

TIME: 1 Hours
 GENERAL INSTRUCTIONS:

- Read the following instructions carefully.
 a) The question paper contains 5 sections A,B,C, D and E.
 b) Section A has 20 MCQ's carrying 01 mark each.
 c) Section B has 5 questions carrying 02 marks each.
 d) Section C has 6 questions carrying 03 marks each.
 e) Section D has 4 questions carrying 04 marks each.
 f) Section E has 3 case based integrated questions of 2 questions of 5 marks, 2 questions of 3 marks and 2 questions of 2 marks has been provided. An internal choice has been provided in the 2 marks questions of section E.
 g) All questions are compulsory. However an internal choice has been provided. An internal choice has been provided in the 2 marks questions of section E.
 h) Draw neat figure wherever required.

SECTION - A

- The value of $\frac{1}{2} \div \frac{3}{5}$ is
 a) $\frac{3}{10}$ b) $\frac{3}{5}$ c) $\frac{6}{5}$ d) $\frac{5}{6}$
- Three consecutive integers add up to 51. The integers are
 a) 16, 17, 18 b) 15, 16, 17 c) 17, 18, 19 d) 18, 19, 20
- What is the sum of all exterior angles of a triangle?
 a) 180° b) 560° c) 540° d) 720°
- A square board has an area of 144 square units. How long is each side of the board?
 a) 11 units b) 12 units c) 13 units d) 14 units
- Which of the following is not a binomial?
 a) $m + n$ b) mn c) $m-n$ d) $m^2 - n^2$
- The square of an odd number is always ____
 a) odd b) even c) both a) & b) d) none of these
- In a _____, the various observations are represented by the sectors of a circle and the whole circle represents the sum of the values of all components.
 a) Bar graph b) line graph c) pie chart d) Histogram
- The sum of first seven odd consecutive numbers is equal to
 a) 5^2 b) 11^2 c) 7^2 d) 7^3
- What is the minimum interior angle possible for a regular polygon?
 a) 50° b) 30° c) 40° d) 60°
- If the length of a rectangle is $14ab$ and its breadth is $23abc$ then its area is
 a) $14a^2b^2$ b) $322abc$ c) $322a^2b^2c$ d) none of these
- Which property of a rational number is reflected in the following:
 $\frac{17}{3} \times \frac{7}{5} = \frac{7}{5} \times \frac{17}{3}$
 a) associative b) commutative c) distributive d) closure

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- If one member of pythagorean triplet is 6, then other members are;
 a) 3, 4 b) 8, 5 c) 10, 7 d) 10, 8
- The square of 100 has _____ zeroes
 a) 4 b) 2 c) 12 d) 6
- The probability of getting a number 0 from the set of given numbers:
 {1, 2, 3, 2, 5, 6, 1, 3, 1}
 a) 1 b) 2 c) 3 d) none of these
- The ones place digit in the cube root of 1728.
 a) 8 b) 2 c) 4 d) none of these
- Find a number which is a perfect cube as well as a perfect square.
 a) 8 b) 1000 c) 125 d) 729
- The additive inverse of $1\frac{3}{5}$ is ?
 a) $-\frac{3}{7}$ b) $\frac{5}{7}$ c) $\frac{8}{7}$ d) $-\frac{8}{5}$
- Find the side of a cuboid having a volume $125a^3$
 a) $5a^2$ b) $25a$ c) $125a$ d) $5a$

Direction : In questions 19-20, a statement of assertion is followed by a statement of reason. Select the most appropriate option:
 a) Both A and R are true and R is the correct explanation of A.
 b) Both A and R are true and R is not the correct explanation of A.
 c) A is true but R is false
 d) A is false but R is true

19. Assertion(A) : A monomial multiplied by a monomial always gives a monomial.
 Reason(R) : $(5m^2n^2) \times 12m^2 = 60m^4n^2$

20. Assertion(A) : 1125 is a perfect cube.
 Reason(R) : A perfect cube is a number that can be expressed as the product of an same integer 3 times

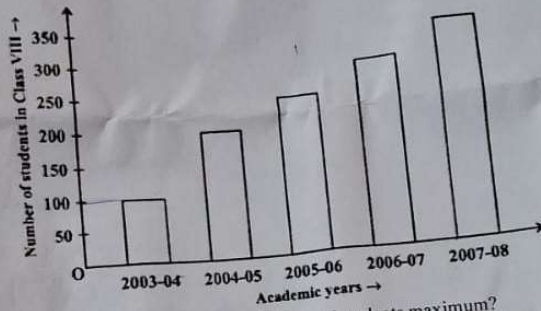
SECTION-B

- Check whether $x = 2$ is a solution of the given equation : $x = \frac{4}{5}(x + 10)$
- Can a quadrilateral PQRS be a parallelogram if:
 i) $\angle P + \angle R = 180^\circ$
 ii) $\angle P = 70^\circ$ and $\angle R = 65^\circ$

OR

Find the number of sides of a regular polygon whose exterior angle has a measure of 45° .

23. Read the bar graph given below carefully and answer the following questions.



- In which year is the increase in the number of students maximum?
- State whether true or false: 'The number of students during 2005-06 is twice that of 2003-2004'

24. Find the square root of 2401.

OR

Find the smallest 3 digit perfect square.

25. Add: $7xy + 5yz - 3zx$, $4yz + 9zx - 4y$, $-3xz + 5x - 2xy$.

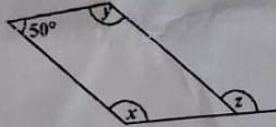
SECTION-C

26. Find: $\frac{2}{5} \times \frac{-3}{7} - \frac{5}{3} - \frac{1}{14} - \frac{3}{7} \times \frac{3}{5}$ (Use properties and name the properties used)

27. Solve and check: $8x + 4 = 3(x-1) + 7$

28. Is 68600 a perfect cube? If not, find the smallest number by which 68600 must be multiplied to get a perfect cube.

29. Consider the following parallelogram. Find the values of the unknowns x, y, z.



30. A bag has 4 red balls and 2 yellow balls. (The balls are identical in all respects other than colour). A ball is drawn from a bag without looking into the bag. What is the probability of getting a red ball? Is it more or less than getting a yellow ball?

OR

When a die is thrown, list the outcomes of an event of getting

- a prime number
- not a prime number
- a number not greater than 5.

31. Find the value of m for which $5^m + 5^{-3} = 5^5$

OR

Evaluate: $\frac{8^{-1} \times 5^3}{2^{-4}}$

SECTION - D

32. Solve: $\frac{6a+1}{3} + 1 = \frac{a-3}{6}$

OR

Solve: $\frac{n}{2} + \frac{3n}{4} + \frac{5n}{6} = 21$

33. i) write 0.0002034 in standard form.
 ii) Simplify and write the answer in positive exponent: $(3^5 + 3^{-6})$
 iii) Find the value of $[(-2)^2 \times 3 - (73)^0]$

34. Simplify: i) $(p^2 - q^2)(2p + q)$
 ii) $(a + b)(2a - 3b + c) - (2a - 3b)c$

OR

Simplify: $p(p^2 + p + 1) + 5$ and find its value for $p = \left(\frac{-1}{2}\right)$

35. The number of students admitted in different faculties of a college are given below.

Faculty	Commerce	Arts	Science	Law	Computer	Total
Number of students	450	300	1200	1000	650	3600

Represent the above information by a pie chart.

SECTION - E

Case study questions:

36. Once a mathematics teacher took a class test of 17 students, out of which 5 students got good marks as a result the teacher bought 24 chocolates for them as a reward. The teacher gave $\frac{5}{12}$ part to the 1st student, $\frac{1}{4}$ part to the 2nd student, $\frac{1}{6}$ part to the 3rd student, $\frac{1}{12}$ part to the 4th student and the remaining chocolates to the 5th student.

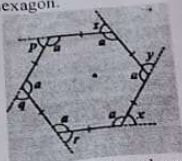
Using given information, answer the following questions:

- How many chocolates did the first child get?
- How many chocolates did the second child get?
- How many chocolates did the 5th student get?

OR

Find the sum of chocolates given to second and the fourth child.

37. Given figure is a regular hexagon.



Answer the following questions, using above information:

- What is the sum of the measures of its exterior angles x, y, z, p, q, r ?
- Is $x = y = z = p = q = r$? why?
- What is the measure of each exterior angle?

OR

What is the measure of each interior angle?

38. During dance practice in school 6570 students of different schools are arranged in rows such that the number of students in each row is equal to the number of rows. In doing so, the instructor finds out that 9 children are left out.

- How many students were left out in the arrangement?
- What is the value depicted from the exercise?
- Find the number of students in each row of the square.

OR

What is the number of students forming a square.