

SATISH CHANDRA MEMORIAL SCHOOL
PERIODIC TEST-I/ PREMID EXAMINATION (2026-27)
CLASS VIII
MATHEMATICS

Time Allowed: 1 hr 30 min

Maximum Marks: 40

GENERAL INSTRUCTIONS:

- All questions are compulsory.
- The question paper consists of **26 questions** divided into **three sections A, B and C.**
- Section A comprises of **20 MCQs** of **1 mark each.**
- Section B comprises of **2 Case studies** of **5 marks each** (MCQ based 5 question for each Case Study)
- Section C comprises of **4 questions.** (Marks: 2+2+2+4)
- Use of calculator is not allowed.
- Draw neat and clean figures wherever required.

SECTION A

1. How many natural numbers lie between 47^2 and 48^2 ?
(A) 95 (B) 97 (C) 94 (D) 99

2. The value of $\sqrt{176 + \sqrt{2401}}$ is
(A) 14 (B) 15 (C) 16 (D) 17

3. Which of the following is not a perfect square ?
(A) 361 (B) 1156 (C) 1128 (D) 1681

4. A square board has an area of 144 square units. How long is each side of the board?
(A) 15 (B) 60 (C) 12 (D) 13

5. Find the sum of $1+3+5+7+9+11+13+15+17+19+21$ is
(A) 144 (B) 169 (C) 121 (D) 194

6. Which of the following numbers is a perfect cube?
(A) 243 (B) 216 (C) 8640 (D) 392

7. Given that $\sqrt{4096}=64$ then the value of $\sqrt{4096} + \sqrt{40.96}$ is
(A) 74 (B) 60.4 (C) 64.4 (D) 70.4

8. The least number by which 125 be multiplied to make it a perfect square is
(A) 3 (B) 7 (C) 5 (D) 2

9. Which of the following statements is incorrect ?
 (A) If square of a number ends in 9 , then its cube always ends in 1
 (B) If cube of a number ends in 2 , then its square ends in 4
 (C) The cube of a 2 -digit number can have a maximum of 6 digits
 (D) If the unit digit of a number is 2 or 3 or 7 or 8 then it is a non perfect square number .
10. The value of $(-5)^{-5} \times (-5)^{19}$ is equal to
 (A) $(-5)^{24}$ (B) 5^{14} (C) $(-5)^{19}$ (D) 5^{-14}
11. $(4)^9 \times (-7)^9$ is equal to
 (A) $(-7)^9$ (B) $(-7)^{18}$ (C) $(-28)^9$ (D) 28^9
12. The value of the expression $(8^0 - 3^0) \times (8^0 + 3^0)$ is
 (A) 0 (B) 5 (C) 8 (D) 1
13. The multiplicative inverse of $(-\frac{5}{9})^{-99}$ is
 (A) $(-\frac{5}{9})^{99}$ (B) $(\frac{5}{9})^{99}$ (C) $(\frac{9}{-5})^{99}$ (D) $(\frac{9}{5})^{99}$
14. If $(2^{3x-1} + 10) \div 7 = 6$, then the value of x is
 (A) 2 (B) 0 (C) -2 (D) 1
15. The standard form of 0.00000065 is
 (A) 6.5×10^7 (B) 6.5×10^{-7} (C) 65×10^8 (D) 65×10^{-8}
16. The usual form of 2.03×10^{-5} is
 (A) 0.203 (B) 0.00203 (C) 203000 (D) 0.0000203
17. Roman representation of 1999 is
 (A) MCMXCIX (B) MCMXCV (C) MCMLIX (D) MMCMXC
18. What number does the Roman numeral 'MDCLXVI' represent?
 (A) 1666 (B) 1555 (C) 1777 (D) 1888
19. Assertion(A): $2^{-3} = \frac{1}{2^3}$
 Reason(R): A negative exponent means reciprocal of the base raised to the positive of that exponent, provided the base is non-zero .
 (A) Both A and R are true and R is the correct explanation of A.

- (B) Both A and R are true but R is not the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

20. **Assertion(A):** A square number always has an odd number of factors.

Reason(R): Square numbers have one unpaired factor which is repeated.

- (A) Both A and R are true and R is the correct explanation of A.
- (B) Both A and R are true but R is not the correct explanation of A.
- (C) A is true but R is false.
- (D) A is false but R is true.

SECTION B

21. Case Study:

During an inter-school mathematics camp, students participated in a "Secret Number Vault" challenge. Five lockers were marked with the following numbers:

576, 2197, 729, 3375, 1024

To open each locker, students had to identify whether the number was a perfect square, perfect cube or both.



Based on the above information, answer the following questions:

(i) Which of the following number is both a perfect square and a perfect cube?

- (A) 576 (B) 729 (C) 1024 (D) 2197

(ii) The square root of 576 is

- (A) 26 (B) 34 (C) 36 (D) 24

(iii) The cube root of 3375 is

- (A) 12 (B) 13 (C) 14 (D) 15

(iv) Which statement is correct?

- (A) 1024 is a perfect cube.
- (B) 2197 is a perfect cube but not a perfect square.
- (C) 576 is neither a perfect square nor a perfect cube.
- (D) 729 is only perfect square.

(v) The value of $\sqrt{1024} - \sqrt[3]{2197}$ is

- (A) 17 (B) 18 (C) 19 (D) 20

22. Case study:

A heritage exhibition was organised in the school where students observed that ancient rulers used Roman numerals in inscriptions and monuments. Some important years were written as: CXL, LXXV, XC, CL, LX.

The History teacher asked students to perform mathematical operations using these Roman numerals.



Based on the above information, answer the following questions:

- (i) The sum of CXL and LX is
 - (A) CL
 - (B) CC
 - (C) CXC
 - (D) CCX
- (ii) The product of LXXV and VI is
 - (A) CDL
 - (B) LX
 - (C) CDLX
 - (D) CCCL
- (iii) Which of the following Roman numeral represents the greatest number?
 - (A) XC
 - (B) LXXV
 - (C) CXL
 - (D) CL
- (iv) The Hindu-Arabic numeral of CXL is
 - (A) 130
 - (B) 140
 - (C) 150
 - (D) 160
- (v) Which Roman numeral comes immediately after XCIX?
 - (A) XC
 - (B) IC
 - (C) C
 - (D) CI

SECTION C

23. Evaluate: $\sqrt{2007 + \sqrt{318 + \sqrt{26 + \sqrt{100}}}}$

[2]

24. Represent 3125 in base- 5 system and represent 8328 in Rod numerals.

[2]

25. Solve for x : $2^{x+1} + 2^{x+2} = 48$

[2]

26. The number of students participating in dancing, singing and painting competition in a school fest are in the ratio 1 : 2 : 3. The sum of the cubes of the number of students in the three groups is 4500. Find the number of students in each group. Also find the total number of students participating in all three competitions.

[3 + 1]