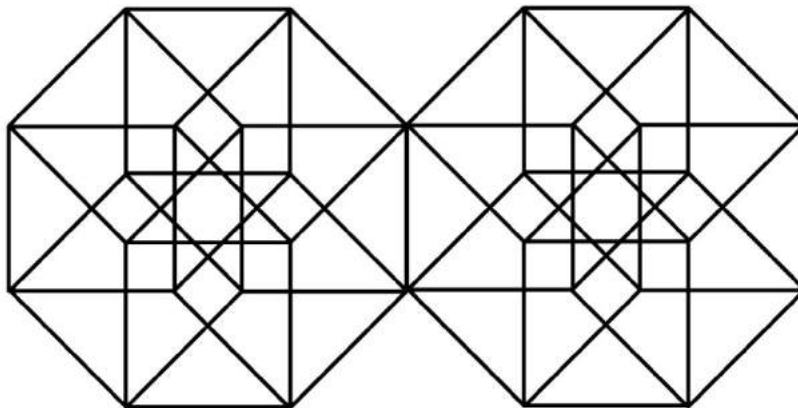
1. Count the number of circles in the given figure.



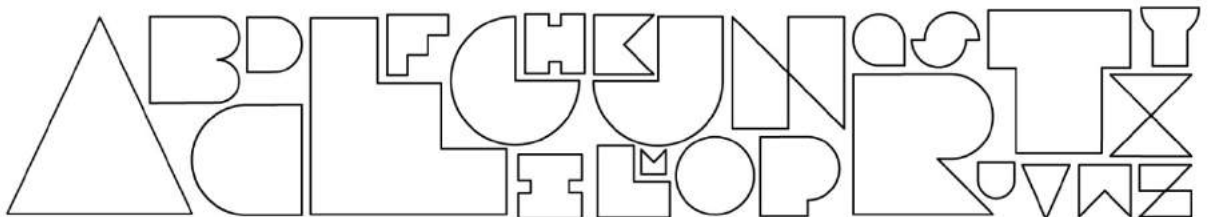
2. Shown here are different types of leaves. Count how many types of leaves there are.



3. Count the number of squares in the given figure.



4. Shown here are letters of an alphabet, from A to Z. How many of these letters, if flipped along the horizontal axis, can still be read as capital letters?



5. Count the number of fonts used in the given set of words.

spectrum auctions display holdings  
 industry maximum performance operators  
 programme reduction benchmark natural  
 fiscal cartelisation withdrawn utilized  
 emerged contributed designer allegations  
 total compensation mango farmers sugar.

6. The five most recent cricket scores of four teams are as follows:

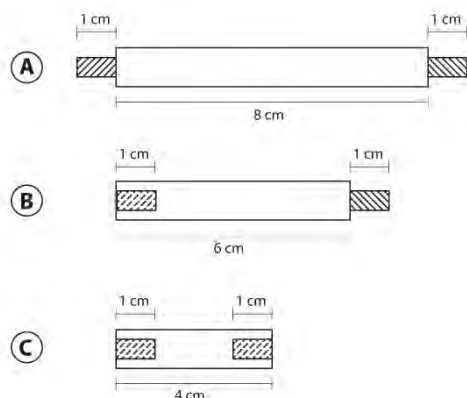
Team 1	Team 2	Team 3	Team 4
255	301	309	288
278	282	319	301
291	269	279	322
268	299	312	310
308	279	316	289

Based on this information, identify the team with the most consistent performance (least variance in scores), and write its average.

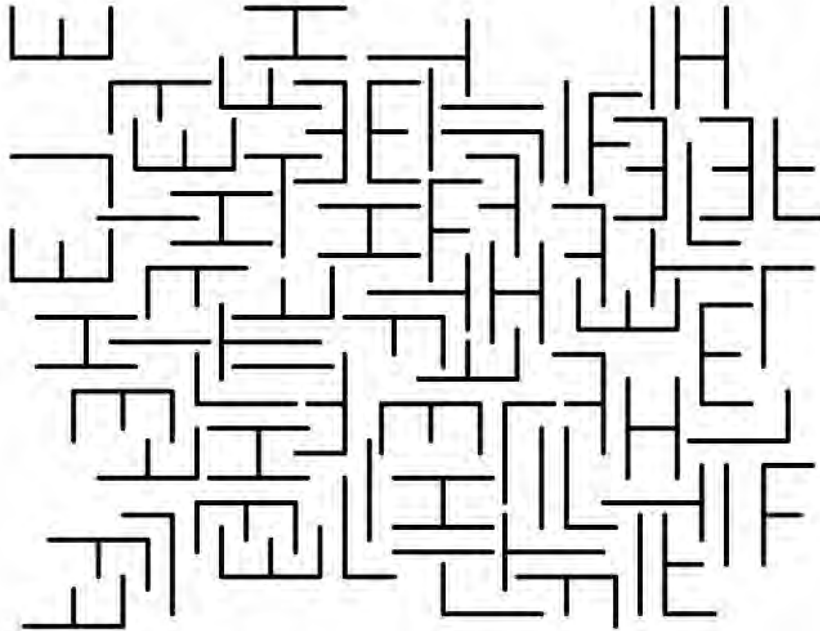
7. Count the number of spelling mistakes in the given passage.

They may perhaps have nothing to retract from thier past lives; they could publish a signed account of everything they have ever said or done; but they are consceintious creatures, feeble descendants of doctrinaires, and their wisdom is negative and sterile. We do not recieve wisdom, we must discover it for ourselves, after a journey through the wilderness which no one else can make for us, which no one can spare us, for our wisdom is the point of view from which we come at last to regard the world. The lives that you admire, the atitudes that seem noble to you, have not been shaped by a paterfamilias or a schoolmaster, they have sprung from very different beginings, having bee influenced by everything evil or comonplace that prevailed round about them.

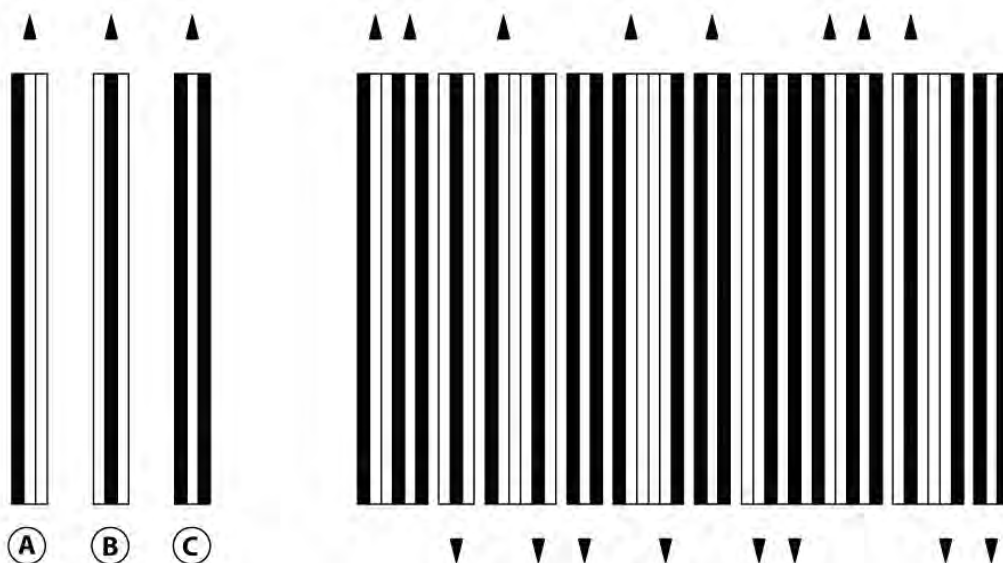
8. Shown below are three types of interlocking rods. There are total 12 rods, of which 6 are type A, 2 are type B and 4 are type C respectively. What is the maximum length that can be achieved by connecting the rods appropriately?



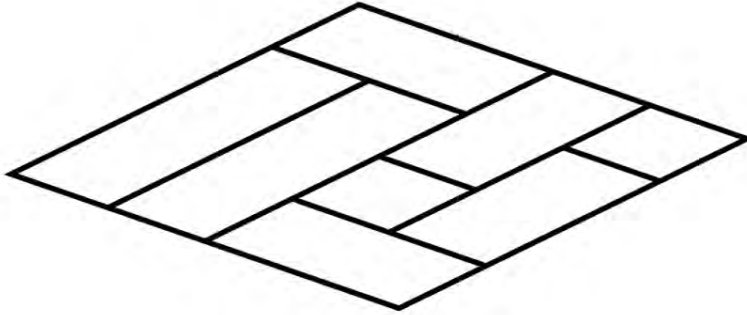
9. The given figure is made of letters L, T, H, I, E and F, set in different orientations. Find the total number of occurrences of capital letter T in the figure.



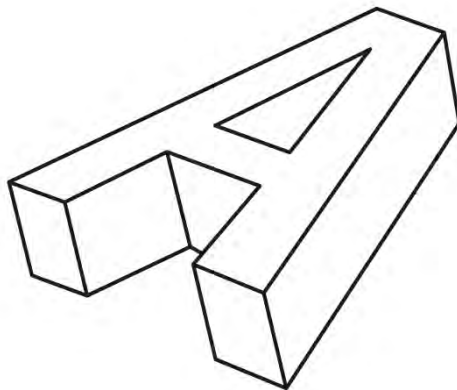
10. Shown below, to the left, are three types of pencils: A, B and C. Find the total number of type A pencils in the figure on the right, which shows various pencils pointing in either of the two directions, up or down.



11. Count the total number of parallelograms in the given figure.

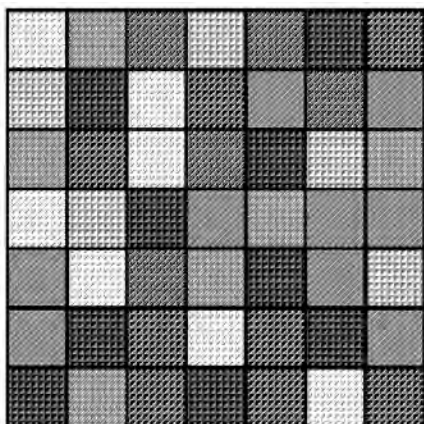


12. Imagine letters are extruded into three dimensional objects, as shown in the figure on the left (the letter A). If the word LOVE (shown on the right) were to be extruded, how many surfaces would it have?



**LOVE**

13. Count the number of unique patterns in the given grid.



14. In photography, f-numbers represent lens aperture. Write the missing f-number in the sequence below.

f/2.8, f/3.2, f/3.5, f/\_\_, f/4.5, f/5.0, f/5.6

15. Given below are eight pieces of a puzzle. Arranged correctly they form a four digit number. What is the number formed after the correct arrangement?



16. The following excerpt is from an article on Indonesian Shadow Puppet Theatre:

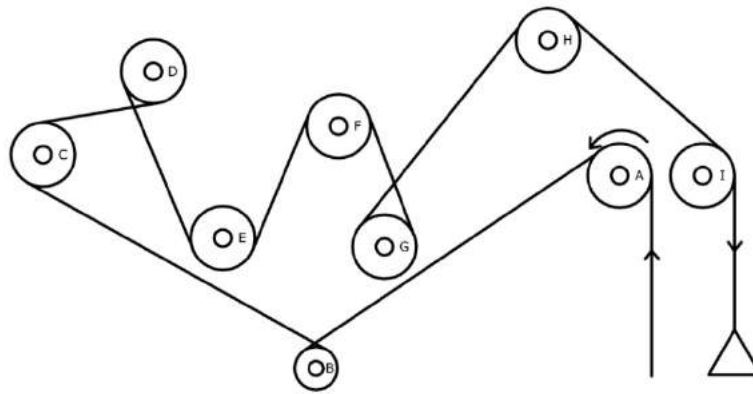
“Muslim Indonesia is a fascinating story of tolerance and absorption, a relaxed compromise between religions, unlike any of the other multi-faith societies. *Wayang Kulit*---'skin theatre'---is an ancient Indonesian art of shadow theatre. Historically, performances in the Theatre of Shadows featured Hindu epics and lasted throughout the night. Light from an oil lamp behind the puppeteer's head cast the shadows from the puppets onto a white sheet. Some members of the audience---usually the women and children---sit on the shadow side of the screen, while the men would sit on the favoured other side, where the features and colours of the puppets could be seen. The puppeteer, known as a *dalang*, would not only control the puppets, but also conduct the accompanying music, performed by a gamelan orchestra”.

The following statements have been derived based on both explicit and implicit reading of the above passage:

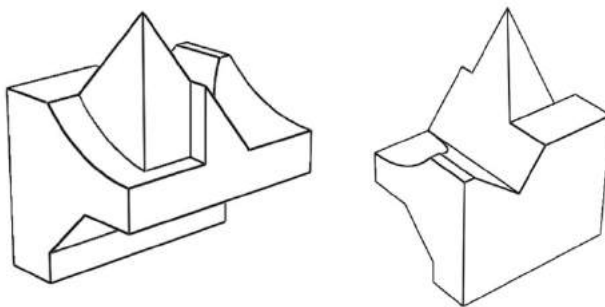
- I. Indonesian society accorded pre-eminence to women and children.
- II. Modern *Wayang Kulit* probably uses electric lights to cast shadows.
- III. *Wayang Kulit* had Islamic origins.
- IV. Gamelan is a traditional ensemble music of Java and Bali in Indonesia.
- V. The puppets are made of fabric for easy manipulation by the *dalang*.

How many of the above statements are FALSE?

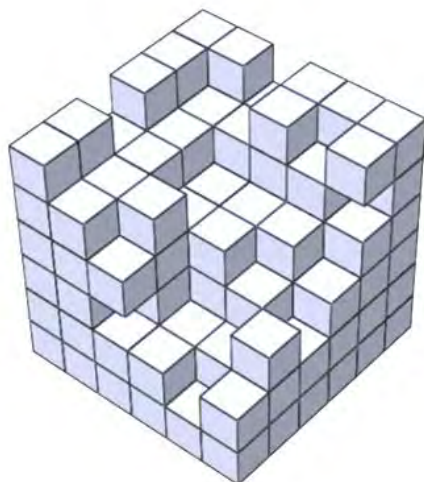
17. Shown below is a belt and pulley arrangement. How many pulleys are rotating clockwise?



18. Two views of the same solid object are shown below. Count the number of surfaces the solid object has.



19. Count the number of cubes in the given figure. No cube has been removed from parts of the figure that are not visible.





20. A, B, C, D, E and F are six robots. Each robot can contact some other robots, though none of the robots can contact all the robots. The rules of contacting are as follows:

B can contact E and can be contacted by C

D can be contacted by A, E and F

F can contact C

D can contact C and E

F can be contacted by A

A robot can receive a message from other robots that can contact it and can relay the message to another robot it is allowed to contact.

What is the minimum number of robots that are required between robot A and robot B, to send a message from robot A to robot B?

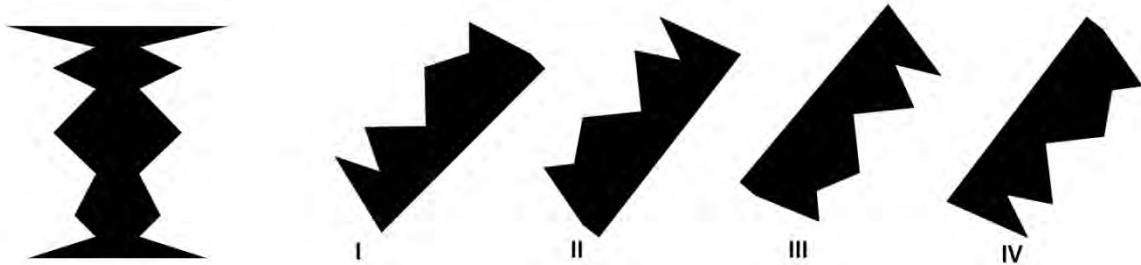
## Section B: Multiple Selection Questions

This section contains a total of 30 Multiple Select Questions (MSQ). Each MSQ type question may have one or more than one correct choice(s) that are correct out of the four given choices. The candidate gets 3 marks only if ALL the correct answers are selected, and no wrong answers. There is NO NEGATIVE or PARTIAL marking for this section. Questions not attempted will be given zero marks.

21. Which of the following statements is/are TRUE?

- A. Jacques Lacan was a French psychoanalyst and psychiatrist.
- B. Claude Lévi-Strauss is called the father of structural anthropology.
- C. Michel Foucault was a French writer who wrote, "Being and Nothingness".
- D. Ferdinand de Saussure was a Swiss linguist and semiotician.

22. Which of the four figures shown on the right exactly fit the figure shown on the left?

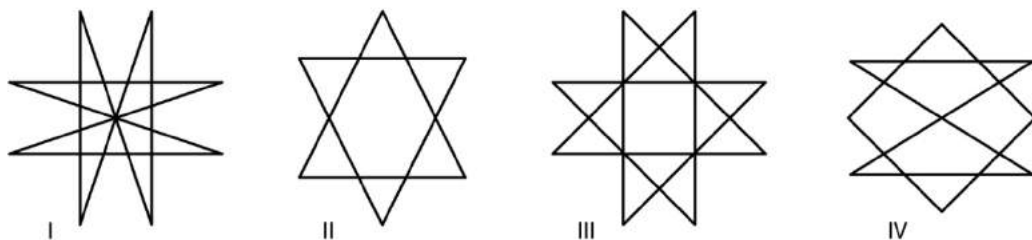


- A. I and II
- B. II and III
- C. I and IV
- D. None of the above options

23. Which of the following statements is/are TRUE?

- A. Ellora caves contain Hindu Shaivaite sculptures.
- B. Elephanta caves contain only Hindu Vaishnavite sculptures.
- C. Ellora caves contain only Hindu Shaivaite sculptures.
- D. Elephanta caves contain Hindu Shaivaite sculptures.

24. Which of the given figures can be drawn without either lifting the pen or retracing any line?

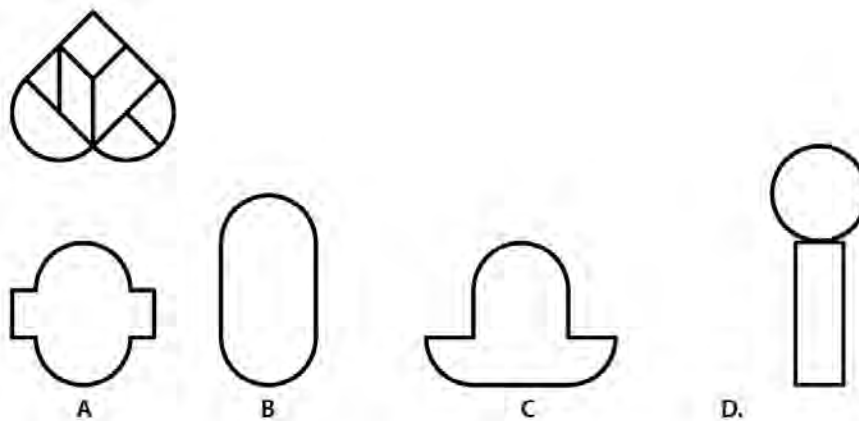


- A. None of the figures
- B. Figures I, II and III
- C. Figure IV
- D. All of the figures

25. The triangular shape (at left) is broken into several parts. Choose the correct set of parts from the figures (on the right) to put the triangle together again.



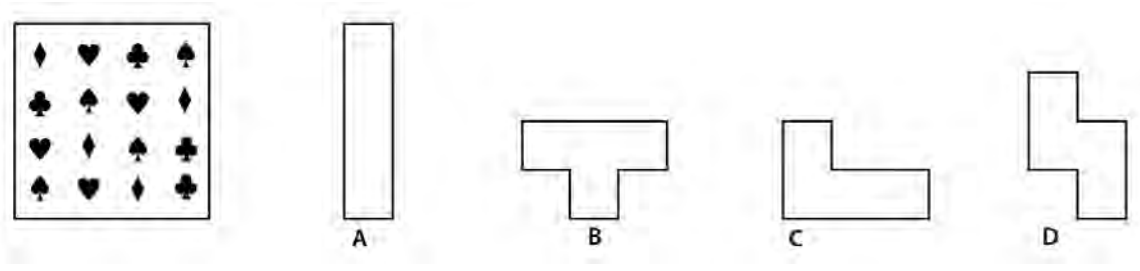
26. The given heart shape (on top) is made of different parts put together. Which of the shapes in the options can be constructed using all the parts of the given heart shape?



27. Which of the following statements is/are TRUE?

- A. Ustad Mansur was a painter during the reign of Jahangir, and he is well known for depicting plants and animals.
- B. The painting of "Emperor Jahangir Weighs Prince Khurram" in the Tuzk-e-Jahangiri is attributed to Manohar Das.
- C. Govardhan was a painter during the reigns of Akbar, Jahangir and Shah Jahan. He was one of the illustrators of the Baburnama.
- D. Nainsukh was a court painter during the reign of Aurangzeb, and he is well known for painting several of Aurangzeb's portraits.

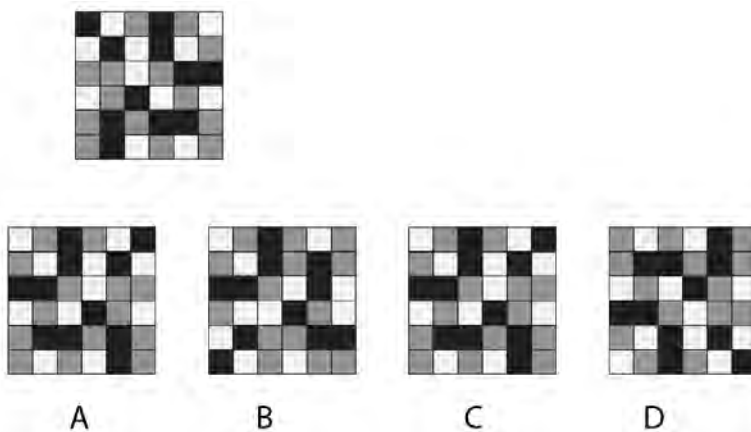
28. A square with four sets of symbols in it (shown below, at left) is to be divided into four equal parts such that each part has all four symbols in it. Which of the four shapes shown below (at right) fulfill(s) the condition?



29. Which of the following statements is/are TRUE?

- A. The Lion Capital of Ashoka found in Sarnath is carved out of granite rock.
- B. The Ellora caves are carved in granite rock.
- C. The descent of the Ganges in Mahabalipuram is carved out of granite rock.
- D. The Ajanta caves are carved in basalt rock.

30. Which of the options is/are simple rotations of the given figure?



31. Which of these paintings is/are by Paul Klee?



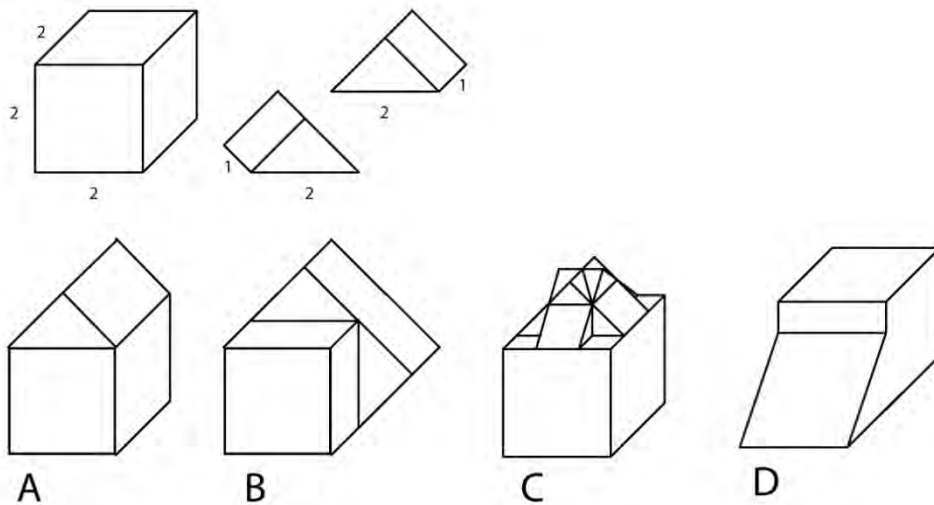
32. Which of the following terms relate(s) to printmaking?

- A. Serigraphy
- B. Lithography
- C. Cartography
- D. Etching

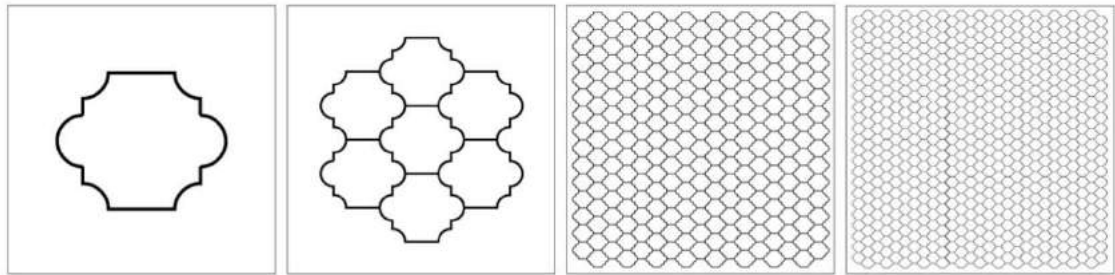
33. Which of the following statements is/are TRUE?

- A. Kuntaka was a Kashmiri Sanskrit poetician and literary theorist who is known for his work Vakroktijivitam in which he postulates the Vakrokti Siddhanta.
- B. Abhinavagupta was a Kashmiri aesthetician well known for his commentary on the Natya Shastra and for introducing the Shanta Rasa.
- C. Mammata Bhatta was the author of Dhvanyaloka, and is credited with creating "Dhvani Theory".
- D. Anandavardhana was a Sanskrit rhetorician from Kashmir, and is credited with writing the Kavya Prakasa a work on poetry and rhetoric.

34. Shown below are three objects in 3D --- one cube and two right-angled prisms. Assume that they can be merged into each other to form one 3D object. From the options given below, choose the possible object(s) that can be formed by this merging.



35. Shown below are steps in creating a pattern. From the options given below, identify the element(s) that can be repeated in order to create this pattern.



36. Which of these paintings is/are by Anjali Ila Menon?



37. A person has six daughters, P, Q, R, S, T and U, who live in four metros. They are a Pilot, Accountant, Diplomat, Banker, Commando, and Teacher.

Three daughters are married.

S, who lives in Mumbai, is a Diplomat.

Those staying in Kolkata are the Commando and the Accountant.

One of the two Mumbaiites is married, while two of the unmarried ones live in Kolkata and Delhi respectively.

The Teacher lives in Chennai.

T, the Accountant, is married.

U lives in Mumbai and P, in Delhi.

Q is a Commando, and Commandos do not marry.

Which of the following assertions is/are TRUE?

- A. If the Banker is unmarried, then the pilot is P.
- B. R is the teacher, and lives in Chennai.

- C. Q is unmarried.
- D. If the Diplomat is married, then so is the Banker.

38. Select the statement(s) about the Indus Valley Civilization that is/are TRUE?

- A. At its peak, the Indus Valley Civilization encompassed nearly 200,000 Square Miles.
- B. Stone seals from the Indus Valley Civilization have been found as far afield as Greece and Macedonia.
- C. The largest of the Indus Valley cities, such as Harappa and Mohen-jo-Daro, had populations of a 100,000 people and more.
- D. Despite the existence of highly ordered cities in the Indus Valley, there is no evidence of kings or pharaohs or any leader at all.

39. Read the following paragraph and answer the question related to it.

The Green Revolution has arguably been the most striking technological triumph of the 20th century in the realm of food production and land yields. Yet, there are serious concerns about its ill-effects on the environment. Which of the following concerns is/are TRUE?

- A. The disruption of the Nitrogen cycle by the massive use of chemical fertilizers is unsustainable for the environment.
- B. The Green Revolution has unequivocally been the most striking technological triumph of the 20th century in the realm of food production.
- C. Large monocultures of crops brought about by the Green Revolution are susceptible to sudden destruction by pests and disease.
- D. Increasing the supply of food through the Green Revolution would encourage the appearance of more and more new individuals, leading to worldwide famine as the human population becomes limitless.

40. Read the following paragraph and answer the question related to it.

There are many subtleties to designing with audio in order to create useful, non-intrusive experiences that offer instruction, information, and feedback when users interact with everyday devices, such as mobile phones, cars, toys etc. If audio might play a part in your design, what are some considerations, with specific regard to cognitive loads on users and aesthetics of interaction that you must keep in mind? Pick all that apply.

- A. Audio is linear, time-sensitive, and transient, therefore good design must limit the number of audio menu options.
- B. Users will often listen to all choices before picking one, and a long list limits their ability to remember them all. So it is necessary to keep choices pertinent and parsimonious.
- C. Using jargon in instruction enhances user experience, since it enables users to create shortcuts more easily, and to utilize the offered functionality of a device in wider and deeper ways.

- D. It is good to differentiate between a novice user and an expert user by keeping track of the number of interactions that the user has with the device, and tailoring an audio experience for first-time users, while playing shortened prompts to expert users.

41. Read the following paragraph and answer the question related to it.

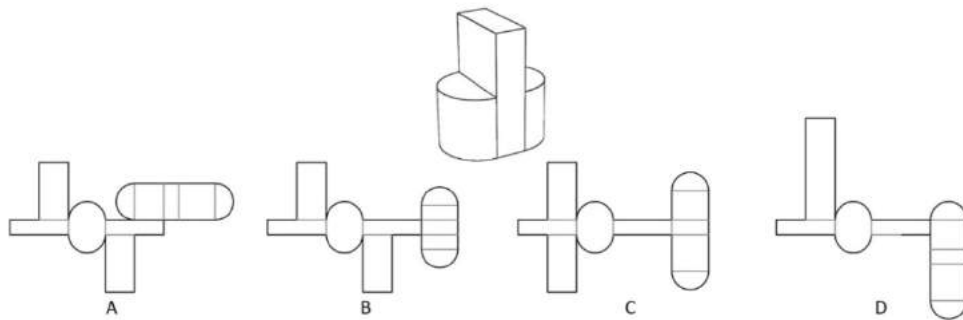
Anaximander, in the sixth century BCE, had a theory of evolution, and maintained that men are descended from fishes. This was philosophy because it was a speculation unsupported by detailed evidence, but Darwin's theory of evolution was science, because it was based on the succession of forms of life as found in fossils, and upon the distribution of animals and plants in many parts of the world. A man might say, with enough truth to justify a joke: 'Science is what we know and philosophy is what we don't know.' But it should be added that philosophical speculation as to what we do not yet know has shown itself a valuable preliminary to exact scientific knowledge. The guesses of the Pythagoreans in astronomy, of Anaximander and Empedocles in biological evolution, and of Democritus as to the atomic constitution of matter, provided the men of science in later times with hypotheses which, but for the philosophers, might never have entered their heads. We may say that, on its theoretical side, philosophy consists, at least in part, in the framing of large general hypotheses which science is not yet in a position to test; but when it becomes possible to test the hypotheses they become, if verified, a part of science, and cease to count as 'philosophy'.

Which of the following statements is/are TRUE of the paragraph above?

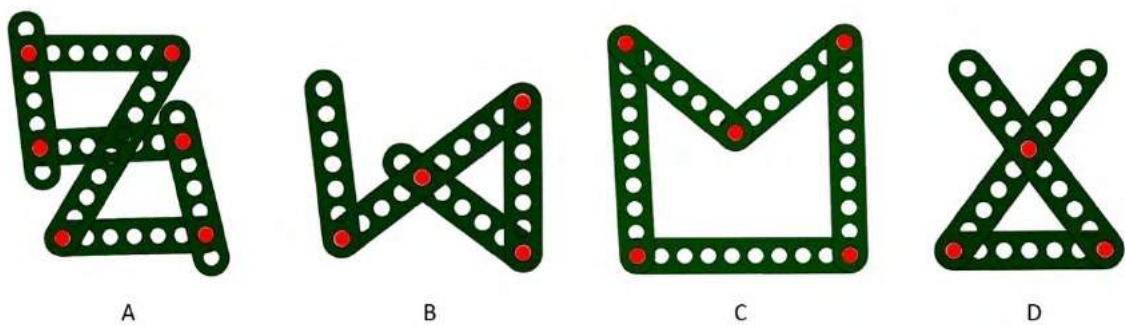
- A. Even though Anaximander had a theory of evolution in the sixth century BCE that seems untenable to our modern minds, the author explains how philosophical speculation is rigorous enough to have spawned scientific hypotheses that have often proved entirely plausible and empirically provable in later times.
- B. Anaximander's philosophical speculation on the theory of evolution, as far back as the sixth century BCE, is implausible given the evidence that supports Darwin's theory of evolution, and the tone of the passage seems to suggest that the author finds such idle conjecture as being---at best---immaterial to the trajectories of actual science.
- C. Even though Anaximander had a theory of evolution in the sixth century BCE that seems untenable to our modern minds, the author explains that philosophy is often the source of the large frameworks that inform and inspire scientific imagination.
- D. Between the speculations of Pythagoreans in astronomy, Anaximander and Empedocles in biological evolution, and Democritus on the atomic constitution of matter, the author bemoans the loss of later advances in scientific understanding---though based on these conjectures---from being considered as also belonging to philosophy.



42. Identify which of the options given below can be folded to make the 3D object in the picture shown below.



43. Shown below are four structures made with rigid elements. They are joined to each other at red points by screws that allow elements to move. Identify the structure/s that is/are NOT rigid.



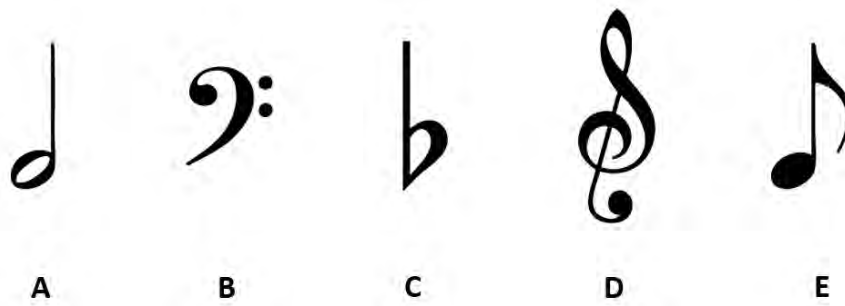
44. Which of the statements is/are TRUE with respect to the picture shown below?



A, B - structural members of stool, C - Fishing wire, D - Umbrella fabric, E - Socks

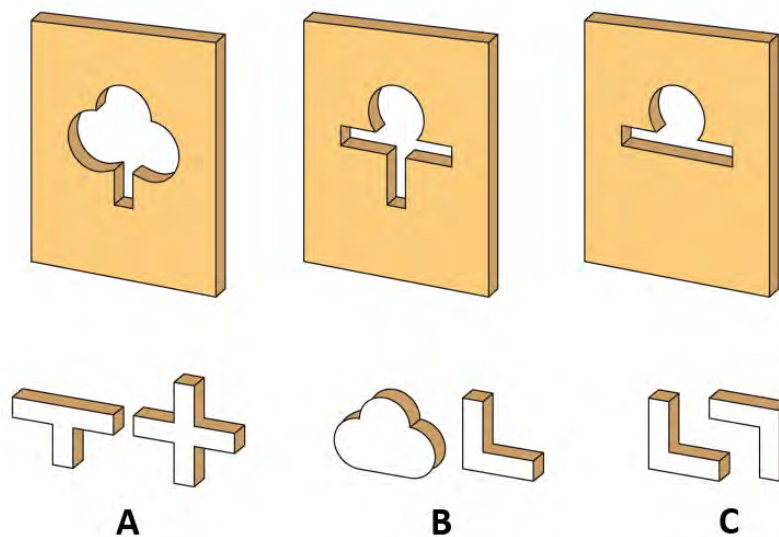
- A. A and B need to be strong in tension, and C and E in compression.
- B. C needs to be strong in tension, and A and D in compression.
- C. C and D need to be strong in tension.
- D. B needs to be strong in compression, and all others need to be strong in tension.

45. Which of the statements is/are TRUE about the FIVE symbols given below?



- A. All are musical notes.
- B. Two are not musical notes.
- C. Only one is not a musical note.
- D. At least three are musical notes.

46. Shown below are three panels with cutouts in three shapes. From the given pairs of blocks, identify which pairs will PASS THROUGH all the cutouts.



- A. Only pair A
- B. Only pair C
- C. Only pairs A & C
- D. All pairs A, B and C

47. Which of the materials given below was/were used for writing on in ancient India?

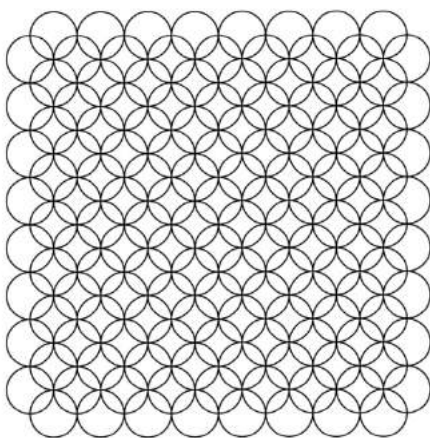
- A. Coconut Leaves
- B. Palm Leaves
- C. Bamboo Leaves
- D. Birch Bark

48. Shown are logos of different Companies/Organisations. Select the option(s) that identifies (identify) the designers of the logos.

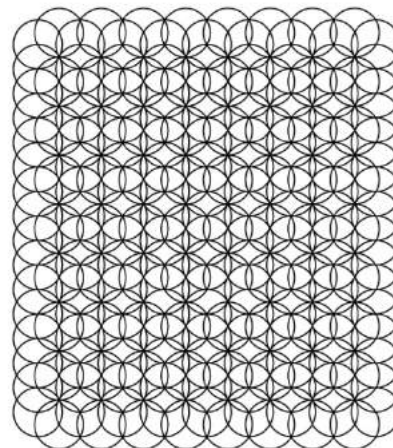


- A. Sudarshan Dheer, Ray and Kesavan
- B. R K Joshi, Benoy Sarkar,
- C. Yeshwant Chaudhary, Vikas Satwalekar
- D. Sudarshan Dheer, R K Joshi

49. Below are two patterns created by a repetition of circles. For each of the patterns, identify the configuration of circles from which it has been created, from the set of options given below and then answer the question that follows.



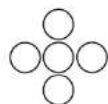
I



II



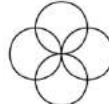
1



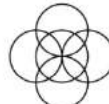
2



3



4



5



6

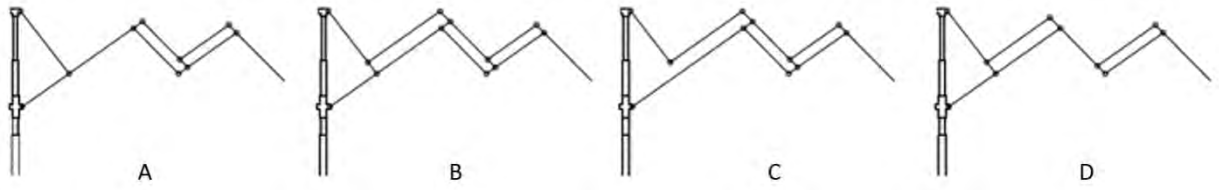


7

Which of the following statements is/are TRUE?

- A. I can be created from 3 and 4; and II can be created from 5 and 6
- B. I can be created from 1 and 2; and II can be created from 5, 6 and 7
- C. I can be created from 4; and II can be created from 6
- D. I can be created from 4 and 5; and II can be created from 6 and 7

50. Shown below are schematic diagrams of a single arm of a 3-fold umbrella. Identify the correct representation/s.



## Section C: Multiple Choice Questions

This section contains a total of 50 Multiple Choice Questions (MCQ). Each MCQ type question has four choices out of which only one is the correct answer. There is **NEGATIVE** marking for this section. Each correct answer will be awarded 3 marks and each wrong answer will be awarded -1 marks. Questions not attempted will be given zero marks.

51. If the following terms were to be written in the sequence: Subphylum, Class, Order, Family and Genus, which one would be correct?

- A. Mammalia Vertebrata Felidae Carnivora Panthera
- B. Vertebrata Mammalia Felidae Carnivora Panthera
- C. Mammalia Carnivora Vertebrata Felidae Panthera
- D. Vertebrata Mammalia Carnivora Felidae Panthera

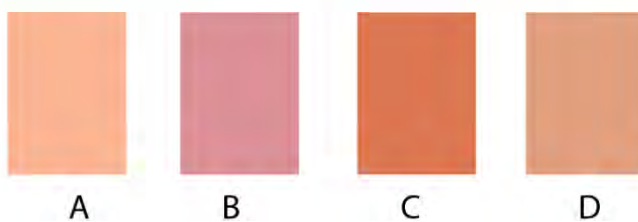
52.

If  becomes 

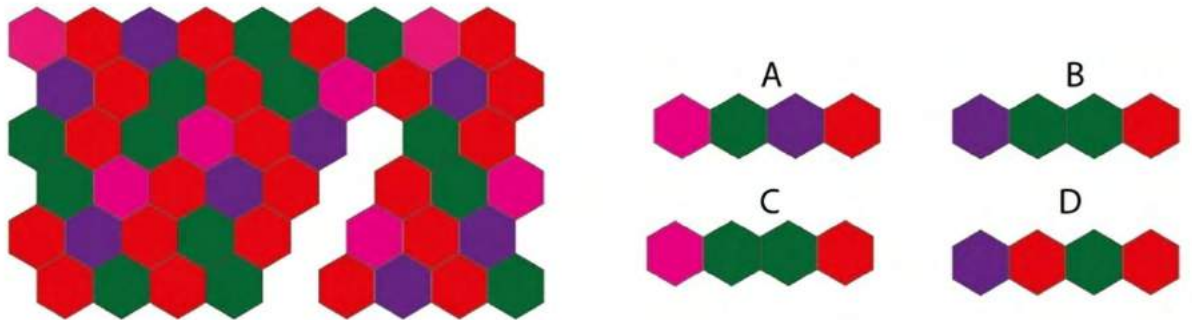
then  would become?



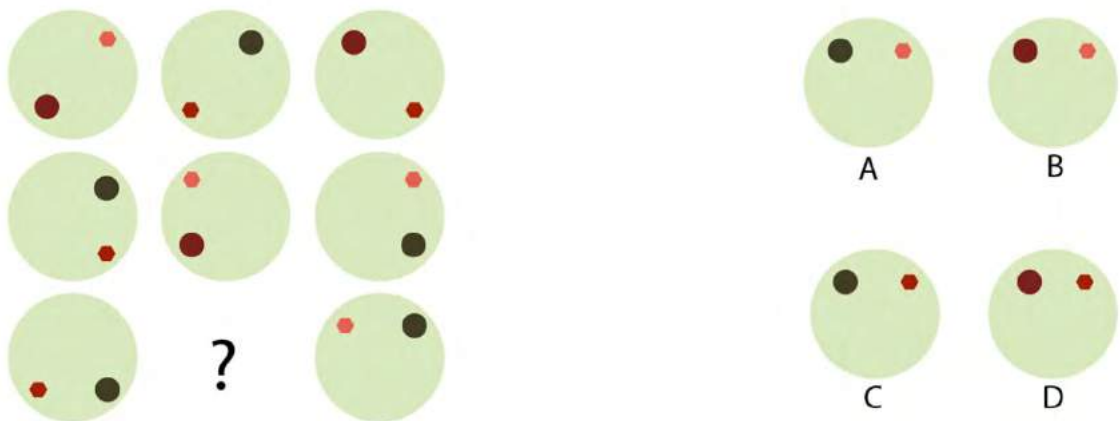
53. Choose the colour that should replace the question mark.



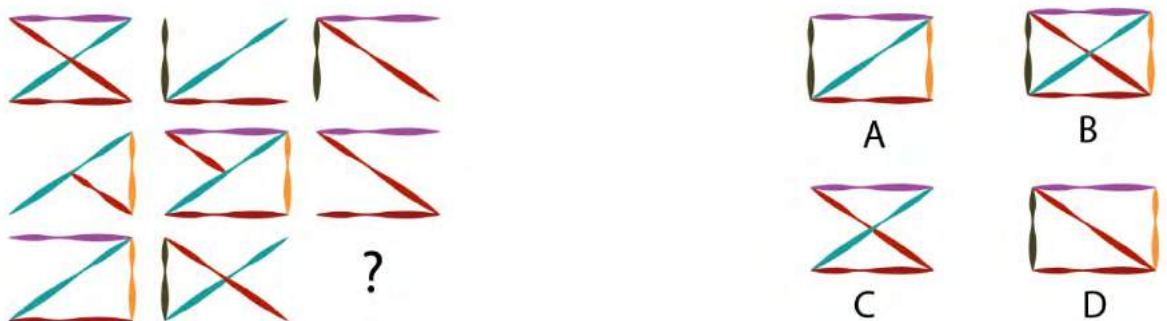
54. Pick an option from the right which will correctly complete the colour pattern on the left.



55. Choose the option that would replace the question mark to correctly complete the pattern.



56. Choose the figure that should replace the question mark.





57. Choose the set of colours which is present in this painting.



- A
- B
- C
- D

58. Look carefully at the sentence given below. It is written in a specific font. From the options, choose the letter which belongs to the same font family.

बहु भुकेला झालो

- A
- B
- C
- D

59. Which of the options would replace the missing block?

व	ठ	क	व	द	व	क	ठ	द	व	ठ
क	व	द	व	क	ठ	द	व	ठ	क	व
द	व	क	ठ	द	व	ठ	क	व	द	व
क	ठ	द	व	ठ	क	व	द	व	क	ठ
द	व	ठ	क	व	द	व	क	ठ	द	व
ठ	क	व	द	व	क	ठ	द	व	ठ	क
व	द	व	क	ठ	द	व	ठ	क	व	द
व	क			व	ठ	क	व	द	व	क
ठ	द			क	व	द	व	क	ठ	द
व	ठ	क	व	द	व	क	ठ	द	व	ठ
क	व	द	व	क	ठ	द	व	ठ	क	व

ठ	द
व	ठ

A

व	द
व	क

B

ठ	क
व	द

C

व	ठ
क	व

D

60. Find the odd one out among the letters below.



A



B

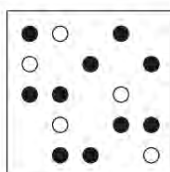
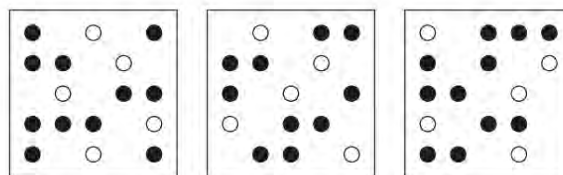


C

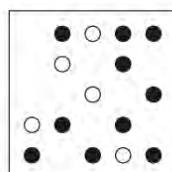


D

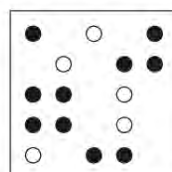
61. Given below are three matrices with dots, the dots are arranged using a particular logic. Identify the logic and choose the option that matches the logic of the matrices.



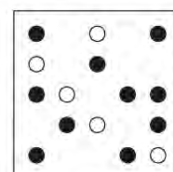
A



B



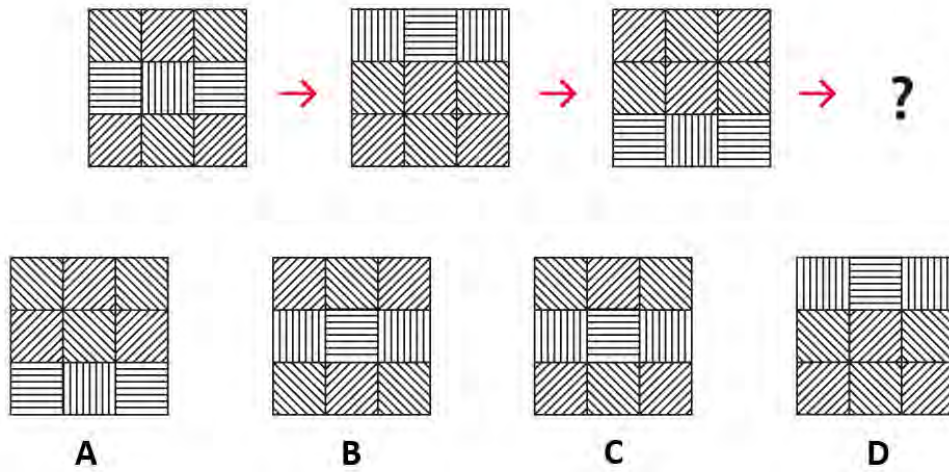
C



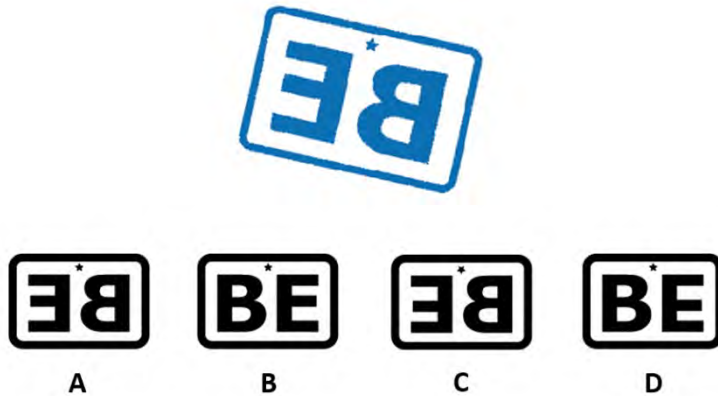
D



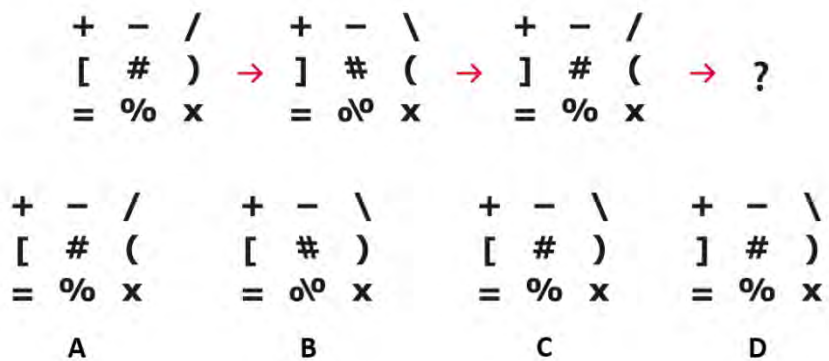
62. Choose the option that follows the logic of the hatch sequence shown below.



63. Identify the stamp used for printing the sample (in blue) from the options given below.



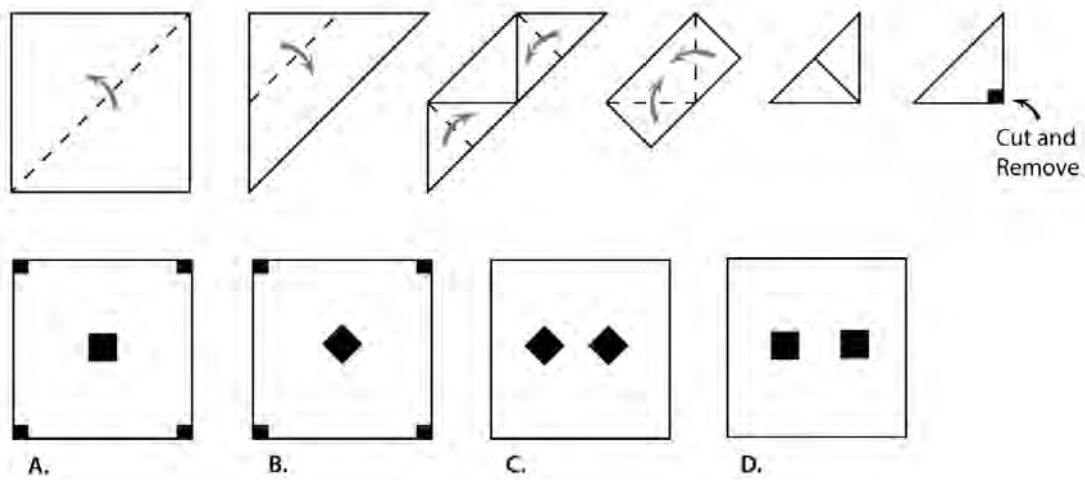
64. Choose the pattern that completes the sequence shown below.



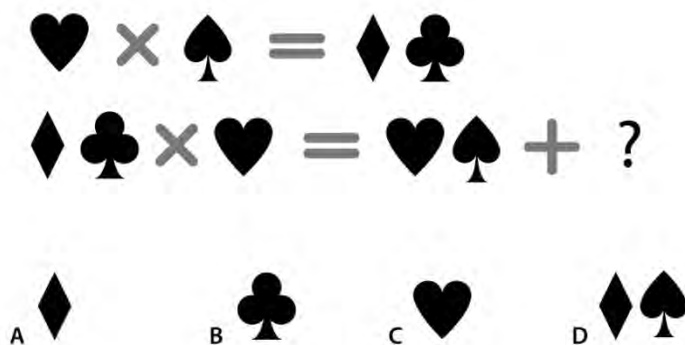
65. In pigment colors, if Green is Blue, Yellow is Green, Blue is White and Red is Yellow, what is the complementary color of White and Green?

- A. Orange
- B. Purple
- C. Red
- D. Green

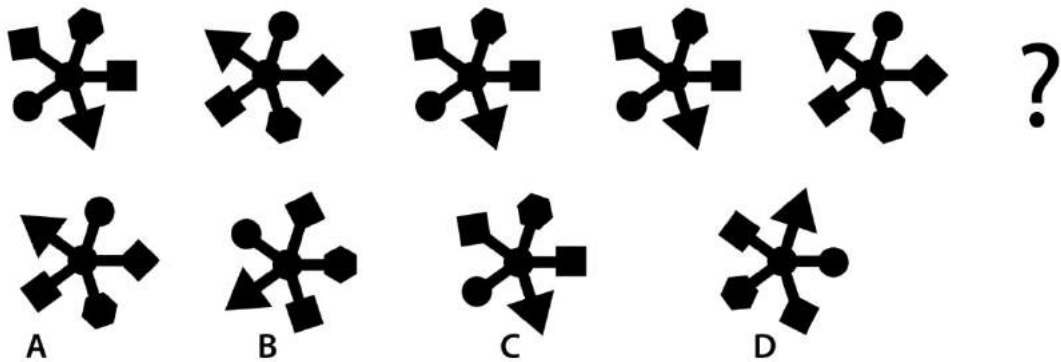
66. A square piece of paper is folded down into a triangle (as shown), after which a cut is made at a corner (again, as shown). Choose the option that shows the correct cut when the paper is unfolded.



67. The shapes below correspond to different numbers. Choose the option that replaces the question mark.



68. Choose the option that follows the logic of the sequence shown below.

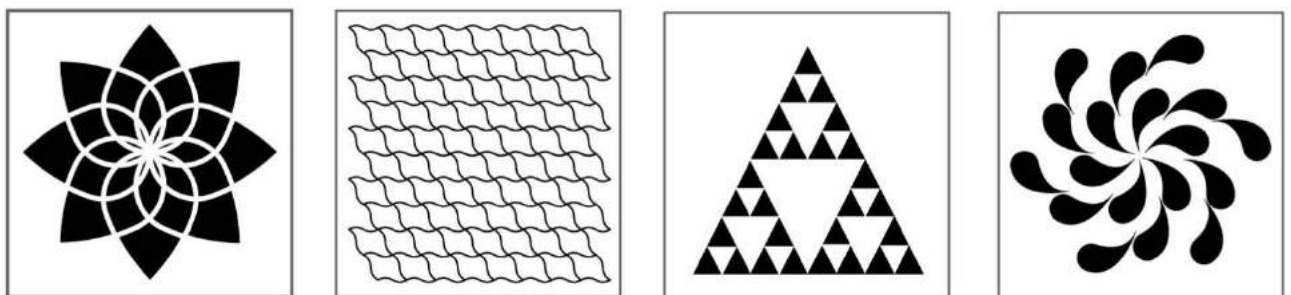


69. Shown are symbols used for different functions. Identify the correct description sequence from the given choices.



- A. Chemical weapon, Computing, Cosmology, Death
- B. Chemical Bonds, Computing, Aliens, War Zone
- C. Isotopes, Computing, Biohazard, Devil Spirits
- D. Chemical weapon, Radioactive, Biohazard, Toxic

70. Shown below are images that have different visual features. Identify the correct sequence of visual features associated with these images from the given choices.



- A. Translational Symmetry, Asymmetric Repetition, Fractal Image, Fibonacci Series
- B. Tessellation, Translational Repetition, Symmetric Repetition, Fractal Image
- C. Fibonacci Series, Tiled Fractals, Figure and Ground Image, Spiral Symmetry
- D. Radial Symmetry, Tessellation, Fractal Image, Rotational Repetition

71. Given below are steps in a typical design process, but they seem to be mixed up. What is the most logical sequence of these steps?

- I. Build a business out of the idea that is designed.
- II. Building prototypes to test ideas and get feedback.
- III. Analysis of the findings, looking for insights and find opportunities for design.
- IV. Finding a need and locating a problem to solve and trying to understanding the problem by conducting research.
- V. Product and technology development.
- VI. Ideation and coming out with initial concepts.

- A. I, IV, VI, V, III, II
- B. IV, VI, III, II, V, I
- C. IV, III, VI, II, V, I
- D. VI, IV, III, II, I, V

72. Given below is a write-up on the discovery of the Mouse. But the sentences seem to be mixed up. What is the correct logical sequence of these sentences?

- I. We use the mouse not just because Doug Engelbart invented it, but because it turned out to be the pointing device that performed best for pointing and clicking on a display, outperforming light pens, cursor keys, joysticks, trackballs, and everything else that was tried in early tests with users.
- II. Years later, when he was searching for a device to select objects on a computer screen, he remembered those notes, and together with Bill English, he built the first mouse.
- III. He was bored at a conference, and wrote in his notebook about putting two wheels at right angles to track movement on a plane.
- IV. The mouse won because it was the easiest to use.
- V. When he was a student, he was measuring the area under some complex-shaped curves, using a device with wheels that would roll in one direction and slide sideways in the axis at ninety degrees.
- VI. Doug Engelbart tells the story of how he invented the mouse.

- A. I, IV, VI, V, III, II
- B. VI, V, III, II, I, IV
- C. VI, I, IV, III, V, II
- D. IV, I, VI, V, III, II

73. Read the following statements related to the earth's environment

- I. Water vapour, and not carbon dioxide, is the most prevalent greenhouse gas in the earth's atmosphere.
- II. Besides China and the United States, India and Brazil are the highest greenhouse emitting countries.
- III. Although about 70% of the Earth is covered by water, and there's more beneath the surface, only about 5% of earth's water is fresh, liquid and found above ground.

- IV. Globally birth rates are fluctuating, people are living longer and the total population is increasing.

Which of the above statements are TRUE?

- A. I & II
- B. II & III
- C. III & IV
- D. I & IV

74. Read the following statements related to the economy

- I. Rebuilding efforts in the wake of natural disasters can give a boost to the economy.
- II. An increase in consumer spending is most likely to cause a decrease in employment.
- III. Carbon trading helps reduce carbon emissions mainly because low polluters buy excess permits to pollute and high polluters are fined by the carbon regulator.
- IV. Economic growth of a nation increases the demand for labour, thereby raising income levels.

Which of the above statements is/are TRUE?

- A. I & II
- B. II & III
- C. IV only
- D. None of the above options

75. Read the following design context:

The city of Mumbai is facing a severe shortage of parking spaces. The problem is acute in south Mumbai where land is expensive and undeveloped land almost non-existent. A panel of experts consisting of city and town planners, transportation engineers and designers, economists, historians and policy makers has studied the problem carefully and has recommended a set of measures:

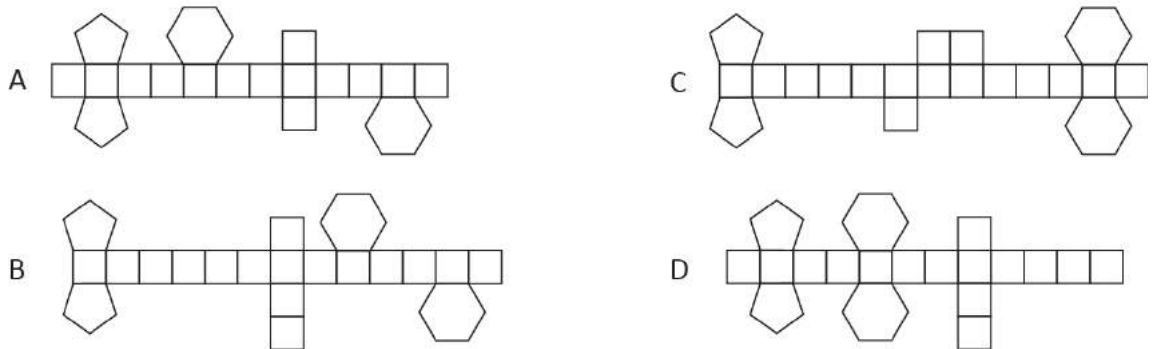
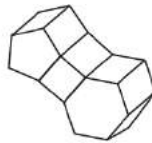
- I. Start a free public bicycle program in which people are encouraged to use public transport for longer distances and shared common bicycles for shorter distances.
- II. Allow people to download a mobile App which will allow vehicle owners to book parking spots up to one week in advance.
- III. Ban vehicles with even registration numbers on the even days of the month, and odd registration numbers on odd days of the month.
- IV. Make parking prohibitively expensive.
- V. Build more multi-storied and underground parking complexes.
- VI. Declare the whole of south Mumbai as a heritage district to prevent any further construction and limit vehicle entry by imposing toll.
- VII. Design self-parking vehicles.
- VIII. Create a car pooling mobile App that will connect people to share cars and reduce the number of cars on the road.
- IX. Make the roads more pedestrian-friendly.

- X. Institute a parking pricing mechanism which dynamically adjusts the cost of parking based on demand and supply.

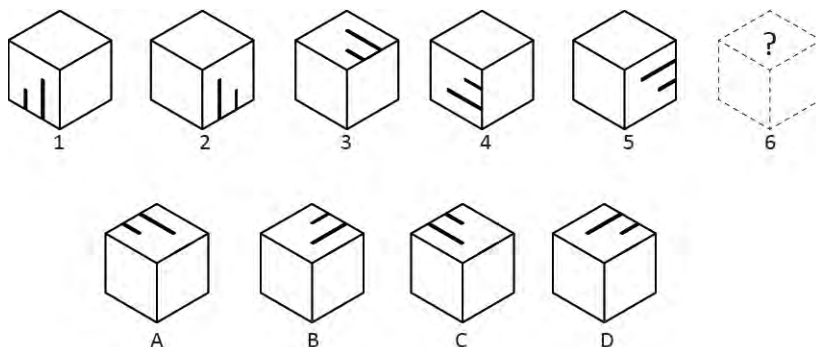
Identify FOUR recommendations that will make the most impact in solving the parking problem.

- A. I, IV, VII & X
- B. II, III, V & IX
- C. I, IV, VII & VIII
- D. I, III, V, X

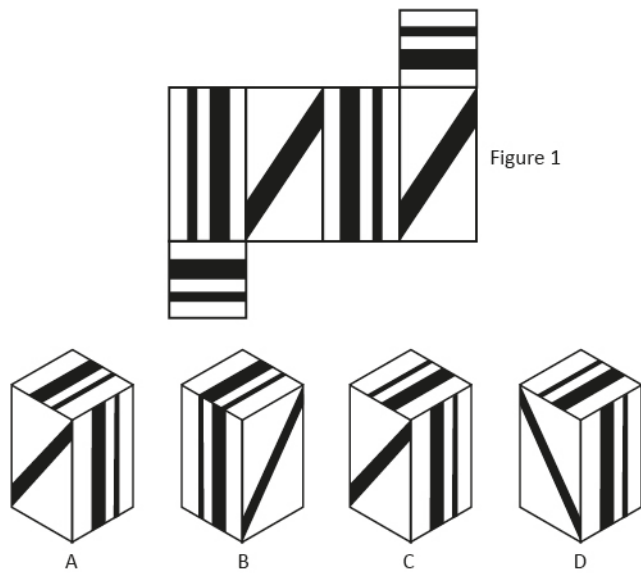
76. Identify which option given below can be folded to make the 3D object in the picture shown below.



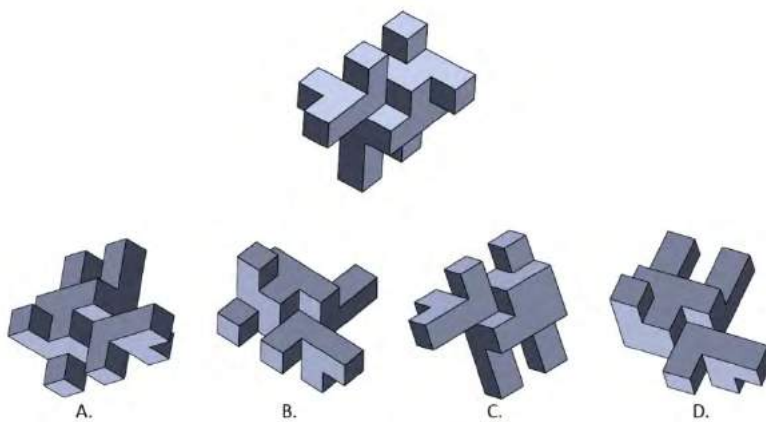
77. Figures 1 to 5 are views of a cube. From the options given below, choose the sixth view of the cube in the series.



78. Figure 1 shows an unfolded cuboid. Below it are four options showing four fully-folded cuboids. Identify the cuboid that can be unfolded as Figure 1.



79. The image below shows a 3D object. Only one of the options shows the same object from a different view. Identify it.



80. Read the three statements below and the conclusions deduced from these statements.

**Statements:**

All Surrealists are melted clocks.

Some melted clocks are Dalis.

All Dalis are macabre works.

**Conclusions:**

- (i) Some macabre works are Dalis.
- (ii) Some macabre works are melted clocks.
- (iii) Some Dalis are Surrealist.

Based on the above, which of the conclusions definitely follows from the statements?

- A. None follows.
- B. Only (i) follows.
- C. Only (i) and (ii) follow.
- D. Only (iii) follows.

81. Select the option that best explains how the two statements below are related.

The fiction novel, *Gone Girl*, by Gillian Flynn, was very popular.

It was on several bestseller lists in the US for over 34 weeks in 2012, and later made into a movie.

- A. The first sentence contradicts the second.
- B. The first sentence explains the meaning of the second.
- C. The second sentence explains why the book is popular.
- D. The second sentence provides evidence for the first.

82. The building shown in Picture 1 can look as it does in Picture 2 if photographed using:



Picture 1



Picture 2

- A. Tilt-Shift Lens
- B. Mirror Lens
- C. USM Lens
- D. Stereoscopic Lens



83. Three views of a block with seven different shapes printed on its surfaces are shown below. Find the same block from the options given.



View 1



View 2



View 3



A



B



C



D

84. The green arrow is pointing at a mark on a DSLR camera body. What does this mark represent?



- A. Infinity Focus
- B. Closed Aperture
- C. Focal Plane
- D. Firmware Reset

85. The image below shows a product designed by Raymond Loewy. Identify the product.



- A. Pencil sharpener
- B. Turbine engine

- C. Children's toy
- D. Automobile decal

86. These are modified images by famous artists. Identify the correct sequence of artists of the original images.



- A. Leonardo da Vinci, Vermeer, Van Gogh, Michaelangelo
- B. Michaelangelo, Vermeer, Van Gogh, Leonardo da Vinci
- C. Michaelangelo, Rembrandt, Van Gogh, Leonardo da Vinci
- D. Leonardo da Vinci, Rembrandt, Van Gogh, Michaelangelo

87. These images are made using different art techniques. Identify the correct sequence of techniques from options below.



- A. Oil Paint, Crayon, Watercolour, Pastel
- B. Ink, Acrylic, Oil Paint, Tempera
- C. Watercolour, Crayon, Acrylic, Oil Paint
- D. Tempera, Pastel, Oil Paint, Acrylic

88. Given below are steps to tie a shoelace, but the steps seem to be mixed up. What is the correct logical sequence of these steps?

1. Pass one end of the shoelace under the other.
2. Pull tight.
3. Hold one end of each shoelace in each hand.
4. Cross them, making an X.
5. Bend it into a flat loop and pull through, making a bow.
6. Fold one shoelace in half while holding laces taut.
7. Grasp it in the middle after pulling it around the folded end.
8. Wrap the other end around the folded end.

The Correct Order is:

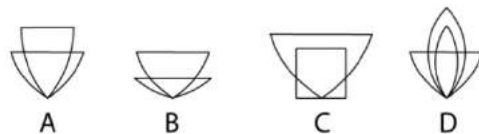
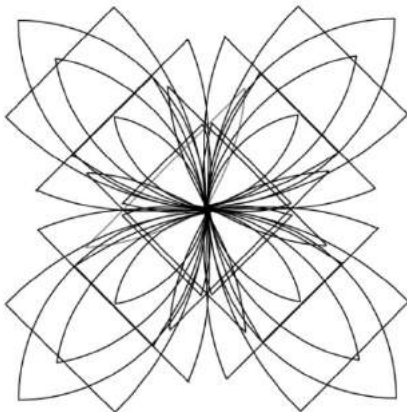
- A. 6, 2, 3, 7, 3, 5, 8
- B. 3, 4, 1, 2, 6, 8, 7, 5
- C. 6, 4, 3, 1, 8, 5, 7, 2
- D. 5, 6, 4, 2, 7, 8, 3, 1

89. Given below is a list of sixteen idioms which originated from sports. Each option contains four sports. Identify the option that has all its four sports represented in at least one of the idioms in the list.

- i. Back to square one
- ii. Ball in his court
- iii. Below par
- iv. Breaking one's duck
- v. Down to the wire
- vi. Full court press
- vii. Going the distance
- viii. Jump the gun
- ix. Level playing field
- x. On the back foot
- xi. Play it close to one's chest
- xii. Pole position
- xiii. Saved by the bell
- xiv. Stalemate
- xv. Throw in the towel
- xvi. Touché

- A. Boxing, Baseball, Chess, Cricket
- B. Basketball, Soccer, Horse Racing, Weight Lifting
- C. Fencing, Poker, Pole Vault, Tennis
- D. Athletics, Golf, Motor Racing, Snakes and Ladder

90. Shown below is an image made from line segments. Identify the element, from the options at right, which is NOT part of the image.



91. Read the following paragraph and answer the question that follows.

A language reveals the attitudes of the people who use and shape it. And a whole declension of \_\_\_\_\_(i)\_\_\_\_\_ terminology can be found in the language in which inter-racial relations have been described inside Britain. At first, we were told, the goal was 'integration'. Now this word rapidly came to mean ' \_\_\_\_\_(ii)\_\_\_\_\_ ': a black man could only become integrated when he started behaving like a white one. After 'integration' came the \_\_\_\_\_(iii)\_\_\_\_\_ of 'racial harmony'. Now once again, this sounded virtuous and desirable, but what it meant in practice was that blacks should be persuaded to live peaceably with whites, in spite of all the injustices done to them every day. The call for 'racial harmony' was simply an invitation to shut up and smile while nothing was done about our grievances. And now there's a new catchword: 'multiculturalism'. In our schools, this means little more than teaching the kids a few bongo rhythms, how to tie a sari and so forth. In the police training programme, it means telling cadets that black people are so 'culturally different' that they can't help making trouble. Multiculturalism is the latest token gesture towards Britain's blacks; and it ought to be exposed, like 'integration' and 'racial harmony', for the \_\_\_\_\_(iv)\_\_\_\_\_ it is.

In the above passage identify the missing words. The table below contains possible words for each blank. Choose one word from each column for the 4 blanks.

(i) astounding worrisome patronizing critical	(ii) organization consolidation assimilation association	(iii) time place opportunity concept	(iv) sham joy truth law
---	--	--	-------------------------------------

The correct answer is:

- A) astounding, consolidation, time, law
- B) patronizing, assimilation, concept, sham
- C) critical, association, opportunity, truth
- D) worrisome, organization, place, joy

92. Read the following paragraph and answer the question that follows.

The most \_\_\_\_\_(i)\_\_\_\_\_ respect in which ideas have helped mankind is numbers. There must have been a time when homo sapiens was a very rare species, subsisting precariously in jungles and caves, terrified of wild beasts, having difficulty in securing nourishment. At this period the biological advantage of his greater intelligence, which was cumulative because it could be handed on from generation to generation, had scarcely begun to outweigh the disadvantages of his long infancy, his lessened \_\_\_\_\_(ii)\_\_\_\_\_ as compared with monkeys, and his lack of \_\_\_\_\_(iii)\_\_\_\_\_ protection against cold. In those days, the number of men must certainly have been very small. The main use to which, throughout the ages, men have put their technical skill has been \_\_\_\_\_(iv)\_\_\_\_\_ the total population. I do not mean that this was the intention, but that it was, in fact, the effect. If this is something to rejoice in, then we have occasion to rejoice.

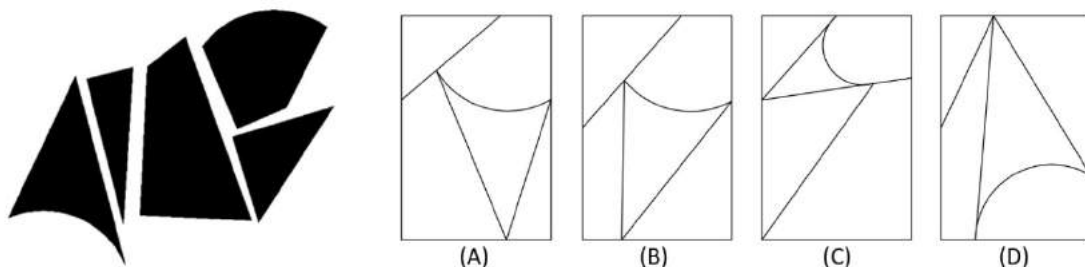
In the above passage identify the missing words. The table below contains possible words for each blank. Choose one word from each column for the 4 blanks.

(i) equivocal inconclusive indubitable uncertain	(ii) freedom agility confidence appetite	(iii) hirsute stubbled feathery unshaven	(iv) increase decrease endanger extol
--	--	--	---

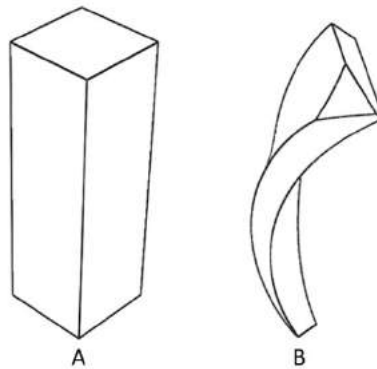
The correct answer is

- A. uncertain, freedom, stubbled, extol
- B. equivocal, confidence, unshaven, endanger
- C. inconclusive, appetite, hirsute, decrease
- D. indubitable, agility, hirsute, increase

93. On the left hand side are pieces of a jigsaw puzzle. Identify the image that can be reproduced using all the pieces shown at left.

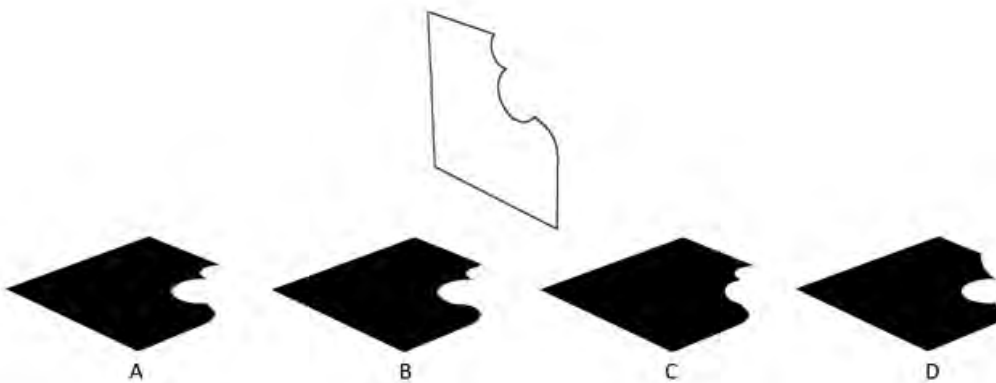


94. Choose the set of operations (not necessarily in order) that can be applied on form A to get form B?



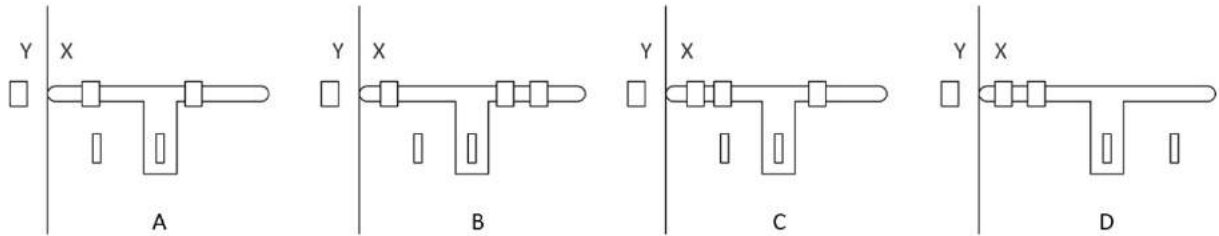
- A. Cut vertically, Taper, Cut at an angle, Bend, Twist
- B. Cut horizontally, Bend, Cut at an angle, Taper, Twist
- C. Cut vertically, Stretch, Twist, Bend, Cut at an angle
- D. Cut vertically, Twist, Stretch, Cut at an angle, Fold

95. Identify the most accurate shadow of the object given below. The arrow indicates direction of light.

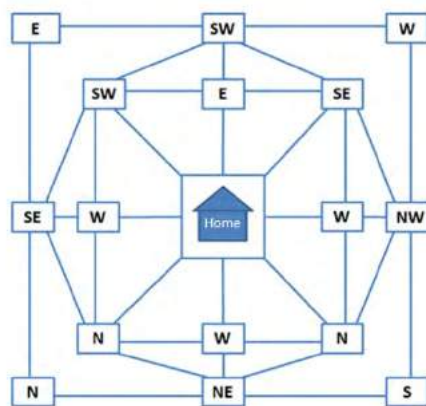




98. Shown below are schematic diagrams of a regular door latch. X represents the door, and Y represents the frame in the wall. Identify which latch can be used for correctly locking the door.



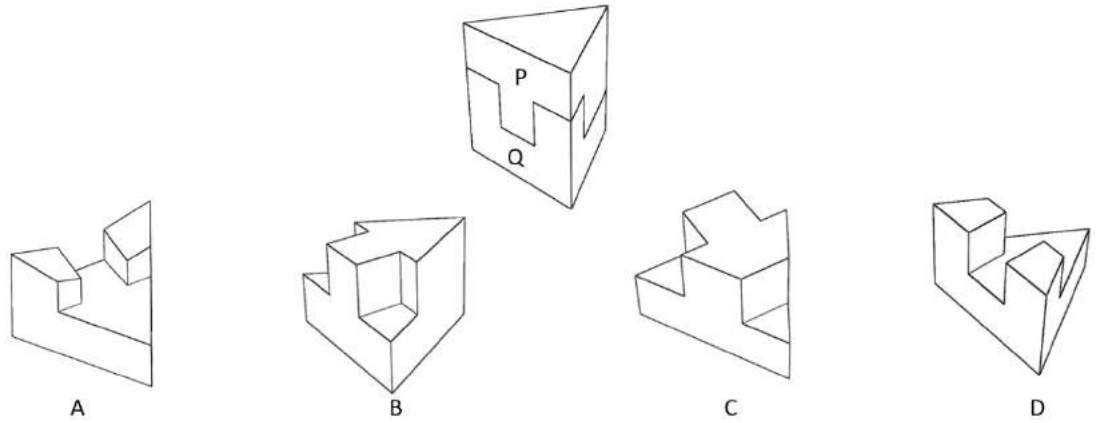
99. Pick a point on the outermost ring of the maze shown below, in order to find your way home. Each point indicates the direction of your next move. Which point on the outermost ring should be your starting point in order to reach home in the fewest steps?



- A. W
- B. N
- C. NE
- D. NW



100. Shown below is a triangular prism cut into two parts, P and Q. Identify which option represents part P.



**END OF THE QUESTION PAPER**