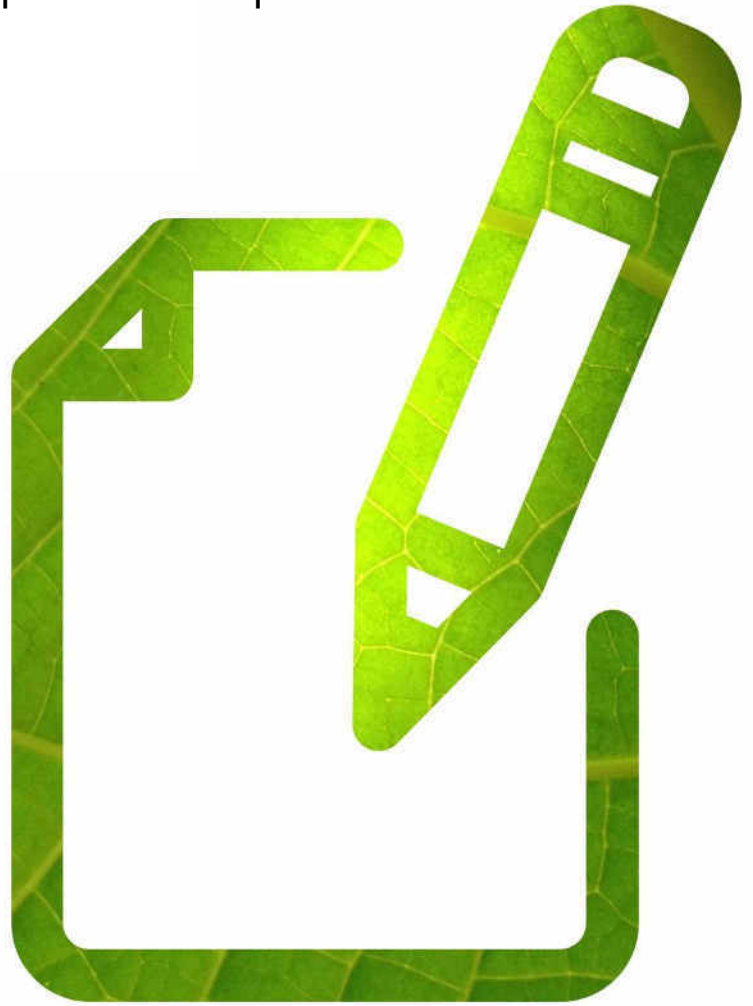




ASSET SAMPLE QUESTIONS

ENGLISH | SCIENCE | MATHS



ENGLISH

1. Every winter, migratory birds come to Orissa's Chilika lake. These birds come to specific areas of the lake where abundant food is available and there is minimal human disturbance.

Identify the area where you might be likely to find these birds.

- A. Dense human population B. Deep opening into the sea
C. Marshy Grassland D. The sea bed

2. 'I decided to take the plunge and learn to dance. I thought, if I do not try it I would not know anything about it.'

Choose the appropriate saying that would BEST describe this situation.

- A. As you sow, so shall you reap B. If you fail once, try, try, try again.
C. Luck favours the brave. D. Nothing ventured, nothing gained.

3. A synopsis of a movie reads: A screen-writer turns to his less talented twin brother for help when his efforts to write a book based on another non-fiction book go nowhere.

On the basis of the underlined part, what could the name of the movie be?

- A Piracy B Copyright C Authenticity D Adaptation

4. Choose the correct statement.

- A. number of cars in the city has several scratches on them.
B. Neither the teacher nor the students knows the program.
C. Either the colour or the design of the poster have to be changed.
D. Black dog, along with its pups, is well looked after by the owners.

5. My thoughts were interrupted when our procession came to a halt at the old water hole. Peering down into the murky water, I sensed that something terrifying lay beneath the surface. It was the colour of midnight and foam floated along its edges. Insects buzzed about, drawn perhaps by the stench of faeces.

How did the writer feel when she reached the old water hole?

- A. Baffled B. repulsed C. detached D. embarrassed

6. *When you're going to set off fireworks this year, please read the guidelines before going.*

The given sentence is **INCORRECT**. Which of these options rewrites it correctly?

- A. Before going to set off fireworks this year, please read the guidelines.
- B. Please read the guidelines before going, as you set off fireworks this year.
- C. This year when you are setting off fireworks, read the guidelines before going.
- D. When you go to set off fireworks this year, please read the guidelines before going.

7. **The coach reminded the players that they stand or fall together; they cannot rely on just the skills of a few players to win because -----.**
Which of these proverbs can best complete the sentence above?

- A. Birds of a feather flock together.
- B. Discretion is the greater part of valour.
- C. A chain is only as strong as its weakest link.
- D. You can't make an omelette without breaking a few eggs.

8. *The prosecution's case was on the rocks, their star witness had refused to speak up in court.*

Choose the option that BEST represents the sentence above.

- A. The prosecution's case was on solid ground, their star witness had refused to speak up in court.
 - B. The prosecution's case was successful, their star witness had refused to speak up in court.
 - C. The prosecution's case was defeated, their star witness had refused to speak up in court.
 - D. The prosecution's case was in trouble, their star witness had refused to speak up in court.
9. My parents will be home soon if their train isn't delayed and if they manage to catch a taxi immediately. Which of these convey exactly the same meaning as the given sentence?

- A. My parents will be home soon unless their train is delayed and they have to wait a long for a taxi.
- B. My parents will be home soon unless their train is on time and they don't have to wait long for a taxi.
- C. My parents will be home soon unless their train is on time and they manage to catch a taxi immediately.
- D. My parents will be home soon unless their train is delayed and they manage to catch a taxi immediately.

10. Both Vijay and Satish prefer reading detective fiction to classics. Which of these rephrases the above sentence without any change in meaning?

- A. Either Vijay or Satish prefers reading classics to detective fiction.
- B. Neither Vijay nor Satish prefers reading classics to detective fiction.
- C. Vijay, as well as, Satish prefer reading both detective fiction and classics.
- D. Not only Vijay but Satish too prefers reading classics to detective fiction.

11. Which option can be associated with the words given below to form commonly used expressions?

sore, shoulder, sweat, compress, looks
--

- A. warm B. chill C. cold D. hot

Read the following passage and answer the questions that follow.

Dancing to Success

Thank goodness Mithali Raj was a lazy child. If she hadn't been, she would never have been a cricketer, and consequently never captained India to the World Cup final last year, nor brought them on tour to England this year! "I just loved to sleep," she says of her ten-year-old self. "My dad was in the air force, and military people really don't like

that attitude - lazing around in the house; so my parents took the chance to make me join the cricket group where my brother would play. I used to accompany him early in the morning to get into the habit of getting up." In fact Raj wasn't into sports at all; she was a dancer, having studied classical Indian dance in her native Hyderabad from the age of six. "Dance has always been my first love," she muses, "but I had to quit because I was making rapid

strides in cricket.

You can say that again.

She was selected to the national side at the age of 14 and has since become India's most successful captain. She led them to the World Cup final in 2005, the first Asian side to make it that far. And she held the world record for two years after, making 214 against England in the second and final Test at Taunton in 2002. It's hard enough playing cricket as a woman, with the inevitable sacrifices and time commitments it entails, but on top of that is the stigma. And indeed such has been the stigma of playing cricket that many Indian families have avoided letting their girls play. Raj's own mum would still prefer her to be a dancer, although she is supportive of her decision.

"She's always given me a choice and encouraged me to be the best in whatever I do." Her dad is just delighted; he always wanted her to be a cricketer. That's not the attitude of many fathers, although that is slowly changing; women's cricket is becoming more accepted and popular.

12. "You can say that again" This sentence from the passage implies that _____.

- A. the writer could not hear Mithali speak.
- B. Mithali wants to hear the writer again.
- C. the writer heartily agrees with Mithali.
- D. the writer does not believe Mithali.

13. The passage has been organised MAINLY to

- A. discuss the state of women's cricket in India.
- B. discuss the stigma of being a woman cricketer in India.
- C. profile the development of Mithali as a world class cricketer.
- D. point out the attitude of the military towards oversleeping.

14. If Mithali needs to choose an alternative career she would probably become_____.

- A. an umpire B. a dancer C. a journalist D. a fighter-pilot..

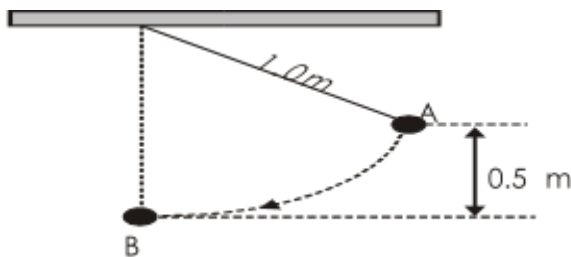
15. Which of the following statements is NOT TRUE, as per the passage?

- A. Mithali joined the Indian women's cricket team at a young age.
- B. Mithali loves to dance at least as much as she likes cricket.
- C. Under Mithali's captaincy, Indian women won the 2005 World Cup.
- D. Mithali's lethargy caused some annoyance to her parents.

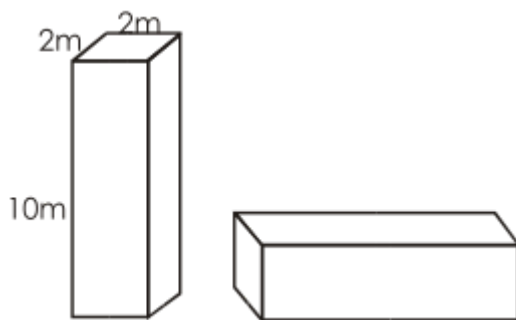
PHYSICS

1. 2 kg mass is suspended by a 1.0 m string and is set free at point A as shown in figure. Neglecting air resistance, what is the speed of the mass as it passes through point B?

($g = 10 \text{ m s}^{-2}$)



- A. 1.5 ms^{-1} B. 3 ms^{-1} C. 2 ms^{-1} D. 1 ms^{-1}
2. A block made from steel falls from position 1 to position 2 as shown. How much potential energy is lost during the process? ($g = 10 \text{ ms}^{-2}$, density of steel = 8000 kg m^{-3})



Position 1

Position 2

- A. 12.8 MJ B. 16.0 MJ C. 25.6 MJ D. 32.0 MJ
3. In a shoe, the laces pass through a set of holes in a regular criss-cross manner in order to easily tighten the shoe. Each hole helps change the direction of the lace thereby making it

easier to tighten the flaps. What simple machine does this mechanism use?

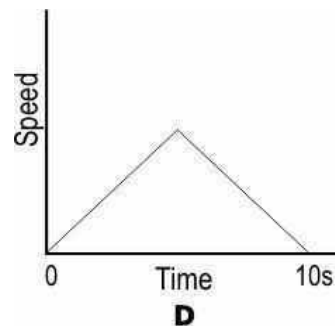
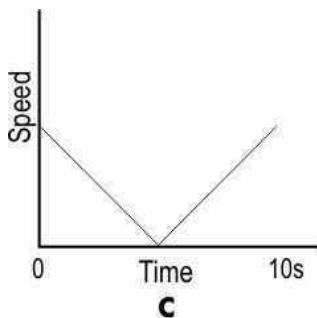
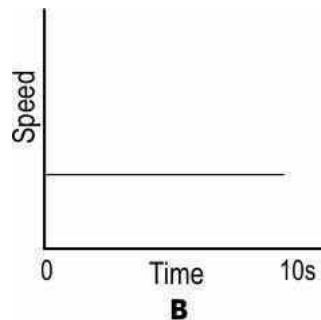
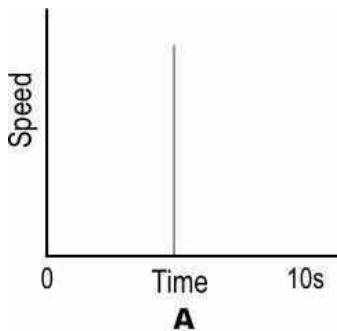


- A. Levers B. Fixed pulley C. Inclined planes D. Screws

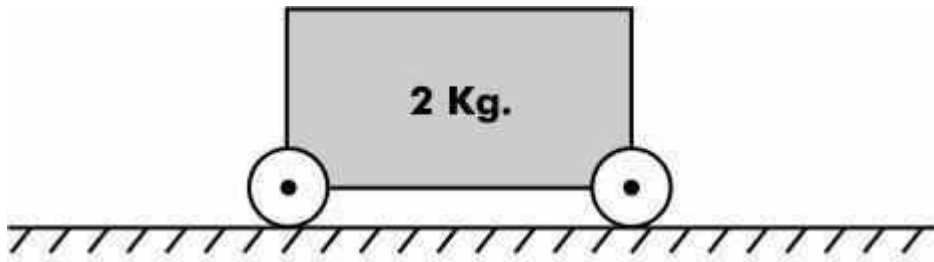
4. A force of 5N produces an acceleration of 8 m s^{-2} on a mass m_1 and an acceleration of 24 m s^{-2} on a mass m_2 . What acceleration would the same force provide if both the masses are tied together?

- A. 6 ms^{-2} B. 12 ms^{-2} C. 24 ms^{-2} D. 8 ms^{-2}

5. A ball is thrown vertically upwards and then caught again after 10 seconds. Which of these graphs shows how its speed changes during its motion?



6. In the diagram below, a 20 Newton force is used to push a 2 Kg toy cart distance of 5 meters. The work done on the cart is



- A. 40 J B. 120J C. 100J D. 80J

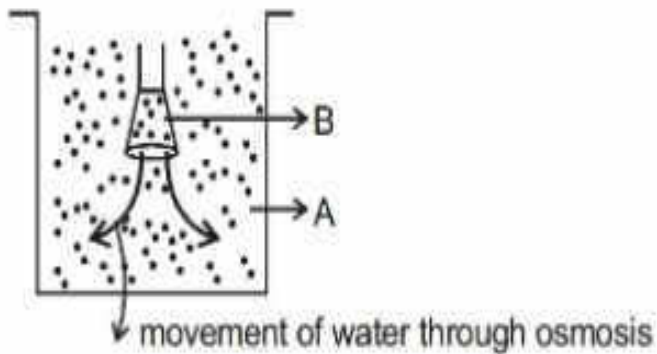
BIOLOGY

1. To which of the cells shown does the disease TETANUS belong?

	Bacteria	Virus
Vaccination available	A	B
Vaccination not available	C	D

- a. A b. B c. C d. D

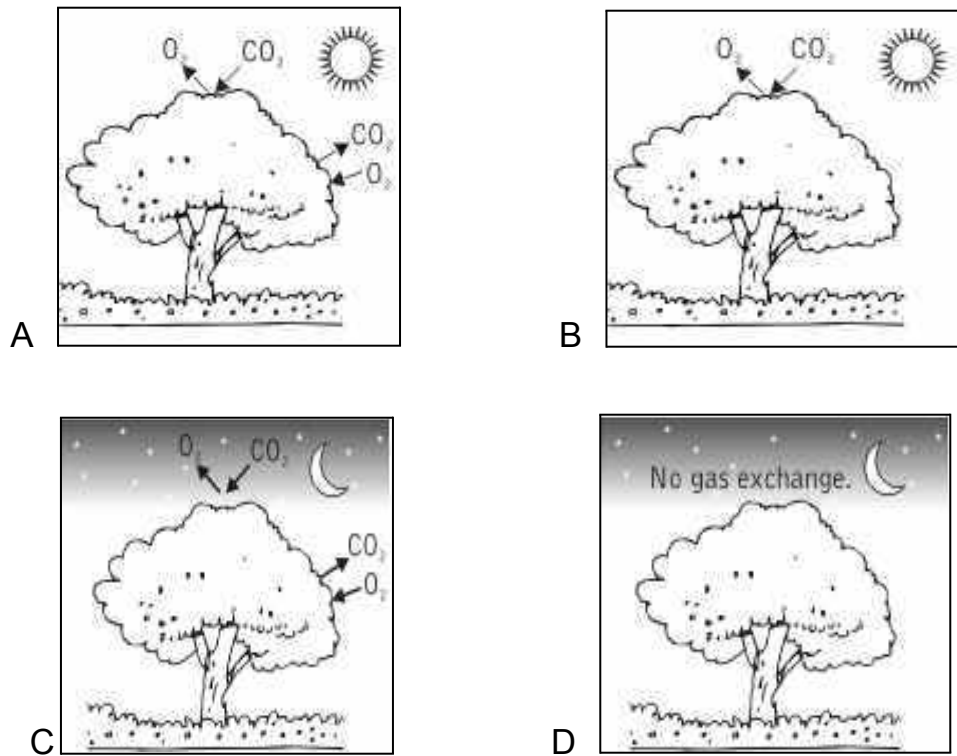
2.



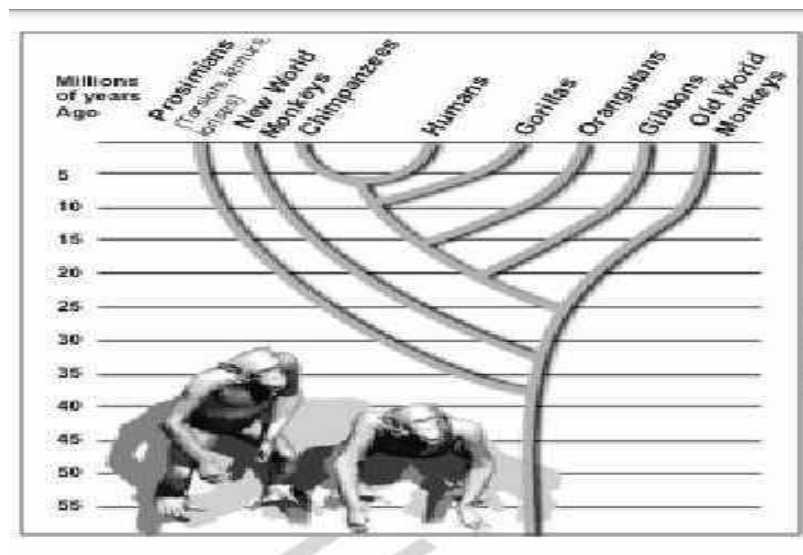
In the above diagram A is having

- (1) Hypotonic solution (2) Hypertonic solution
(3) Low Ψ_w (4) Both B and C correct

3. The processes of photosynthesis and respiration occur in plants. Which of the following pictures is a correct representation of gas exchange in the DAY OR NIGHT as indicated?



4. 'Evolutionary Trees' are diagrammatic representations of progression of life from lower to higher forms. The given picture shows evolution of primates with representative species of Lemurs, New and Old World Monkeys and the Great Apes, including humans.



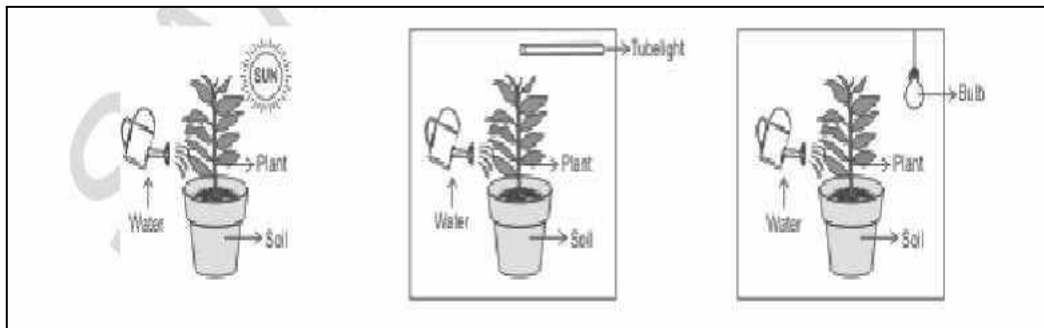
For example, the evolutionary tree shown above shows that chimps and humans shared

a common ancestor about 5-7 million years ago. This common ancestor in turn evolved from another ancestor shared with gorillas about 10 million years ago.

What can we say about the evolution of Old World Monkeys by studying the tree?

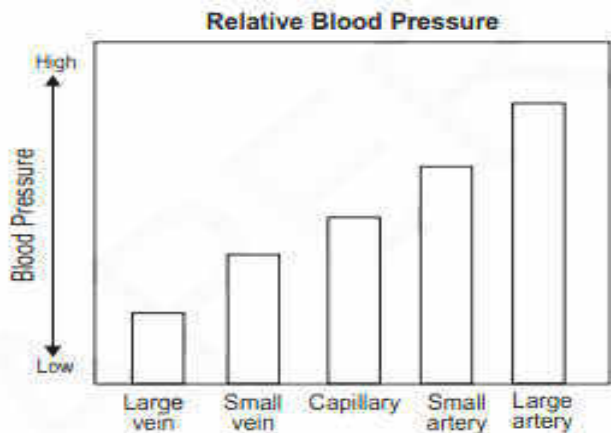
- A. It happened after the evolution of Gibbons
- B. It happened after the evolution of Chimpanzees
- C. It happened before the evolution of Humans
- D. It happened before the evolution of New world monkeys.

5. Sarathy wishes to investigate the effect of this type of light on a plant's growth. He takes three identical potted plants and places one in the lawn, one in a closed room containing a tubelight; and a third in a closed room containing a bulb which gives yellow light. The bulb and tube light are always on. He waters the plants regularly and to the same extent



Which of these could introduce error into the experiment results?

- A. The fact that the tube light and bulb are never switched off.
 - B. The fact that the light intensities are different in the three cases.
 - C. The fact that the three plants were watered similarly.
 - D. All of the above
6. The blood pressure in various arteries and veins in the body is not the same. The pressure is higher in arteries closer to the heart and lower in veins which are far away from the heart. This is shown in the graph here



Which of these statements is likely to be correct about these types of blood vessels?

- A. Blood will flow out fastest if a LARGE VEIN is accidentally cut.
- B. LARGE ARTERIES will have the thickest and most muscular walls.
- C. When the blood leaves the heart, it first enters CAPILLARIES.
- D. A SMALL ARTERY is likely to get divided into many LARGE ARTERIES.

CHEMISTRY

1. Based on the table below, what can you say about Co and Ni?

	Atomic number	Atomic mass
Co	27	59
Ni	28	59

- A** They have the same number of protons.

C They have the same number of electrons.

B They have the same number of neutrons.

D None of these is possible.

 - 2. Which of these is a MIXTURE? (Assume that all the substances being considered are PURE.)
- A** dry ice

B distilled water

C chalk powder

D soda water

3. Electrical resistance (resistance) is a measure of how well an object conducts electricity. The more the resistance, the poorer the electrical conductivity is. One of the ways to measure the resistance is to apply a voltage across the object and measure the current flowing through it. The resistance can then be calculated by using the formula

$$\text{Resistance} = \frac{(\text{Voltage applied})}{(\text{Current flow})}$$

The table below gives data for wires of different materials (the diameters and lengths of all the wires are the same).

Substance	Voltage applied	Current flow
aluminum wire	63 units	35 units
copper wire	27 units	25 units
silver wire	57 units	57 units
gold wire	42 units	30 units

Which material out of these is the poorest electrical conductor?

- A** aluminum **B** copper **C** silver **D** gold

4. What is the basis of classifying the two groups below?

Group P	Group Q
Iron	Copper
Cobalt	Zinc
Nickel	Silver

- A** P- insulators, Q - conductors
B P - magnetic, Q - non-magnetic
C P - non reactive, Q - reactive
D P - heavier than water, Q - lighter than water

5. The only way to stop a fire is to remove one or more requirements essential for fire. Some fires, like a wood fire, can be put out by water. In this case, which of the following does the water help remove/reduce, thereby putting out the fire?

1. the amount of oxygen available to the fire
2. the temperature of the fuel
3. the amount of fuel

- A** only 2 **B** only 3 **C** only 1 and 2 **D** all -1, 2 and 3

6. When can we be SURE that letters X, Y and Z represent the same element?

Letter representing an element	Number of protons + neutrons in an atom/ion of the element
X	16
Y	17
Z	18

- A** When the number of electrons are the same in each of X, Y and Z.
B When the number of neutrons are the same in each of X, Y and Z.
C When the number of protons are the same in each of X, Y and Z.
D X, Y and Z can never represent the same element.

MATHEMATICS

1.

Many candy companies make rectangular candy boxes of variable dimensions. Tables of different lengths and breadths of candy boxes by three companies are shown below.

Trot			
Length (inches)	2	4	6
Breadth (inches)	10	20	30
Lotto			
Length (inches)	24	18	12
Breadth (inches)	4	3	2
GN foods			
Length (inches)	2	5	8
Breadth (inches)	5	8	11

Which of these companies makes candy boxes that have length and breadth in direct proportion?

- A.** only Trot
B. only GN foods
C. only Trot and Lotto
D. all - Trot, Lotto, and GN foods

2. If Δ is a digit, which of these is the same as $4\Delta 21 \div 52$?

(i) $(4\Delta 21 \div 13) \times 4$

(ii) $(4\Delta 21 \times 2) \div 104$

(iii) $(4\Delta 21 \div 50) + (4\Delta 21 \div 2)$

A. only (i)

B. only (ii)

C. only (iii)

D. all - (i), (ii) and (iii)

3. Which of these is closest to 0.049 kg?

A. $\frac{1}{2}$ kg

B. $\frac{1}{20}$ kg

C. $\frac{1}{50}$ kg

D. $\frac{2}{50}$ kg

4. If $(x + a) = p$ and $(a - x) = t$, what is $(x^2 - a^2)$ in terms of p and t ?

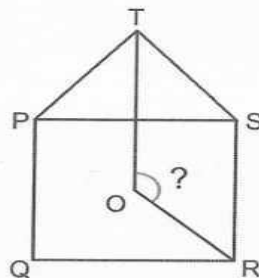
A. $p^2 - t^2$

B. $(p - t)^2$

C. $(-pt)$

D. pt

5. In the figure shown below, PQRS is a square and TPS is an equilateral triangle. The bisectors of $\angle PTS$ and $\angle QRS$ meet at point O.



What is the measure of $\angle TOR$?

A. 135°

B. 140°

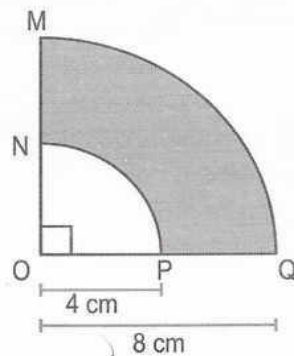
C. 145°

D. 150°

6. Which of these is less than 1?

$\left(\frac{1}{2}\right)^8$	$\frac{1}{2^{-2}}$	$\left(\frac{1}{2}\right)^{-5}$
(i)	(ii)	(iii)

- A. only (i)
 B. only (iii)
 C. only (ii) and (iii)
 D. all - (i), (ii) and (iii)
7. In the figure below, MOQ and NOP are the sectors of circles with centre O.



What is the area of the shaded part of the figure?

- A. $4\pi \text{ cm}^2$
 B. $12\pi \text{ cm}^2$
 C. $16\pi \text{ cm}^2$
 D. $48\pi \text{ cm}^2$

8. $\frac{0.9}{0.018} = x$

What is the value of $\frac{9}{18}$?

- A. x
 B. $100x$
 C. $\frac{x}{10}$
 D. $\frac{x}{100}$

9.

Look at the table below.

Number	Units digit of the Number
2^1	2
2^2	4
2^3	8
2^4	6
2^5	2

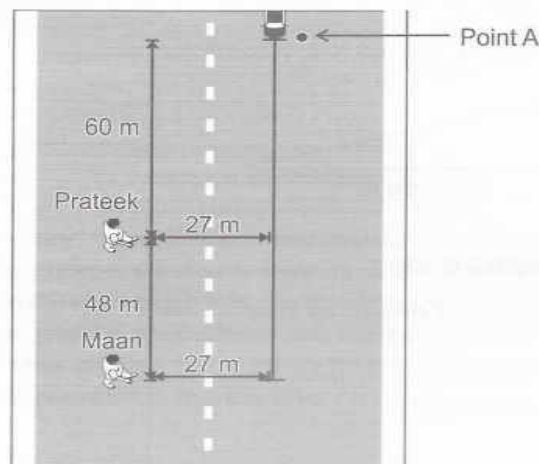
What is the units digit of 2^{24} ?

(Note: You do not need to do the actual calculation.)

- A. 2
- B. 4
- C. 6
- D. 8

10.

On a road, a car is approaching from point A at a speed of 12 m/s along the path shown. Prateek and Maan are crossing the road each at a speed of 3 m/s as shown in the figure. All of them are moving at a constant speed and in a straight line.

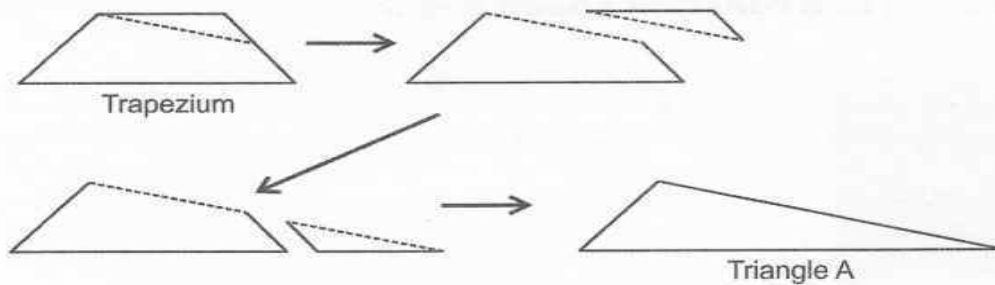


Which one of them will crash into the car?

- A. Maan will crash into the car at 9 seconds.
- B. Prateek will crash into the car at 5 seconds.
- C. Prateek will crash into the car at 9 seconds.
- D. None of them will crash into the car as the car is moving at higher speed.

11.

The given trapezium is cut into two pieces along the dotted line. The cut pieces are then arranged to get triangle A as shown in the figure.

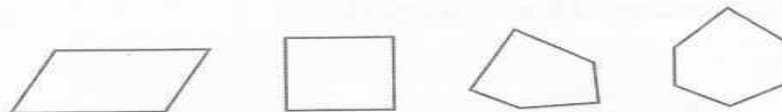
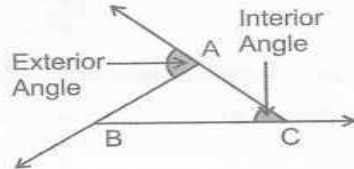


Which of the following options is **CORRECT**?

- A. Length of the longest side of trapezium $>$ Length of the longest side of the triangle A
- B. Perimeter of trapezium $<$ Perimeter of the triangle A
- C. Area of the trapezium $<$ Area of the triangle A
- D. (All of them are correct.)

12.

The sum of the measures of the interior angles of a triangle is 180° while the sum of the measures of the exterior angles of a triangle is 360° .



Which of the following statements is **CORRECT** for the different polygons shown in the figure?

- A. The sum the exterior angles increases with an increase in the number of sides of a polygon.
- B. The sum of the interior angles increases with an increase in the number of sides of a polygon.
- C. The sum of the interior angles of any polygon is always less than the sum of its exterior angles.
- D. The sum of the interior angles of any polygon is always greater than the sum of its exterior angles.

13. $(x + 4)^2 = s^2 + 2^2$ where $x > 0$.

Which of the following is DEFINITELY TRUE?

- A. $x + 4 = s + 2$
- B. $x + 4 > s + 2$
- C. $x^2 + 4^2 = s^2 + 2^2$
- D. $x^2 + 4^2 < s^2 + 2^2$

14. Rehan sells chocolate boxes. For each chocolate box, $\frac{1}{3}$ of the total cost price is the cost of the box and $\frac{2}{3}$ of the cost price goes into making chocolates for the box.

He sells each box for Rs. 390 and makes a profit of 30% per box. How much does he spend on making chocolates for each chocolate box?

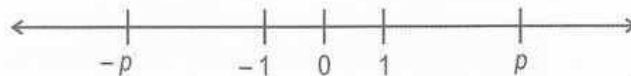
- A. Rs. 182
- B. Rs. 200
- C. Rs. 260
- D. Rs. 338

15. The expression $3^5 + 6^5$ is equal to _____

- A. 9^5
- B. 9^{10}
- C. $3^5 (1+2^1)$
- D. $3^5 (1+2^5)$

16. p and q are two rational numbers where $p > q$ and $p + q < p$.

Where could q possibly lie on the number line?



- A. anywhere between 0 and p
- B. anywhere between 0 and 1
- C. anywhere between $-p$ and p
- D. anywhere between 0 and $-p$

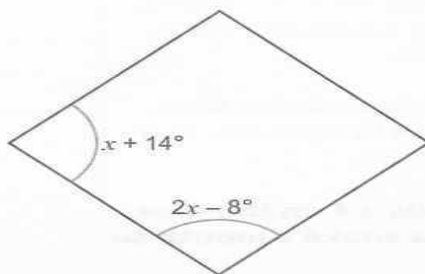
17. Look at the expression given below.

$$\sqrt{\sqrt{36} + \sqrt{64}}$$

What can we say about the value of the expression?

- A. It is at 10.
- B. It is at 14.
- C. It is between 3 and 4.
- D. It is between 36 and 64.

18. What is the measure of the smaller angle in the rhombus below?



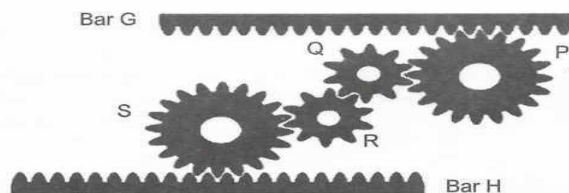
(Note : Figure is not to scale.)

- A. 108°
- B. 72°
- C. 58°
- D. 22°

19. Which of the following is the GREATEST?

- A. $9899 \times \frac{10}{11}$
- B. $9899 \div \frac{10}{11}$
- C. $9899 \times \frac{5}{11}$
- D. $9899 \div \frac{5}{11}$

20. In the figure below, two Bars G and H are attached to Gears P, Q, R and S.



If Bar G moves left, which gear(s) will rotate clockwise?

- A. only Gears P and R
- B. only Gears Q and S
- C. all - Gears P, Q, R and S
- D. (The gears can't rotate as they are stuck between the two bars.)