

	Sample Paper-I (2023-24)		
Class:	XI Mathematics		
Time:	02:30 Hrs.		
M.M:	75		

Personal Information

Student's Name:- _____ **Father's Name:-** _____

City:- _____ **Mobile No:-** _____ **Exam Date:-** / /2023

Studying in Class: _____ **Appearing for class:-** _____ **Board:** _____

GENERAL INSTRUCTIONS:

- All questions are compulsory.
- Section A contains 25 questions (from 1-25) of Mathematics.
- Section B contains 15 questions (from 26-40) of Physics.
- Section C contains 15 questions (from 41-55) of Chemistry.
- Section D contains 10 questions (from 56-65) of Biology.
- Section E contains 09 questions (from 66-74) of English.

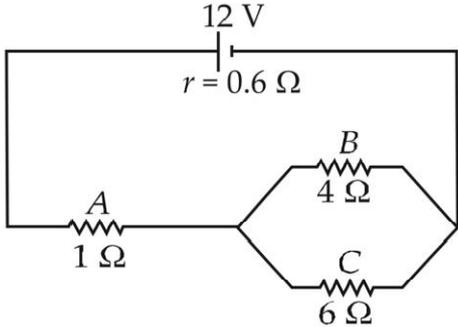
Mathematics (25)	Physics (15)	Chemistry (15)	Biology (10)	English (10)	OBTAINED MARKS (75)

Section-A Mathematics		
Q.N	Questions	Answers
1.	If the median of the data: 24, 25, 26, $x + 2$, $x + 3$, 30, 31, 34 is 27.5, then $x = ?$	
2.	The solution of the equations $x - 2y = 0$ and $3x + 4y = 20$ is:	
3.	Which term of the A.P. 3, 15, 27, 39, will be 132 more than its 60 th term?	

4.	What is the distance between two parallel tangents of a circle of radius 4 cm?	
5.	If the difference of mode and median of a data is 24, then the difference of median and mean is?	
6.	The decimal expansion of $\frac{131}{120}$ will terminate after how many places of decimal?	
7.	Find the probability that a leap year selected at random will contain 53rd Sundays or Monday.	
8.	Volume and surface area of a solid hemisphere are numerically equal. What is the diameter of hemisphere?	
9.	If the diameter of a semi-circular protractor is 14cm, then find its perimeter.	
10.	If one zero of $2x^2 - 3x + k$ is reciprocal of the other, then find the value of k?	
11.	Solve: $\frac{4}{x} - 3 = \frac{5}{2x+3}; x \neq 0, x \neq -\frac{3}{2}$.	
12.	If $\sec \theta - \tan \theta = P$ and $\operatorname{cosec} \theta + \cot \theta = \frac{1}{P}$ then the value $\frac{\sec \theta + \tan \theta}{\operatorname{cosec} \theta - \cot \theta}$ in term of P is.....	
13.	What is true about the line $x-5=0$? (a) It is a straight line passing through origin. (b) It is a straight line parallel to x-axis and at a distance of 5 units from it. (c) It does not represent a straight line (d) It is a straight line parallel to y-axis and at a distance of 5 units from it.	
14.	If the angles of elevation of a tower from two points at a distant 'a' and 'b' unit ($a > b$) from its foot and in the same straight line from it are 30° and 60° , then the height of the tower is	

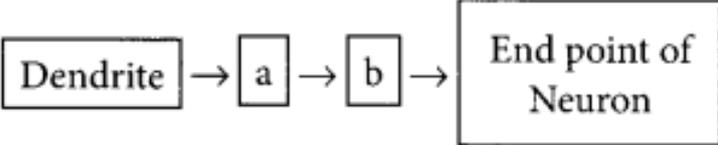
15.	A pendulum swings through an angle of 30° and describes an arc 8.8 cm in length. Find the length of the pendulum. $\left(Use \pi = \frac{22}{7}.\right)$	
16.	A right angled triangle with sides 3cm and 4cm is revolved around its hypotenuse. Find the volume of the double cone thus generated.	
17.	How many coins 1.75 cm in diameter and 2mm thick must be melted to form a cuboid $11\text{ cm} \times 10\text{ cm} \times 7\text{ cm}$?	
18.	If the ratio of the height of a tower and the length of its shadow is $\sqrt{3}:1$, what is the angle of elevation of the Sun?	
19.	A jar contains 54 marbles each of which is blue, green or white. The probability of selecting a blue marble at random from the jar is $\frac{1}{3}$, and the probability of selecting a green marble is $\frac{4}{9}$. How many white marbles does the jar contain?	
20.	Find the greatest number which divides 260, 1314 and 1331 and leaves remainder 5 in each case.	
21.	The zeroes of the polynomial $\sqrt{3}x^2 - 8x + 4\sqrt{3}$ are	
22.	A train takes 2 hours less for a journey of 300 km if its speed is increased by 5 km/hr from its usual speed. Find the usual speed of the train.	
23.	The first negative term of the given AP 121, 117, 113 is	
24.	Determine the ratio in which $3x - 5y + 8 = 0$ divides the joining of (4,3) and (8,7).	

25.	In a ΔPQR , $\angle Q = 90^\circ$, $PR + QR = 25\text{cm}$ and $PQ = 5\text{cm}$ the value of $\frac{\sin P}{\cos R}$ is ?	
Section-B		
Physics		
26.	How voltmeter is connected across the resistor to measure voltage drop across it?	
27.	Which type of mirror is used by ENT specialist?	
28.	Write the name of defect of vision in which a person is able to see nearby objects clearly, but not far objects.	
29.	Which type of lens is used to correct hypermetropia?	
30.	Write the name of phenomenon behind the bluish colour of sky.	
31.	If current flows from north to south in a conductor placed over magnetic compass then in which direction north pole of magnetic compass will point?	
32.	By which law the direction of force acting on a current carrying conductor kept in a magnetic field is given?	
33.	How many time the resistance of a wire changes when it is uniformly stretched to twice its length?	
34.	How many joules in 1 kWh?	
35.	Write the relation between resistance (R) of filament of a bulb, its power (P) and a constant voltage V applied across it.	

36.	<p>Figure shows a battery of 12 V and internal resistance 0.6Ω connected to three resistors A, B and C. Find the current in 4Ω resistor.</p> 	
37.	<p>Masses of three wires of copper are in the ratio 1 : 3 : 5 and their lengths are in the ratio of 5 : 3 : 1. Find the ratio of their electrical resistances.</p>	
38.	<p>A convex lens forms a real image on a screen when an object is placed at 10 cm from the screen. On shifting the lens by 2 cm, a real image is again formed on the screen. Find the focal length of the lens.</p>	
39.	<p>If an object is placed at a distance of 20 cm from the pole of a concave mirror, the magnification of its real image is 3. If the object is moved away from the mirror by 10 cm, find the decrease in its image magnification.</p>	
40.	<p>The refractive index of glass is $\sqrt{2}$. Find the angle of minimum deviation produced by an equilateral prism made of this glass.</p>	
Section-C Chemistry		
Give one word for the following:		
41.	<p>Name the salt that is used in black and white photography.</p>	

42.	Name the gas that can be used for the storage of fresh sample of chips for a long time.			
43.	Why do articles made from silver lose their shine after some time?			
	Fill in the missing data in the following table.			
	Name of the salt	Formula		
	Base	Acid		
44.	Ammonium chloride	NH_4Cl		
		NH_4OH		
45.	Copper sulphate	-----		
		$Cu(OH)_2$		
		H_2SO_4		
44.				
45.				
46.	What is the colour of the precipitate formed, when solution of lead (II) nitrate and potassium iodide mix together?			
47.	Match the chemical substances given in Column: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> Column (A) (1) Bleaching powder (2) Baking soda (3) Borax (4) Sodium chloride (a) 1-(ii), 2-(i), 3-(iv), 4-(iii) (a) 1-(iii), 2-(iv), 3-(i), 4-(ii) </td> <td style="width: 50%; vertical-align: top;"> Column (B) (i) Constituent of glass (ii) Production of H_2 and Cl_2 (iii) De-colourization (iv) Antacid (b) 1-(iii), 2-(ii), 3-(iv), 4-(i) (b) 1-(ii), 2-(iv), 3-(i), 4-(iii) </td> </tr> </table>		Column (A) (1) Bleaching powder (2) Baking soda (3) Borax (4) Sodium chloride (a) 1-(ii), 2-(i), 3-(iv), 4-(iii) (a) 1-(iii), 2-(iv), 3-(i), 4-(ii)	Column (B) (i) Constituent of glass (ii) Production of H_2 and Cl_2 (iii) De-colourization (iv) Antacid (b) 1-(iii), 2-(ii), 3-(iv), 4-(i) (b) 1-(ii), 2-(iv), 3-(i), 4-(iii)
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48.	Which metal is the best conductor of electricity?			
49.	The atomic number of element X is 8 and that of element Y is 12. Write the symbols of the ions that are expected to be formed from these?			
	Complete the following reactions?			
50.	$ZnO(s) + 2HCl(aq) \rightarrow$ _____ + _____			

51.	$Al_2O_3(s) + 2NaOH(aq) \rightarrow \text{_____} + \text{_____}$	
52.	What is the maximum number of electron pairs that can be shared between two bonding atoms?	
53.	Write the IUPAC names of the following compounds. $CH_3 - CH - CH_2 - CH_3$ (i) $\begin{array}{c} \\ CH_3 \end{array}$ (ii) C_3H_6	
54.	Why are unsaturated hydrocarbons named so?	
55.	Write the chemical reaction involved in the following conversion: Ethanol to Ethene	
Section-D Biology		
56.	What causes movement of food inside the alimentary canal?	
57.	Name the enzyme produced by wall of stomach to digest protein present in food.	
58.	Name plant hormone that inhibit growth and promote wilting in plants.	
59.	Name the part of brain which control: (i) Voluntary action (ii) Involuntary action	
60.	Specify the blood component that aids in the development of a blood clot in the case of a wound.	
61.	In the following food chain, 100 J of energy is available to the lion. How much energy was available to the producers? Plants → Deer → Lion	

62.	<p>A green stemmed rose plant denoted by GG and a brown stemmed rose plant denoted by gg are allowed to undergo a cross with each other.</p> <p>(i) List your observations regarding :</p> <p>(a) Colour of stem in their F₁ progeny</p> <p>(b) Percentage of brown stemmed plants in F₂ progeny if plants are self pollinated.</p>	
63.	<p>Name the causative agent of the disease “kala-azar” and its mode of asexual reproduction.</p> <p>(i) Name the following:</p> <p>(a) Thread like non-reproductive structures present in Rhizopus.</p> <p>(b) ‘Blobs’ that develop at the tips of the non-reproductive threads in Rhizopus.</p>	
64.	<p>Write a and b in the given flow chart of neuron through which information travels as an electrical impulse.</p> <div style="text-align: center;">  <pre> graph LR A[Dendrite] --> B[a] B --> C[b] C --> D[End point of Neuron] </pre> </div>	
65.	<p>Name the blood vessels which carry</p> <p>(i) Deoxygenated blood to heart from lungs.</p> <p>(ii) Oxygenated blood from lungs to heart.</p>	

Section-D
English

Read the following passage and answer the following.

We have but one method of acquiring knowledge. From the lowest man to the highest yogi, all have to use the same method, and that method, is called concentration. The chemist who works in his laboratory concentrates all the powers of his mind, brings them into one focus and throws them on the elements, and the elements stand analysed, and thus his knowledge comes. The astronomer also concentrates the powers of his mind and brings them into one focus and then

throws them on to objects through his telescope and stars and systems roll forward and give up their secrets to him. So it is in every case—with the professor in his chair, the students and his books—with every man who is working to know.

The more this power of concentration is, the more is the knowledge acquired, because this is the one and the only method of acquiring it. Even the lowest shoeblick, if he pays more concentration, will polish shoes better; the cook with his concentration will focus all his attention on the work in hand and will cook a better meal. In making money or in worshipping God, or in doing anything, the stronger the power of concentration, the better will be that work done.

Even though concentration is the key to acquiring knowledge—Concentration itself is not easy to attain. It is a skill that can be developed only through a lot of patience and practice. He who masters it is real 'yogi'. To control our senses and to gather all our awareness into one focus is by no means an easy task. Life itself is complex and there are invariably several issues vying for our attention which makes it even more difficult to focus on only one thing. Even if we try to concentrate fully on the work in hand, our subconscious mind is scattered in varied directions and soon drags our conscious mind along, without even our realizing it. It therefore requires a lot of discipline, will power and self-control to focus or concentrate.

However, the effort is worth it and pays rich dividends in the form of accomplishment of our goals. This is the one call, the one knock which opens the gate of nature, and lets out floods of light.

Answer the following questions:

66.	What is the pre-requisite for acquiring knowledge?	
67.	Why is concentration so difficult to attain?	
68.	Which word in the passage means 'unchangingly'? (a) invariably (b) varied (c) vying (d) various	
69.	The passage deals with methods of: (a) acquiring knowledge (b) being a yogi (c) meditation (d) concentration	

