



MACRO VISION ACADEMY, BURHANPUR

Sample Paper

Class: XI (B)

Mathematics Stream

Time 2:00 Hrs. M.M.: 100

Office Use

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

City:- _____ Mobile No:- _____ Exam Date:- _____

Studying in Class:- _____ Appearing for Class:- _____ Board:- MP/CBSE/Other _____

Mathematics (50)	Physics (15)	Chemistry (15)	English (20)	OBTAINED MARKS (100)

Mathematics (50)		
❖	For what value of k, 3 is a zero of the polynomial $2x^2 + x + k$? Ans.	1
❖	What is the value of $(1 + \cot^2 \theta) \sin^2 \theta$? Ans.	1
❖	If $\frac{4}{5}, a, 2$ are three consecutive terms of an A.P., then find the value of a. Ans.	1

❖	<p>What is the distance between the points A (c, 0) and B (0, -c)? Ans.</p>	1
❖	<p>State Pythagoras theorem and its converse. Ans.</p>	1
❖	<p>Divide the polynomial $f(x) = 3x^2 - x^3 - 3x + 5$ by the polynomial $g(x) = x - 1 - x^2$. Ans.</p>	2
❖	<p>Evaluate $\frac{\sin 60^\circ}{\cos^2 45^\circ} - \cot 30^\circ + 15 \cos 90^\circ$ Ans.</p>	2

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❖	<p>Compute the mode for the following frequency distribution:</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 10%;">Size of items:</td> <td style="width: 5%;">0-4</td> <td style="width: 5%;">4-8</td> <td style="width: 5%;">8-12</td> <td style="width: 5%;">12-16</td> <td style="width: 5%;">16-20</td> <td style="width: 5%;">20-24</td> <td style="width: 5%;">24-28</td> <td style="width: 5%;">28-32</td> <td style="width: 5%;">32-36</td> <td style="width: 5%;">36-40</td> </tr> <tr> <td>Frequency:</td> <td>5</td> <td>7</td> <td>9</td> <td>17</td> <td>12</td> <td>10</td> <td>6</td> <td>3</td> <td>1</td> <td>0</td> </tr> </table> <p>Ans.</p>	Size of items:	0-4	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40	Frequency:	5	7	9	17	12	10	6	3	1	0	2
Size of items:	0-4	4-8	8-12	12-16	16-20	20-24	24-28	28-32	32-36	36-40														
Frequency:	5	7	9	17	12	10	6	3	1	0														

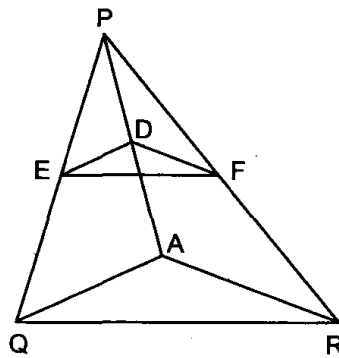
❖	<p>How many number of two digit number are divisible by 3?</p> <p>Ans.</p>	2
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❖	<p>In a circle of radius 21 cm, an arc subtends an angle of 60° at the centre. Find the area of the sector formed by the arc</p> <p>Ans.</p>	2
❖	<p>Use Euclid's division algorithm to find the HCF of 4052 and 12576.</p> <p>Ans.</p>	3

❖ Six years hence a man's age will be three times the age of his son and three years ago he was nine times as old as his son. Find their present ages.
Ans.

3

❖ If $DE \parallel AQ$ and $DF \parallel AR$. Prove that $EF \parallel QR$.



Ans.

3

❖	If a hexagon ABCDEF circumscribes a circle, prove that $AB + CD + EF = BC + DE + FA$ Ans.	3

❖	<p>The shadow of a tower standing on a level ground is found to be 40 m longer when Sun's altitude is 30° than when it was 60°. Find the height of the tower.</p> <p>Ans.</p>	3
❖	<p>Prove that: $\frac{\tan \theta + \sec \theta - 1}{\tan \theta - \sec \theta + 1} = \frac{1 + \sin \theta}{\cos \theta}$</p> <p>Ans.</p>	5

❖	<p>O Girl! Out of a group of swans, $\frac{7}{2}$ times the square root of the number are playing on the shore of a tank. The two remaining ones are playing, with amorous fight, in the water. What is the total number of swans?</p> <p>Ans.</p>	5

❖	Two opposite vertices of a square are $(-1, 2)$ and $(3, 2)$. Find the coordinates of other two vertices. Ans.	5
❖	A toy is in the form of a cone mounted on a hemisphere of radius 3.5 cm. The total height of the toy is 15.5 cm find the total surface area and volume of the toy. Ans.	5

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Physics (15)

❖	<p>A 4 Ω resistance wire is doubled on itself. Calculate the new resistance of the wire.</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	3
❖	<p>Describe an experiment with a diagram to show that force is exerted on a current carrying conductor when placed perpendicular in a magnetic field.</p> <p>Ans.</p> <p>.....</p>	3

	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	
❖	<p>Why hydrogen is considered a cleaner fuel as compared to CNG?</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	3
❖	<p>➤ Define principal focus of a concave mirror.</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>➤ Why do we prefer a convex mirror as a rear view mirror in vehicles?</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>➤ We wish to obtain an erect image of an object using a convex lens. Draw a ray diagram to show the image formation in this case.</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	3
❖	<p>State the cause of dispersion, when white light enters a glass prism. Explain with a diagram.</p> <p>Ans.</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	3

Chemistry (15)

❖	<p>➤ Write the balanced chemical equations for the following reactions.</p> <p>i) Calcium hydroxide + Carbon dioxide → Calcium carbonate + Water Ans.</p> <p>.....</p> <p>ii) Zinc + Silver nitrate → Zinc nitrate + Silver Ans.</p> <p>.....</p> <p>➤ Explain the following terms-</p> <p>i) Oxidation Ans.</p> <p>.....</p> <p>ii) Reduction Ans.</p> <p>.....</p>	3
❖	<p>State reason for the following statements:</p> <p>➤ For a dilution of sulpheric acid, acid is added into water and not water into acid. Ans.</p> <p>.....</p> <p>➤ Ammonia is a base but does not contain hydroxyl group. Ans.</p> <p>.....</p> <p>➤ Common salt becomes sticky during the rainy season. Ans.</p> <p>.....</p>	3
❖	<p>Give reasons:</p> <p>➤ Platinum, gold and silver are used to make jewellery. Ans.</p> <p>.....</p> <p>.....</p> <p>➤ Sodium, potassium and lithium are stored under oil. Ans.</p> <p>.....</p> <p>.....</p> <p>➤ Aluminum is highly reactive metal, yet it is used to make utensils for cooking. Ans.</p> <p>.....</p> <p>.....</p>	3

	<p>“My quarry. A man’s cub went this way,” said Shere Khan. “Its parents have run off. Give it to me.”</p> <p>➤ Why did Father Wolf drop on his haunches?</p> <p>Ans.</p> <p>.....</p> <p>➤ Why did he stop in the middle of his jump?</p> <p>Ans.</p> <p>.....</p> <p>➤ What did a man’s club look like?</p> <p>Ans.</p> <p>.....</p> <p>➤ What did it do to keep itself warm?</p> <p>Ans.</p> <p>.....</p> <p>➤ What is meant by the word ‘bold’? (para 3)</p> <p>Ans.</p> <p>.....</p>	
❖	<p>Fill in any four of the blanks in the sentences given below choosing the most appropriate options from the ones that follow.</p> <p>A. Can this situation be (a) by you?</p> <p>B. Walking daily (b) is many ways.</p> <p>C. A thunderstorm often (c) milk sour.</p> <p>D. I (d) speak Gujarati fluently when I was just 5 years old.</p> <p>a) (i) control (ii) controlled (iii) will control (iv) controls</p> <p>b) (i) will help (ii) has helped (iii) helps (iv) help</p> <p>c) (i) has turned (ii) turn (iii) turning (iv) turns</p> <p>d) (i) will (ii) could (iii) can (iv) would</p>	4
❖	<p>Rearrange any four of the following word clusters to make meaningful sentences.</p> <p>➤ into/doorway/he/an arched/ducked</p> <p>Ans.</p> <p>.....</p> <p>➤ reached/and/a tunnel/into/instead</p> <p>Ans.</p> <p>.....</p> <p>➤ stories/loved/my/telling/me/grandfather</p> <p>Ans.</p> <p>.....</p>	3
❖	<p>Change the following sentence passive voice.</p> <p>➤ He his singing a song.</p> <p>Ans.</p> <p>.....</p> <p>➤ We were celebrating diwali.</p> <p>Ans.</p> <p>.....</p>	2

