

**CLASS 9- MATHEMATICS
PERIODIC TEST 2 (2024-25)
SET A**

**M.M : 20
TIME : 1HR**

SECTION A

[1X4=4]

- In the class intervals 10-20, 20-30, 20 is included in which interval?
 a) 10-20 b) 20-30 c) Both the intervals d) None of the intervals
- The radius of a sphere is $2r$, then its volume will be
 a) $\frac{4}{3} \pi r^3$ b) $4 \pi r^3$ c) $\frac{8}{3} \pi r^3$ d) $\frac{32}{3} \pi r^3$
- In a frequency distribution, the mid value of a class is 10 and the width of the class is 6. The lower limit of the class is
 a) 6 b) 7 c) 8 d) 12

4. **ASSERTION:** The curved surface area of a cone of base radius 3 cm and height 4 cm is $15\pi \text{ cm}^2$.

REASON: Curved surface area of a cone with radius r and height $h = \pi r^2 h$

- Both Assertion and Reason are true and Reason is the correct explanation of Assertion.
- Both Assertion and Reason are true but Reason is not the correct explanation of Assertion.
- Assertion (A) is true but Reason (R) is false.
- Assertion (A) is false but Reason (R) is true.

SECTION B

[3X2=6]

5. Prepare an adjusted frequency table for the given data:

Class Interval	0-20	20-30	30-50	50-70	70-100
Frequency	6	17	12	16	24

6. Construct a frequency table for the following ages (in years) of 20 students using equal class intervals, one of them being 10-15.

13, 12, 7, 6, 11, 15, 21, 9, 8, 13, 15, 17, 22, 14, 14, 21, 23, 8, 12, 7.

7. Find the volume of a sphere whose surface area is 154 cm^2 .

SECTION C

[3X2=6]

8. The following frequency table gives the information of the time taken by the students to solve a problem. Draw a histogram and a frequency polygon to represent this data.

Time (in mins)	15-25	25-35	35-45	45-55	55-65
No. of students	8	12	16	6	4



9. A hemispherical dome of a building needs to be painted. If the circumference of the base of the dome is 17.6 m, find the cost of painting it, given the cost of painting is ₹5 per 100 cm^2 . *2400*

SECTION D (CASE STUDY)

10. Winnowing is the method in which heavier components of the mixture are separated from the lighter substances with the help of wind. This method is used for separating grains from husk after the process of threshing.



After completing the winnowing process, a woman farmer found that the diameter of the conical heap of wheat so formed is 14 m and height is 3 m.

On the basis of the above information, answer the following questions

1. How much volume of wheat is collected by the woman farmer? *volume* [1]
2. How many square metres of canvas is required to protect the heap of wheat from rain? [2]
3. What is the cost of covering this heap if the canvas is purchased at the rate of ₹ 45 per m^2 ? [1]