

2021-22



## National Level Science Talent Search Examination

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### CLASS VI

Please fill the following details immediately

Name \_\_\_\_\_

Hall Ticket No. \_\_\_\_\_

**Questions : 60**

**Time : 60 minutes**

#### INSTRUCTIONS

**Read all instructions carefully before attempting any question.**

- Ensure that the 'Class' printed here and inside, is the same as the test you are appearing for.
- You must complete the paper within the time allotted.
- Do not open this question paper until you are permitted to.
- You are not allowed to use a calculator.
- Figures herein are not to scale. Hence, you cannot depend on the estimate of size or measurement. Use your knowledge of the subject.
- Rough work shall be carried out only in the space provided for the same throughout this booklet. No separate sheets are allowed for the same.
- Return your answer sheet to the invigilator soon after completion and before leaving the examination hall. Take the question paper with you.
- There is no negative marking.
- Results would be made available on [www.unifiedcouncil.com](http://www.unifiedcouncil.com)

**PAPER CODE UN456**



**UCN/QP-VI/02**



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**01** Find the value of  $1 + \frac{2}{1 + \frac{3}{1 + \frac{4}{5}}}$ .

- (A)  $\frac{11}{4}$       (B)  $\frac{4}{7}$       (C)  $\frac{7}{4}$       (D)  $\frac{4}{11}$

**02** Select option that can exactly divide the number 156156.

- (A) 3 & 7      (B) 4 & 11  
(C) 13      (D) Options A, B & C

**03** The ratio of the incomes of Kavitha and Vanitha is 3 : 5. If the difference in their incomes is ₹ 7,000, which option correctly shows the income of Vanitha ?

- (A) ₹ 17,500      (B) ₹ 10,500  
(C) ₹ 21,500      (D) ₹ 11,600

**04** Select option that shows correctly the difference between the greatest number and the smallest number using the digits 9, 7, 0, 1, 5 (with no repetition).

- (A) 1,08,089      (B) 86,931  
(C) 28,431      (D) Can't possible

**05** Which option is not correct ?

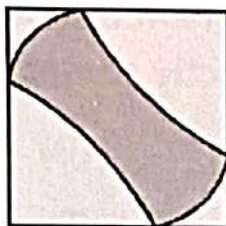
- (A)  $-100 < -99$       (B)  $-0.375 < -0.374$   
(C)  $-5 > -6$       (D)  $0 < -6$

**06** Select the option that is the sum of the 5th Prime number and the 6th Composite number.

- (A) 31      (B) 1      (C) 23      (D) 29



- 07** Choose the term used for common end point of two rays.  
(A) side (B) vertex (C) angle (D) arm
- 08** I am a simple closed figure bounded by five line segments. Who am I?  
(A) Pentagon (B) Hexagon  
(C) Quadrilateral (D) Triangle
- 09** If two equal angles are supplementary then what is the value of each angle?  
(A)  $45^\circ$  (B)  $90^\circ$  (C)  $60^\circ$  (D)  $180^\circ$
- 10** Identify the number of lines of symmetry for the given figure.



- (A) 2 (B) 4 (C) 1 (D) 3
- 11** If  $M$ ,  $M + 2$ ,  $M + 4$  are prime numbers then identify the value of  $M + 10$ .  
(A) 7 (B) 11 (C) 13 (D) 17

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SPACE FOR ROUGH WORK

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- 12** The width of rectangular field is half of its length and it is completely enclosed by  $x$  metres of fencing. Which option can be the area ?

(A)  $\frac{x^2}{2}$  sqm                      (B)  $2x^2$  sqm  
 (C)  $\frac{2x^2}{9}$  sqm                      (D)  $\frac{x^2}{18}$  sqm

- 13** Select option showing a correct ascending order.

(A)  $\frac{-5}{11}, \frac{-6}{7}, \frac{-1}{2}, \frac{-3}{4}$                       (B)  $\frac{-6}{7}, \frac{-3}{4}, \frac{-1}{2}, \frac{-5}{11}$   
 (C)  $\frac{-5}{11}, \frac{-1}{2}, \frac{-3}{4}, \frac{-6}{7}$                       (D)  $\frac{-3}{4}, \frac{-1}{2}, \frac{-6}{7}, \frac{-5}{11}$

- 14** Identify the simplest value of  $501^2 - 2 \times 499 \times 501 + 499^2$ .

(A) 0                      (B) 4                      (C) 5                      (D) 1,000

- 15** Which option is the HCF of 1794, 2139 and 4899 ?

(A) 26                      (B) 31                      (C) 71                      (D) 69

- 16** Subtract  $\frac{-11}{2}x - \frac{13}{7}y - \frac{12}{5}z$  from

$\frac{13}{4}x - \frac{5}{14}y - \frac{13}{10}z$ .

(A)  $\frac{35x}{4} + \frac{3y}{2} + \frac{11z}{10}$                       (B)  $\frac{35x}{4} - \frac{3y}{2} - \frac{11z}{10}$   
 (C)  $\frac{35x}{4} + \frac{3y}{2} - \frac{11z}{10}$                       (D)  $\frac{35x}{4} - \frac{3y}{2} + \frac{11z}{10}$

- 17 Simplify and select the correct option of

$$\frac{1}{1.5} x \times \frac{1}{3} xy^2 z^4 \times 54 x^2 yz$$

- (A)  $6xyz$  (B)  $12x^4 y^4 z^4$   
(C)  $12x^4 y^3 z^5$  (D)  $6x^3 y^2 z^5$

- 18 The total cost of 3 pens, 4 pencils and 2 erasers is ₹ 43. The total cost remains to be the same even if the quantities are changed to 2 pens, 3 pencils and 4 erasers, as their cost per unit is the same in both cases. With the same unit costs, the total cost of 4 pens, 2 pencils and 3 erasers is ₹ 49. Then, what will be the total cost of one pen, one pencil and one eraser ?

- (A) ₹ 20 (B) ₹ 18 (C) ₹ 15 (D) ₹ 28

- 19 Find the sum of the smallest prime number and the biggest prime number between 100 to 150.

- (A) 244 (B) 248  
(C) 261 (D) 250

- 20 Which option represents the sum of four angles in a quadrilateral ?

- (A)  $90^\circ$  (B)  $180^\circ$  (C)  $270^\circ$  (D)  $360^\circ$

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SPACE FOR ROUGH WORK

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- 21** How many integers lie from  $-2018$  to  $2019$  ?
- (A) 4036 (B) 4037  
(C) 4038 (D) Infinite
- 22** Which option is the longest side of a right angled triangle?
- (A) Altitude (B) Median  
(C) Angular bisector (D) hypotenuse
- 23** How much should Ramesh pay for ' $x$ ' pencils and ' $y$ ' sharpeners if each sharpner costs ₹ 5 and each pencil costs ₹ 7.
- (A) ₹  $(5x + 7y)$  (B) ₹  $(7x + 5y)$   
(C) ₹  $(7x - 5y)$  (D) ₹  $(7y - 5x)$
- 24** If  $\frac{1}{2} : x = \frac{5}{6} : \frac{25}{3}$ , then choose the correct value of  $x$ .
- (A) 4 (B) 5 (C) 6 (D) 8
- 25** If  $\bigcirc$  represents 12 students then  $\bigcirc\bigcirc\bigcirc\bigcirc$  represents \_\_\_\_\_ students.
- (A) 36 (B) 45 (C) 48 (D) 52

SPACE FOR ROUGH WORK



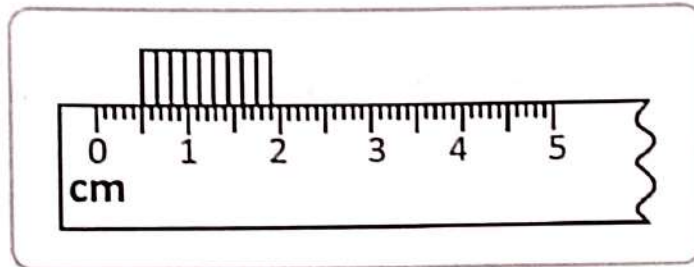
- 26 In which of these circuits will the bulb or bulbs glow the brightest ?
- (A) A simple circuit with one bulb and one cell  
(B) A simple circuit with one bulb and two cells  
(C) A simple circuit with two bulbs and one cell  
(D) A simple circuit with two bulbs and two cells
- 27 Anil's father has three different wires.

J : 12 cm
K : 2.8 m
L : 203 mm

Which of the following options shows the arrangement of the wires from the longest to the shortest ?

- (A)  $K \rightarrow J \rightarrow L$                       (B)  $K \rightarrow L \rightarrow J$   
(C)  $J \rightarrow L \rightarrow K$                       (D)  $L \rightarrow J \rightarrow K$
- 28 Choose the correct statement from the following.
- (A) In a glow worm the energy produced during a chemical reaction in its body is released in the form of light only.  
(B) An electric bulb glows, when the filament attains very high temperature due to the passage of current.  
(C) Due to the powerful reactions taking place in the sun the energy produced by the sun consists of light and heat.  
(D) All the above.

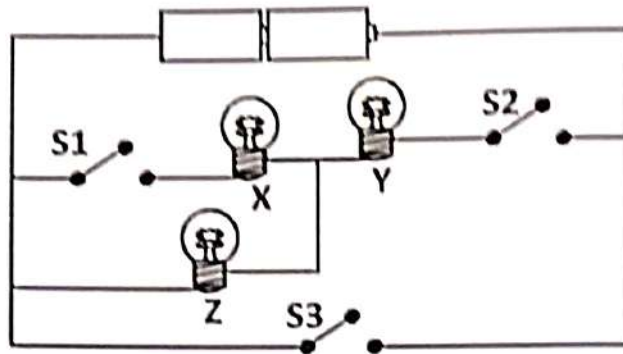
- 29** Which part of an electric bulb gives out light and heat when it is switched on ?
- (A) Glass bulb                      (B) Filament  
 (C) Metal casing                  (D) Metal tip
- 30** A pile of identical one rupee coins are placed over a metre scale as shown below.



- The thickness of a one rupee coin is
- (A) 1.55 mm                      (B) 1.58 cm  
 (C) 1.67 mm                      (D) 1.67 cm
- 31** The size of an image formed of an object by a plane mirror is
- (A) larger than the size of the object.  
 (B) smaller than the size of the object.  
 (C) equal to the size of the object.  
 (D) cannot be determined.
- 32** Electric current flows through a water heater, CD player, bulb and a fan. The correct energy conversion in the appliances respectively is from electrical energy to \_\_\_\_\_ energy.
- (A) Light, wind, sound, heat  
 (B) Heat, sound, light, mechanical  
 (C) Wind, sound, heat, light  
 (D) Sound, light, wind, heat



**33** Observe the electric circuit shown below.



When only Switch 2 (S2) is closed, which bulb/bulbs will light up ?

- (A) Y
- (B) Z
- (C) Y and Z
- (D) X, Y and Z

**34** Which of the following show movements without changing their place ?

- (i) The hands of a clock
- (ii) The opening and closing of flowers
- (iii) A flying bird

- (A) Only (i) and (ii)
- (B) Only (ii) and (iii)
- (C) Only (i) and (iii)
- (D) All the three

**35** Which of the following is a man made source of light ?

- (A) Incandescent lamp
- (B) Fluorescent lamp
- (C) Hurricane lamp
- (D) All the above

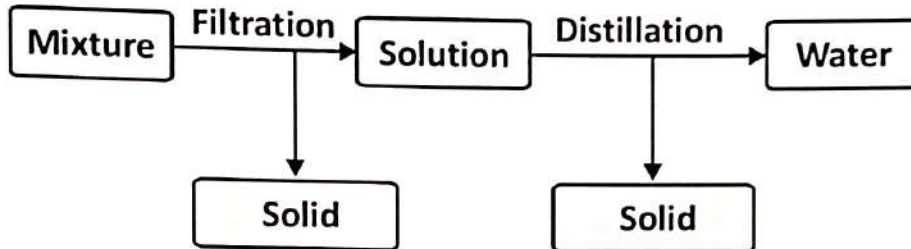
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- 36** Plaster of Paris (POP) hardens when applied over a bandage. This process is
- (A) reversible. (B) irreversible.  
(C) physical. (D) unnatural.
- 37** Which of the following is made up of only one material ?
- (A) Shoes (B) Towel  
(C) Milk bottle (D) Goggles
- 38** While separating salt from a mixture of salt and sand, the correct order of separation is
- (A) filter, then evaporate and finally add water.  
(B) add water, then filter and finally evaporate.  
(C) filter, then add water and finally evaporate.  
(D) evaporate, then add water and finally filter.
- 39** Which of these occurs due to condensation ?
- (A) The drying of wet clothes.  
(B) Water drops appearing on the outer side of a cool water bottle.  
(C) Steam rising from wet clothes when they are ironed.  
(D) Black board gets dried after it is wiped with wet cloth.
- 40** A boy placed a toy into different types of containers and observed if he was able to see the toy through each container. Which property of the container, he was trying to find out ?
- (A) Absorbency (B) Flexibility  
(C) Transparency (D) Strength





- 44** A student did the following activities as shown below to separate the constituents of a mixture.



**What could have been the mixture ?**

- (A) Water + Sand + Glass
- (B) Oxygen + Hydrogen + Salt
- (C) Stones + Rice + Water
- (D) Sand + Sugar + Water

- 45** Given below are few objects.

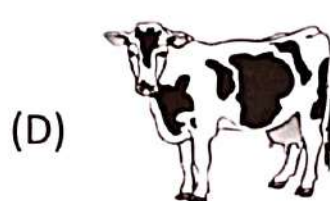
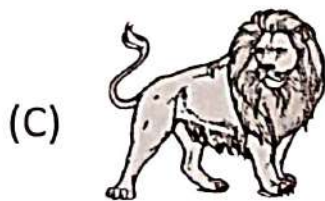
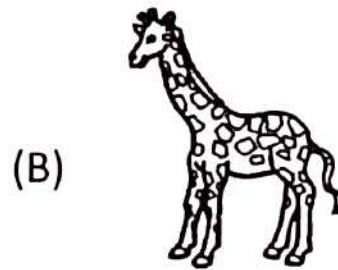
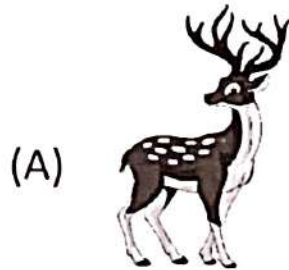
- (i) Cardboard
- (ii) Scissors
- (iii) Cutting plier
- (iv) Writing pad

**Which of the given objects are made from the same material ?**

- (A) (i) and (ii)
- (B) (i) and (iv)
- (C) (ii) and (iii)
- (D) (iii) and (iv)

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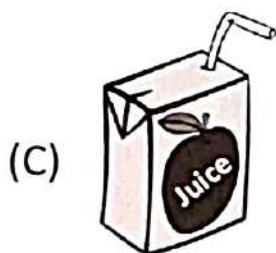
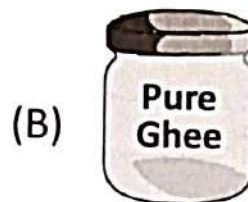
**46** Identify a secondary consumer from the following.



**47** Which class of food will you suggest to a boy who want to build his body ?

- (A) Food rich in carbohydrate
- (B) Food rich in vitamin
- (C) Food rich in protein
- (D) Food rich in fat

**48** Which of these is made from a plant source ?



**49** Complete the given correlation.

**Jute : Stem :: Cotton : ?**

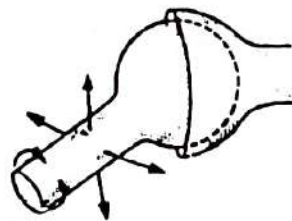
- (A) Flower (B) Fruit  
(C) Leaf (D) Seed

**50** The part marked X in the given figure of cucumber plant is called



- (A) prop root (B) tendril  
(C) climber (D) petiole

**51** Identify the type of joint shown.



- (A) Hinge (B) Ball and socket  
(C) Gliding (D) Pivot

**52** Select a source of calcium from the options given below.

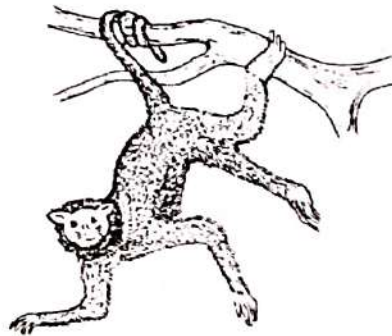
- (A) Broccoli (B) Cheese  
(C) Yogurt (D) All of these



**53** What are hydrophytes ?

- (A) Plants adapted to grow in water.
- (B) Plants adapted to high salinity.
- (C) Plants adapted to withstand water scarcity.
- (D) Plants adapted to grow on sand dunes.

**54** Find the adaptation that does not help monkey to climb trees.



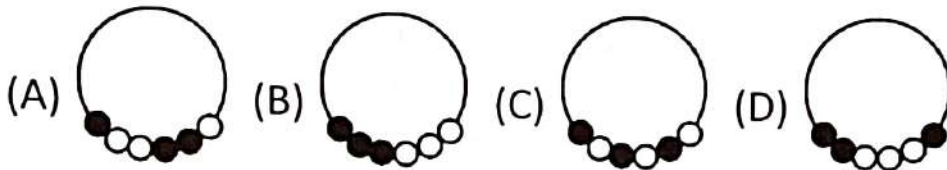
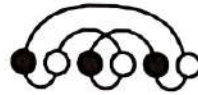
- (A) Brown fur
- (B) Strong arms
- (C) Opposable thumb
- (D) Prehensile tail

**55** Plants release water vapour, oxygen and carbon dioxide through small pores present on their leaves. What are these pores called as ?

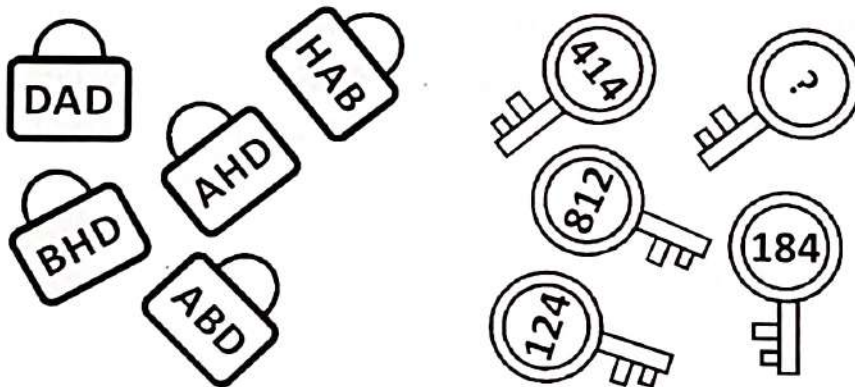
- (A) Tissue
- (B) Stomata
- (C) Mitochondria
- (D) Nucleus

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**56** Which option shows the necklace below when it is untangled ?



**57** Five different keys fit into the 5 different padlocks in the picture below. The numbers on the keys refer to the letters on the padlocks. What is written on the last key ?



- (A) 382
- (B) 282
- (C) 823
- (D) 284

**58** 66 matches were played in the West Zonal Basketball League. How many teams were there if each team played exactly once with another team ?

- (A) 12
- (B) 10
- (C) 11
- (D) 6

- 59** How many different ways can the word QUIZ be spelt out ?

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      Z
    Z I Z
  Z I U I Z
Z I U Q U I Z
  Z I U I Z
    Z I Z
      Z
    
```

- (A) 20 (B) 28  
(C) 24 (D) 26
- 60** Jonathan attended a maths camp that lasted for a few days. The clock indicated 12 o'clock noon when he returned home. If Johathan had left his house 100 hours ago, what time did he leave home to attend the camp ?
- (A) 8 pm (B) 9 am  
(C) 9 pm (D) 8 am

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