

**BCM SCHOOL, BASANT AVENUE, DUGRI, LUDHIANA.**  
**NOVEMBER ANSWERKEY (2024-25)**  
**CLASS- IX (MATHEMATICS)**  
**TOPIC- SURFACE AREA AND VOLUME & STATISTICS**

**SECTION –A (MULTIPLE CHOICE QUESTIONS)**

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| 1. | (c) class marks of the classes                     |
| 2. | (a) 5-8  |
| 3. | (a) 9:4  |
| 4  | (c) Assertion (A) is true but Reason (R) is false. |

**SECTION – B( 2 MARKS QUESTIONS)**

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| 5. | Let the slant height be l<br>CSA of cone = 10 l<br>$\pi r l = 10 l$<br>$r = 70/22$<br>$d = 2 \times 70/22 = 70/11 = 6.36 \text{ cm.}$  |
| 6. | Class size = 42-37 = 5<br>Last class mark = 57<br>Lower limit= class mark – (class size/2)<br>$= 57 - (5/2)$<br>$= 54.5$<br>Upper limit = class mark + ( Class size /2)<br>$= 57 + (5/2)$<br>$= 59.5$<br>Last class interval = 54.5-59.5 |
| 7. | Slant height= $\sqrt{h^2 + r^2} = 20 \text{ cm}$<br>Total surface area = $\pi r(l + r)$  |

**SECTION – C (3 MARKS QUESTIONS)**

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| 8. | As three metallic spheres are melted and recast into a single solid sphere, the sphere formed by recasting these three spheres will have the same volume equal to the sum of the volumes of the three cubes.<br>Let the radius of the resulting sphere be r.<br>Volume of the resulting sphere = Sum of the volumes of three spheres<br>$\frac{4}{3} \pi r^3 = \frac{4}{3} \pi r_1^3 + \frac{4}{3} \pi r_2^3 + \frac{4}{3} \pi r_3^3$<br>$r^3 = [r_1^3 + r_2^3 + r_3^3]$<br>$r^3 = [216 + 512 + 1000]$<br>$r^3 = 1728 \text{ cm}^3$<br>$r = 12 \text{ cm}$<br>Therefore, the radius of the sphere so formed will be 12 cm. |
| 9. | Let radius = 4x and height= 3x<br>Volume= 2156 cm <sup>3</sup>   |

$$\begin{aligned} \frac{1}{3} \pi r^2 h &= 2156 \\ \text{On solving, } x^3 &= 343/8 \\ x &= 7/2 \\ \text{radius} &= 14 \text{ cm, } h = 10.5 \text{ cm} \\ l &= \sqrt{h^2 + r^2} = \sqrt{126.25} \\ l &= 17.5 \\ \text{Curved surface area} &= \pi r l \\ &= 770 \text{ cm}^2 \end{aligned}$$

SECTION – D (5 MARKS QUESTIONS)

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| 10. | <p>Surface area to be painted = CSA of outer hemisphere+ CSA of inner hemisphere+<br/> + Area of ring<br/> <math>= 2 \pi R^2 + 2 \pi r^2 + \pi (R^2 - r^2)</math><br/> <math>= 3 \pi R^2 + \pi r^2</math><br/> <math>= \pi (3 (12.5)^2 + (12)^2)</math><br/> <math>= 1925.78 \text{ cm}^2</math></p> <p>Cost of painting @ ₹ 0.05 = <math>1925.78 \times 0.05</math><br/> = ₹ 96.29 ( approx)</p> |
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