2021 - 22

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CLASS VII

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**

PAPER CODE	UN446

UCN/QP-VII/02

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01 If $x^{\left(\frac{-p}{q}\right)^{-1}} = \left(\frac{1}{x}\right)^{k}$ then k =

(A) $\frac{p}{q}$ (B) $-\frac{p}{q}$ (C) $-\frac{q}{p}$ (D) $\frac{q}{p}$

02 $(-12) \times 6 - (-12) \times 4 \div (-2 \times -12) = ?$

(A) 1 (B) – 70

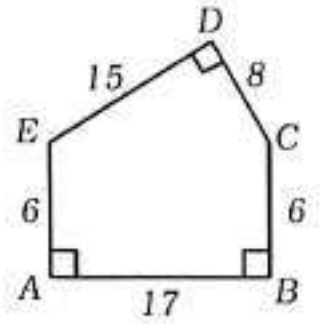
(C) 120 (D) –120

03 A piece of string is 40 centimeters long. It is cut into three pieces. The longest piece is 5 cm more than twice as long as the middle-sized and the shortest piece is half of the middle piece. Find the length of the longest piece (in cm)

(A) 27 (B) 25 (C) 4 (D) 9

Space for Rough work

04 Find the area of the following figure.



(A) 140 units^2 (B) 162 units^2

(C) 172 units^2 (D) 200 units^2

05 Of the 120 people in the room, $\frac{3}{5}$th are women. If $\frac{2}{3}$rd of the people are married, what is the maximum number of women in the room who could be unmarried ?

(A) 40 (B) 20

(C) 30 (D) 60

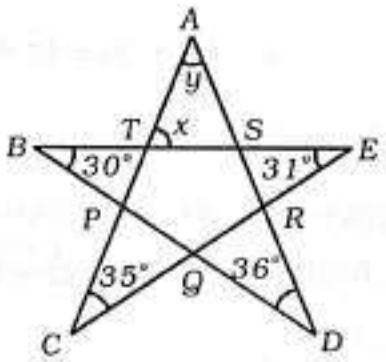
Space for Rough work

06 A jar contains black and white marbles. If there are ten marbles in the jar, which of the following could not be the ratio of black to white marbles ?

(A) 9:1 (B) 7:3

(C) 1:10 (D) 1:4

07 Find the angles x and y in the following figure.



(A) $x = 71°$ and $y = 61°$

(B) $x = 61°$ and $y = 71°$

(C) $x = 66°$ and $y = 48°$

(D) $x = 48°$ and $y = 66°$

Space for Rough work

08 The sum of three expressions is $x^2 + y^2 + z^2$. If two of them are $4x^2 - 5y^2 + z^2$ and $-3x^2 + 4y^2 + 2z^2$, find the third expression.

(A) $2x^2 + 2z^2$ (B) $2y^2$

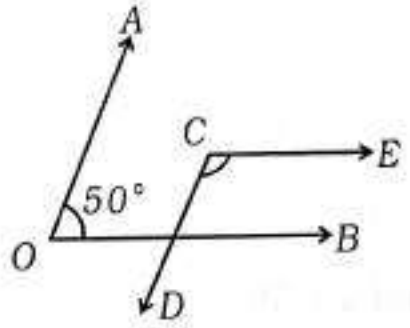
(C) $2x^2 + 2y^2 - z^2$ (D) $-2y^2 - 2z^2$

09 Which of the following is equal to

$x + y - [z - x - \{y + z - (x + y) - (z + x - \overline{y + z + x})\}]$

(A) $3x$ (B) $2y$ (C) x (D) 0

10 In the below given figure, it is being given that AO || CD, OB || CE and $\angle AOB = 50°$. Find the measure of $\angle ECD$.



(A) 50° (B) 90°

(C) 110° (D) 130°

Space for Rough work

11 Angles ratio of quadriteral is 1:2:3:4. What is the size of the greatest angle ?

(A) 144° (B) 180°

(C) 160° (D) 170°

12 $(-8) \div 0 = ?$

(A) –8 (B) 0

(C) not defined (D) Any real number

13 If a piece of cloth $2\frac{1}{2}$ m long costs ₹$128\frac{1}{3}$, then the cost of 1 m cloth is

(A) ₹ 110 (B) ₹ $\frac{110}{3}$

(C) ₹ $\frac{140}{3}$ (D) ₹ $\frac{55}{3}$

Space for Rough work

14 $7^{20} \times 49^5 \times 343^{-10} =$

(A) 7^2 (B) 7 (C) 1 (D) 49^2

15 Find the value of $9^{4.5} : 3^7$.

(A) 9 : 1 (B) 3 : 1

(C) 9 : 2 (D) 3 : 2

16 If $P = 3x - 4y - 8z$, $Q = -10y + 7x + 11z$ and $R = 19z - 6y + 4x$, find $P - Q + R$.

(A) $13x - 20y + 16z$ (B) 0

(C) $x + y + z$ (D) $2x - 4y + 3z$

17 Sum of two natural numbers is 30. If one number is one-fifth of other the product of those numbers is

(A) 200 (B) 216

(C) 125 (D) 225

Space for Rough work

18 If $\left(4^{\frac{1}{3}}\right)^{2x+\frac{1}{2}} = \frac{1}{32}$, find x.

(A) -2 (B) 4 (C) -6 (D) -4

19 $(a-1)(a+1)(a^2+1)(a^4+1)(a^8+1) = ?$

(A) $a^4 - 4$ (B) $a^8 - 16$

(C) $a^{16} - 1$ (D) $a^{16} - 16$

20 The price of a house increases by 25% after 10 years, reduces by 25% during the subsequent 10 years. If the present cost is ₹ 10 lakh, what will be its cost after 20 years ?

(A) ₹ 937500 (B) ₹ 900000

(C) ₹ 850000 (D) ₹ 725000

Space for Rough work

21 **A small bottle holds 0.845 kg of sauce. How much sauce will be there in 72 such bottles?**

(A) 60.84 kg (B) 22.815 kg

(C) 34.92 kg (D) 13.095 kg

22 **Identify the point that always lie in the interior of a triangle.**

(A) Orthocentre and incentre

(B) Incentre and circumcentre

(C) Centroid and Orthocentre

(D) Centroid and Incentre

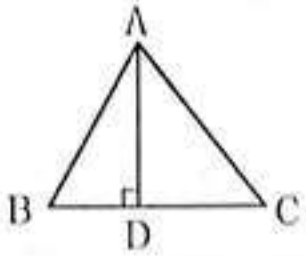
23 **Naresh sold two books for ₹ 600 each there by gaining 20% on one book and losing 20% on the other book. Find his overall loss or gain percent.**

(A) 5% loss (B) 5% gain

(C) 4% loss (D) 4% profit

Space for Rough work

24 In the adjoining figure find the measure of ∠BAC if ∠ABD = ∠CAD and ∠BAD = ∠ACD.



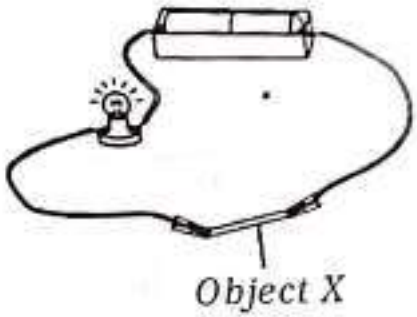
(A) 120°
(B) 60°
(C) 75°
(D) 90°

25 The fifth part of a number when increased by 5 equals its fourth part decreased by 5. Find the number.

(A) 80
(B) 100
(C) 160
(D) 200

Space for Rough work

26 When an object X is connected in the circuit shown below, the bulb lights up.



What can you conclude from this observation ?

(A) Object X is an electrical insulator.

(B) Object X is an electrical conductor.

(C) Electric current does not flow through an open circuit.

(D) Both (A) and (B)

27 Which of the following properties remains constant when a metal rod is heated ?

(A) Length (B) Density

(C) Volume (D) Mass

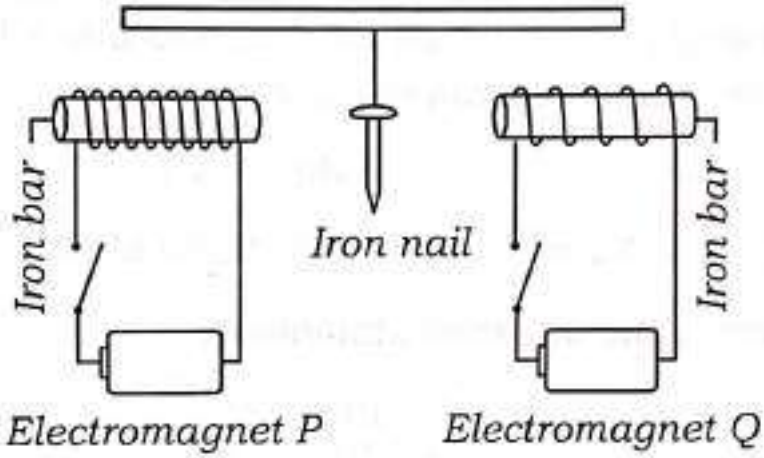
Space for Rough work

28 **A school bus takes 45 minutes to cover a distance of 18 km. Calculate its speed in km/h.**

(A) 11 km/h (B) 15 km/h

(C) 18 km/h (D) 24 km/h

29 **An iron nail is suspended freely midway between electromagnet P and electromagnet Q as shown.**



If both the circuits are closed, what will happen to the iron nail ?

(A) There is no change in the position of iron nail.

(B) Iron nail moves towards electromagnet Q.

(C) Iron nail moves towards electromagnet P.

(D) Both (A) and (B).

Space for Rough work

30 **Which of these is an example of contraction ?**

(A) Riveting steel plates together

(B) Skating on ice

(C) Sagging of telephone wires

(D) Drinking through a straw

31 **Two boys X and Y participated in a 200 m race. Boy X finished the race in 20 seconds and boy Y finished it in 25 seconds. Who ran faster ?**

(A) Boy X (B) Boy Y

(C) Boys X and Y (D) None of the boys

32 **Identify the incorrect statement.**

(A) When an electric current flows through a conductor, heat is produced.

(B) Room heater, electric bulb etc, utilize the heating effect of current.

(C) Electromagnets are used in electric bells and buzzers.

(D) An electric circuit is a continuous, non- conducting path for flow of electric current.

Space for Rough work

33 **A metal ball heated to a temperature of 150° C is placed at a room temperature of 25° C. At what temperature will it stop radiating heat ?**

(A) 0° C
(B) 25° C
(C) 100° C
(D) 120° C

34 **Which of the following will increase the period of a pendulum ?**

(A) Use a heavier pendulum bob.
(B) Shorten the length of the pendulum.
(C) Swing with a larger angle of oscillation.
(D) Use a longer pendulum.

35 **Which one becomes a strongest electro-magnet with the given turns of wire on a coil and flow of current through it ?**

	Number of turns of wire	Current in wire
(A)	10	0.1 A
(B)	20	0.1 A
(C)	20	0.5 A
(D)	10	0.5 A

Space for Rough work

36 A mixture of five parts of iron fillings and three parts of sulphur are strongly heated. Which of the following does not take place ?

(A) Heat is given off.

(B) Light is given off.

(C) A chemical change took place.

(D) The black residue is attracted to a magnet.

37 Which substance is used to reduce the acidity in soil ?

(A) Ammonium sulfate (B) Calcium hydroxide

(C) Sodium chloride (D) Calcium nitrate

38 Which of the following is mostly affected by a strong typhoon ?

(A) Areas along the shores

(B) Fertile valley

(C) High mountains

(D) Wide plateaus

Space for Rough work

39 **Identify an exothermic process.**

(A) Melting of ice

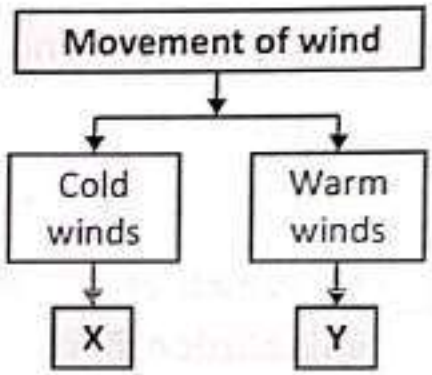
(B) Evaporation of ethanol

(C) Formation of iodine vapour from iodine crystals

(D) Condensation of water vapour to form liquid droplets.

40 **Study the flow chart given below and identify 'X' and 'Y'.**

	X	Y
(A)	Lateral	Vertical
(B)	Vertical	Lateral
(C)	Lateral	Lateral
(D)	Vertical	Vertical



Space for Rough work

41 **Which of the following elements burn in oxygen to form an oxide, which when mixed with water, gives an acidic solution with a pH less than 7 ?**

(A) Calcium (B) Copper

(C) Magnesium (D) Sulfur

42 **Which of these changes indicate a chemical change ?**

(A) The reaction is reversible.

(B) There is no energy change.

(C) A new chemical substance is formed.

(D) Heat and light are not given off.

43 **Which of the following is true of all acids in aqueous solution ?**

(A) They conduct electricity.

(B) They turn universal indicator red.

(C) They react with all metals to give hydrogen gas.

(D) They react with ammonium salts to give ammonia gas.

Space for Rough work

44 **Match the entries in Column-I with those in Column-II.**

	Column I		Column II
a	Burning of wood	1	Physical change
b	Formation of days and nights	2	Slow change
c	Curdling of milk	3	Periodic change
d	Melting of ice	4	Chemical change

(A) a-2, b-3, c-4, d-1 (B) a-4, b-3, c-2, d-1

(C) a-4, b-3, c-1, d-2 (D) a-3, b-4, c-2, d-1

45 **Which of the following word equations represents neutralisation ?**

(A) Sodium hydroxide + hydrochloric acid → sodium chloride + water

(B) Calcium carbonate → calcium oxide + carbon dioxide

(C) Hydrogen + oxygen → water

(D) Methane + oxygen → carbon dioxide + water

Space for Rough work

46 **A rain forest is a very wet place. What helps plants survive there ?**

(A) Thick stems that store water

(B) Roots that grow close to the ground

(C) Stems that move around

(D) Large, pointed leaves

47 **Which organism(s) is/are both a predator and a prey in the given food chain ?**

Banana → Fruit fly → Frog → Snake → Eagle.

(1) Fruit fly **(2) Frog**

(3) Snake **(4) Eagle**

(A) 2 only (B) 2 and 3 only

(C) 1, 2 and 3 only (D) 1, 2, 3 and 4

48 **Which organisms are most important for adding nutrients to the soil ?**

(A) Consumers (B) Scavengers

(C) Producers (D) Decomposers

Space for Rough work

49 **Study the chart.**

$$\boxed{P} \longrightarrow S \longrightarrow T \longrightarrow \boxed{Q}$$

It shows that P develops into Q after P undergoes processes S and T. What can P, Q, S and T be ?

	P	Q	S	T
(A)	Flower	Fruit	Fertilisation	Pollination
(B)	Flower	Pollination	Fertilisation	Fruit
(C)	Flower	Fruit	Pollination	Fertilisation
(D)	Seed	Seedling	Fertilisation	Pollination

50 **How will an oxygen molecular travel after it enters the body from the atmosphere ?**

(A) Trachea → bronchus → bronchiole → alveoli

(B) Bronchus → bronchiole → trachea → alveoli

(C) Bronchus → trachea → bronchiole → alveoli

(D) Trachea → bronchus → alveoli → bronchiole

Space for Rough work

51 What are the products of aerobic and anaerobic respiration in humans ?

	Aerobic respiration			Anaerobic respiration		
	Carbon dioxide	Lactic acid	Water	Carbon dioxide	Lactic acid	Water
(A)	✓	✓	✗	✓	✓	✓
(B)	✓	✗	✓	✓	✓	✓
(C)	✓	✗	✓	✗	✓	✓
(D)	✗	✓	✗	✓	✗	✗

Key: ✓ = is a product Key: ✓ = is not product

52 What can we do to prevent landslides on a slope?

i) Grow more trees on the slope.

ii) Grow grass on the slope.

iii) Have more cattle grazing on the slope.

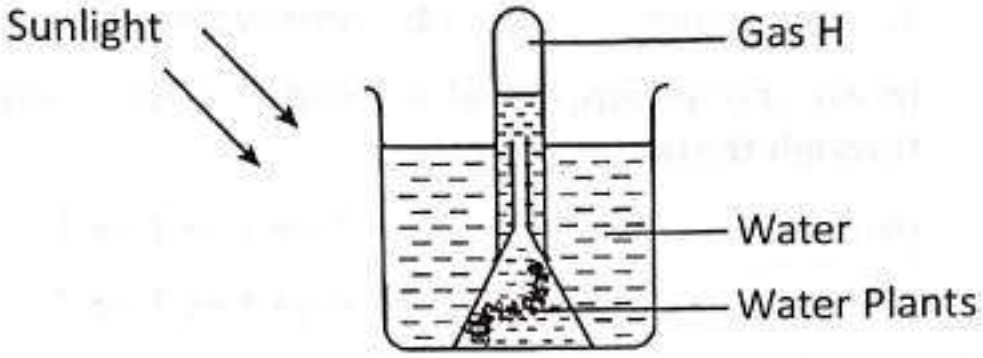
iv) Stop cutting down trees that have grown healthily on the slope.

(A) i and ii only (B) i, ii and iv only

(C) iii and iv only (D) i, iii and iv only

Space for Rough work

53 **Gas H is collected when the set-up below is left for four hours under the sun.**



Which of the following statements about Gas H are true ?

i) It is produced when water plants make food.

ii) It can be used to light up a glowing splinter.

iii) It turns limewater chalky.

(A) i and ii only (B) i and iii only

(C) ii and iii only (D) i, ii and iii

Space for Rough work

54 Four types of organisms are listed.

1. Carnivores
2. Decomposers
3. Herbivores
4. Producers

In an ecosystem, in which order does energy flow through these organisms ?

(A) $2 \rightarrow 1 \rightarrow 3 \rightarrow 4$ (B) $2 \rightarrow 3 \rightarrow 1 \rightarrow 4$

(C) $4 \rightarrow 1 \rightarrow 3 \rightarrow 2$ (D) $4 \rightarrow 3 \rightarrow 1 \rightarrow 2$

55 How do penguins keep themselves warm ?

i) They have a layer of fat or blubber beneath their skin.

ii) They have a webbed feet.

iii) They huddle together.

iv) They have feathers.

(A) i and iii only (B) i and iv only

(C) i, iii and iv only (D) i, ii, iii and iv

Space for Rough work

56 The nine keys to nine padlocks have all been mixed up. How many times must you try at the most to match each key to its correct padlock ?

(A) 28 (B) 32

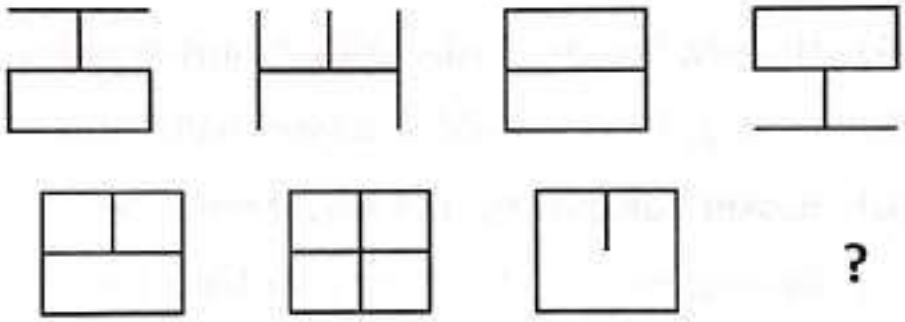
(C) 36 (D) 38

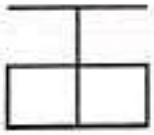
57 How many times does the digit '5' appear in a book that has 255 pages ?

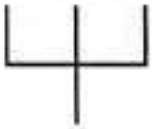
(A) 182 (B) 48

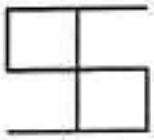
(C) 66 (D) 52

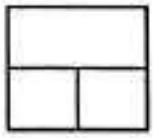
58 Identify the last diagram to continue with the logical pattern.



(A) 

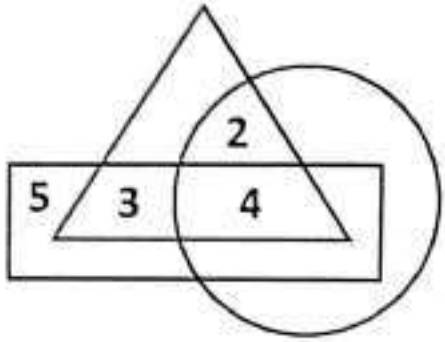
(B) 

(C) 

(D) 

Space for Rough work

59 In the given figure if triangle represents healthy people, rectangle represents old persons and circle represents men. Then how many men are healthy but not old ?



(A) 3 (B) 4 (C) 6 (D) 2

60 Starting from the least, arrange these sporting events in increasing order of the number of players in the playing area during a game.

(A) Hockey, Boxing, Basket ball, Tennis doubles

(B) Boxing, Tennis doubles, Basket ball, Hockey

(C) Basket ball, Boxing, Hockey, Tennis doubles

(D) Boxing, Basket ball, Tennis doubles, Hockey

Space for Rough work

2021-22

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CLASS VIII

Please fill the following details immediately

Name _____

Hall Ticket No. _____

Questions : 60 **Time : 60 minutes**

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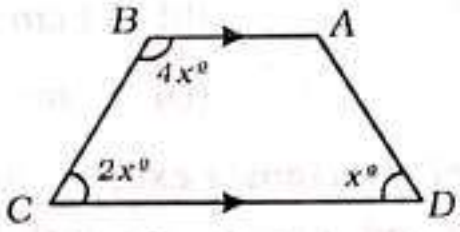
Class : 8 **Mathematics**

01 π is a _____ number.

(A) Rational (B) Whole

(C) Natural (D) Irrational

02 In the given figure, ABCD is a trapezium. Find the value of $\angle BAD$.



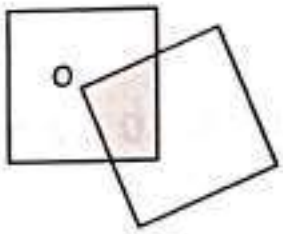
(A) 30° (B) 40° (C) 60° (D) 150°

03 If $\frac{6x+7}{3x+2} = \frac{4x+5}{2x+3}$ then x = _____

(A) $-\frac{7}{9}$ (B) -1 (C) $-\frac{11}{9}$ (D) $-\frac{11}{7}$

Space for Rough work

04 Shown below are two congruent squares of 24 cm^2 area each. If 'O' is the centre of one square, then area of shaded region is ____



(A) 18 cm^2 (B) 12 cm^2

(C) 6 cm^2 (D) 8 cm^2

05 The length of a rectangle exceeds its breadth by 9 cm. If the length and breadth are each increased by 3 cm, the area of the new rectangle will be 84 cm^2 more than that of the given rectangle. Find the length of the given rectangle.

(A) 9 cm (B) 13 cm

(C) 17 cm (D) 19 cm

Space for Rough work

06 If $(x + 1)$ is a factor of $x^4 + (p - 3)x^3 - (3p - 5)x^2 + (2p - 9)x + 6$, what is the value of p ?

(A) 1 (B) 2 (C) 3 (D) 4

07 If $2^a + 3^b = 17$ & $2^{a+1} - 3^{b+1} = -11$ then the values of a & b respectively are

(A) -2 & 3 (B) 2 & -3

(C) 2 & 3 (D) 3 & 2

08 $\left(\frac{x^{-1} + y^{-1}}{x^{-1}}\right)^{-1} - \left(\frac{x^{-1} - y^{-1}}{x^{-1}}\right)^{-1} =$

(A) $\frac{2y^2}{y^2 - x^2}$ (B) $\frac{2xy}{x^2 - y^2}$

(C) $\frac{2x^2}{x^2 + y^2}$ (D) $\frac{2y^2}{x + y^2}$

Space for Rough work

09 Find the cost of painting the four walls of a room 10 metres long, 5 metres broad and 6 metres high at the cost of ₹ 4 per square metre.

(A) ₹ 720 (B) ₹ 880

(C) ₹ 360 (D) ₹ 1200

10 If $4(4x)^7 = 4^{6^2}$, then what is the value of x ?

(A) 5 (B) 25 (C) 64 (D) 256

11 $$\frac{3\left(4+2m^2-m\right)-6\left(3m^2+m+2\right)}{2(2m-3)+3(m+2)} = ?$$

(A) $\frac{3(3m+4)}{7}$ (B) $\frac{3(4m+3)}{7}$

(C) $\frac{3(3m-4)}{7}$ (D) $\frac{-3(4m+3)}{7}$

Space for Rough work

12 ₹ 207 divided among three friends A, B and C in the ratio $\frac{1}{6}:\frac{1}{4}:\frac{1}{3}$. then B's share = ___

(A) ₹ 46 (B) ₹ 92

(C) ₹ 138 (D) ₹ 69

13 Identify the greatest among the options.

(A) $(9)^{100}$ (B) $(81)^{49}$

(C) $(27)^{64}$ (D) 3^{198}

14 $\sqrt[3]{x^2\left(x^4+3y^4\right)-y^2\left(3x^4+y^4\right)}=?$

(A) $(x+y)$ (B) $(x-y)$

(C) (x^2-y^2) (D) (x^3-y^3)

Space for Rough work

15 If $x = \frac{a-b}{a+b+c+b} = \frac{b-c}{a+b+c+d} = \frac{c-d}{a+b+c+d} = \frac{d-a}{a+b+c+d}$, then find x^3 ?

(A) 1 (B) 8 (C) 0 (D) 27

16 If p = 24 then $\sqrt{p(p^2+3p+3)+1}$ = ?

(A) 5 (B) 7

(C) 123 (D) 125

17 A solution of 150 litres contains 60% of milk and the rest water. How much water must be added to the above solution such that the resulting mixture contains 50% of water (in Litres) ?

(A) 60 (B) 80 (C) 20 (D) 30

Space for Rough work

18 If $\sqrt{3\sqrt{3\sqrt{3\sqrt{3\sqrt{3}}}}} = 3^n$, find the value of n.

(A) $\frac{11}{24}$ (B) $\frac{15}{16}$ (C) $\frac{63}{64}$ (D) $\frac{31}{32}$

19 A number consists of two digits. The digit in the ten's place exceeds the digit in the unit's place by 4. The sum of the digits is $\frac{1}{7}$ of the number. The number is :

(A) 62 (B) 73

(C) 95 (D) 84

20 In a division sum, the divisor is 12 times the quotient and 5 times the remainder. If the remainder is 48, what is the dividend ?

(A) 240 (B) 576

(C) 4800 (D) 4848

Space for Rough work

21 The difference between the compound interest and the simple interest on a certain sum of money for 2 years at 11% per annum is ₹ 363. Find the sum.

(A) ₹ 33,000 (B) ₹ 31,000

(C) ₹ 30,000 (D) ₹ 32,000

22 The speed of a metro train is 54 km/hr excluding stoppage time and including stoppage, the speed is 45 km/hr then for how many minutes does it stop per hour ?

(A) 9 (B) 10 (C) 20 (D) 11

23 The volume of a cubical box is 13.824 cubic metres. Find the length of each side of the box.

(A) 2.4 m (B) 2.6 m

(C) 1.4 m (D) 1.6 m

Space for Rough work

24 $\frac{(126)^{\frac{1}{2}}(63)^{\frac{1}{2}}(45)^{\frac{1}{2}}}{(147)^{\frac{1}{2}}(243)^{\frac{1}{2}}} =$ _____

(A) $2^{\frac{1}{2}}$ (B) $10^{\frac{1}{2}}$

(C) $5^{\frac{1}{2}}$ (D) $7^{\frac{1}{2}}$

25 **Square root of sum of cubes of first 10 natural numbers is ____**

(A) 45 (B) 50

(C) 55 (D) 100

Space for Rough work

26 **Which of the following does not produce a sound ?**

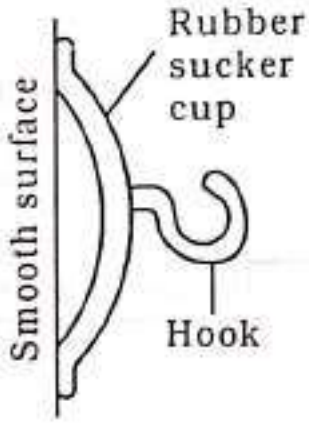
(A) A bell ringing under water.

(B) A gun fired in a room with no echoes

(C) A hammer hitting a block of rubber.

(D) An explosion in outer space.

27 **A rubber sucker is shown below.**



It sticks to the surface because the

(A) air outside the cup is at higher pressure.

(B) air outside exerts a force on the cup.

(C) cup is sucked by the air inside.

(D) both (A) and (B)

Space for Rough work

28 A wooden block was pushed across different surfaces using the same force. The table below shows the distance moved by the wooden block on each surface. Which surface produced the most frictional force ?

	Surfaces	Distance moved by block (cm)
(A)	Sand paper	11
(B)	Silk	24
(C)	Smeared with oil	28
(D)	Carpet	19

29 Which of the following does not conduct electricity ?

(A) $CuSO_4$ Solution (B) Graphite

(C) Acidified water (D) Solid NaCl

30 How many characters or dot patterns are there in a Braille system ?

(A) 23 (B) 46

(C) 63 (D) 86

31 Identify the similarity and difference between a low-pitch sound and a high-pitch sound produced by the same instrument.

	Similarity	Difference
(A)	Speed	Frequency
(B)	Wavelength	Frequency
(C)	Frequency	Wavelength
(D)	Frequency	Speed

32 **Which of the following belongs to electro-static force ?**

(A) Two planets attract one another.

(B) Two surfaces rub against each other.

(C) A field pattern is formed when iron fillings are sprinkled around a magnet.

(D) A plastic ruler attracts tiny pieces of paper after rubbing with a woollen cloth.

33 **Which of the following combinations is possible ?**

	Charge P	Charge Q	Effect
(A)	Positive	Positive	Attraction
(B)	Positive	Negative	Attraction
(C)	Negative	Negative	Attraction
(D)	Negative	Positive	Repulsion

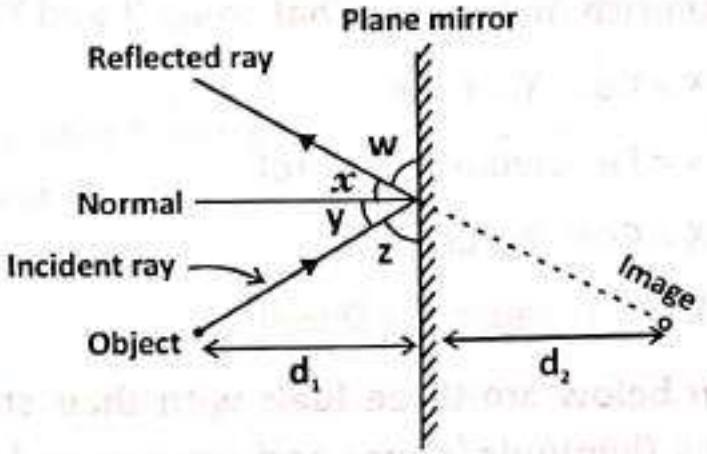
34 **Which electrolyte would you use for electro-plating an iron nail with copper metal ?**

(A) Copper oxide (B) Iron sulphate

(C) Iron nitrate (D) Copper sulphate

Space for Rough work

35 An image of an object is formed in a plane mirror as shown below.



Identify the correct option.

	Distance	Angle
(A)	d_1 is equal to d_2	$x \neq y$
(B)	d_1 is greater than d_2	$x \neq y$
(C)	d_1 is equal to d_2	$w = z$
(D)	d_1 is lesser than d_2	$w = z$

Space for Rough work

36 When X is heated in the absence of air, Y is formed. Y is tough, porous and a black substance. X and Y are carbon-rich materials. What could X and Y be ?

(A) X = Coal, Y = Coke

(B) X = Petroleum, Y = Petrol

(C) X = Coal, Y = Coal tar

(D) X = Petroleum, Y = Diesel

37 Given below are three fuels with their state, calorific values (kilojoule/gram) and products of combustion respectively.

P : Solid, 33, CO_2 and forms solid residue.

Q : Liquid, 48, CO_2 and no residue is formed.

R : Gas, 150, Explodes forming steam and no residue is formed.

Which one of the three fuels is most ideal ?

(A) Fuel R (B) Fuel P

(C) Fuel Q (D) Fuels P and R

Space for Rough work

38 **What is the common product (gas) formed when zinc reacts separately with a dilute acid and a dilute base ?**

(A) Hydrogen (B) Oxygen

(C) Carbon dioxide (D) Nitrogen

39 **A polyester fabric should not be ironed with a hot iron because**

(A) it is a waste of electricity.

(B) it will melt.

(C) it will catch fire.

(D) it will lose its colour.

40 **Wood or coal when burnt in air release X particles into the atmosphere and when inhaled by humans cause a disease Y. What are X and Y ?**

(A) Burnt carbon, respiratory disease.

(B) Burnt carbon, nervous disease.

(C) Unburnt carbon, respiratory disease.

(D) Unburnt carbon, nervous disease.

Space for Rough work

41 **In the oil wells, natural gas forms the top most layer, followed by oil and finally water. This is because**

(A) oil and gas are heavier than water.

(B) gas and oil are lighter than water.

(C) oil and gas stick to each other.

(D) none of these.

42 **A student burnt the given fibres one by one with a match stick and observed the following.**

I - Nylon **II - Wool** **III - Cotton**

IV - Silk **V - Polyester**

Which statement is true ?

(A) II and III burn to form a residue.

(B) I and V melt on burning.

(C) II and IV burn with smell of burning hair.

(D) All of the above

Space for Rough work

43 **Which of the given statements is not true ?**

(A) Among all the naturally occurring elements, around eighty percent are metlas.

(B) Non-metals are more abundant than metals.

(C) Sodium and potassium are soft like wax.

(D) Bromine is a reddish brown liquid at room temperature.

44 **A good fuel has ignition temperature and calorific value that are respectively**

(A) low and high. (B) low and low.

(C) high and high. (D) high and low.

45 **Which metal does not react with dilute hydrochloric acid to produce hydrogen gas ?**

(A) Iron (B) Zinc

(C) Copper (D) Magnesium

Space for Rough work

46 **When can you say an animal is extinct ?**

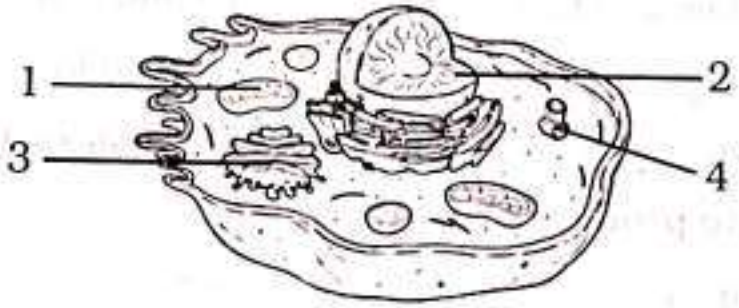
(A) when it is in its habitat.

(B) when it is hiding.

(C) when there are only a few left in the world.

(D) when it is no longer living.

47 **The diagram shows a cell. Which structure should be labelled the nucleus ?**



(A) 1 (B) 2

(C) 3 (D) 4

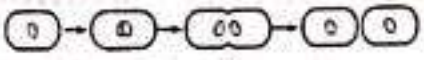
Space for Rough work

48 **Which diagram is the best example of an organism undergoing sexual reproduction ?**

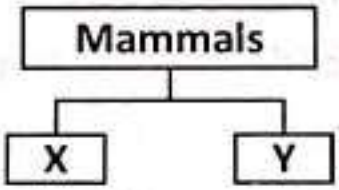
(A) 
Strawberry plant

(B) 
Jellyfish

(C) 
Hydra

(D) 
Bacterium

49 **There are many kinds of mammals. They can be classified in different ways.**



Study the chart above. Which of the following can sub-headings X and Y be ?

	X	Y
(A)	External fertilisation	Internal fertilisation
(B)	Reproduce by giving birth to young alive	Reproduce by laying eggs
(C)	One cell	Many cells
(D)	Sexual reproduction	Asexual reproduction

50 **Usually an egg is released from a female reproductive system every month. However, why do most of the eggs not develop into babies ?**

(A) They do not get sufficient oxygen to develop into babies.

(B) They do not get sufficient food to develop into babies.

(C) They are not fertilised by sperms.

(D) They do not have nuclei.

51 **Why are earthworrms good friends of farmers ?**

i) Their castings make the soil fertile.

ii) They help to drain and aerate the soil when they make tunnels in the soil.

iii) They loosen and mix the soil evenly when they burrow through the soil.

iv) They do not destroy the crops.

(A) i and iii only (B) i and iii only

(C) ii and iii only (D) i, ii iii and iv

Space for Rough work

52 **A bag made of a special material allows oxygen gas but not other gases or air pollutants to pass through it. What can you conclude from the information given ?**

(A) The bag is made from nylon.

(B) The bag is made from polyester.

(C) The bag is made partially permeable cell membrane.

(D) The bag is waterproof.

53 **What is the basic unit of life ?**

(A) Tissue (B) Cell

(C) Organ (D) System

54 **A scientist observes a cell that has cell wall, no nucleus, and no visible organelles. What kind of cell is the scientist observing ?**

(A) Protist (B) Gamete

(C) Plant cell (D) Prokaryote

Space for Rough work

55 What are some advantages biotechnology has brought to mankind ?

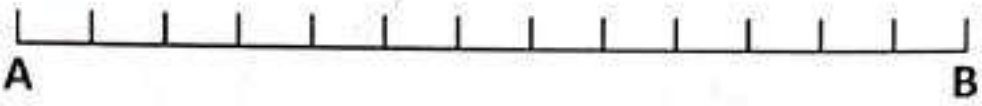
1. Better yield of crops.
2. Decrease usage of pesticides
3. Pest resistant crops.
4. Producing crops with better nutritional value.

(A) 1 only (B) 2 only

(C) 1 and 3 only (D) 1, 2, 3 and 4

Space for Rough work

56 There are 12 points along line AB, excluding A and B. How many lines segments can be counted altogether ?



(A) 90 (B) 91

(C) 100 (D) 101

57 A, B, C, D, E, F and G are sitting in a row facing North.

F is to the immediate right of E.

E is 4th to the right of G.

C is the neighbour of B and D.

Person who is third to the left of D is at one of the ends.

Which of the following statement is not true ?

(A) E is to the immediate left of D

(B) A is at one of the ends

(C) G is to the immediate left of B

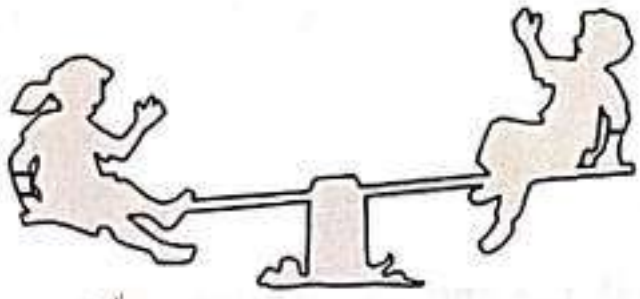
(D) F is second to the right of D

58 A cow produces a calf at the beginning of every year. The young cow will become productive and conceive in the fourth year and gives birth to another calf the beginning of every year, starting from the following year. How many cows will there be in the eighth year ?

(A) 12 (B) 17

(C) 22 (D) 19

59 The person on the left is lower than the person on the right. What can be person on the right do in order to make the seesaw more level ?



(A) Slide forward (B) Sit up straight

(C) Slide backward (D) Lean forward

60 Identify the correct logo of Chevrolet compary.

(A)  (B) 

(C)  (D) 

Space for Rough work