Revision Material

Remembering (1 mark each)

1. The base in the expression 2^3 is:

(a) 2

(b) 3

(c) 6

(d) 8

2. Simplify 5x + 2x:

(a) 7x

(b) 3x

(c) 10x

(d) 2x

Understanding (1 mark each)

5. What is the difference between 2a and a^2?

6. Write the equation for "the sum of x and 5 is 12".

7. Define complementary angles.

8. Which property states that the sum of the angles in a triangle is 180°?

Applying (1 mark each)

9. Evaluate 3^2 x 3^1.

10. Solve the equation: 2x + 5 = 11

11. Find the angle measure if its complementary angle is 45°.

12. What is 15% of 200?

Section B: Short Answer Questions (24 Marks)

Remembering (2 marks each)

14. State two properties of exponents with examples.

15. List the different types of triangles based on angles.

Understanding (3 marks each)

16. Simplify the expression: 2a + 3b - a + 2b

18. Define corresponding angles and illustrate with a diagram.

Applying (4 marks each)

20. In triangle ABC, angle A = 50° and angle B = 65°. Find angle C.

Section C: Long Answer Questions (24 Marks)

Analyzing (4 marks each)

21. Compare and contrast the concepts of exponents and powers with examples.

22. Explain how to solve a linear equation in one variable using an algebraic method.

23. Analyze the properties of triangles and their relationship with the sum of angles.

Evaluating (6 marks)

Section D: Higher Order Thinking Skills (16 Marks)

Creating (8 marks)

25. Formulate an algebraic expression to represent the following situation: "The product of two consecutive odd numbers".

26. Design a real-world application where the concept of percentage is used in daily life.

Evaluating (8 marks)

27. Critically analyze the statement: "All quadrilaterals are squares". Explain your reasoning.

28. Evaluate the importance of understanding powers and exponents in various mathematical applications.

Section A: Multiple Choice Questions (1 Mark Each, Total 16 Marks)

Remembering:

29. What is the value of 2 raised to the power of 3? (a) 6 (b) 8 (c) 12 (d) 16

30. What is the base in the expression 3^4? (a) 3 (b) 4 (c) 12 (d) None of these

Understanding:

33. Simplify the expression 2x + 3x - 5: (a) 5x - 5 (b) x - 5 (c) 5x (d) None of these

34. What is the percentage of 20 out of 50? (a) 20% (b) 40% (c) 60% (d) 80%

Applying:

35. Find the value of 5^2 x 5^1: (a) 25 (b) 30 (c) 60 (d) 125

36. Solve the equation 2x + 5 = 11: (a) x = 2 (b) x = 3 (c) x = 4 (d) x = 5

Analyzing:

38. Why is the base in the expression a^n written raised to the power of n? (a) To show multiplication (b) To show division (c) To show addition (d) To show subtraction

39. Explain the difference between a linear equation and a non-linear equation.

40. How can you use percentages to express parts of a whole?

Evaluating:

41. Compare and contrast the concepts of powers and exponents.

42. Discuss the importance of simplifying algebraic expressions.

43. Why are linear equations useful in real-life applications?

44. Explain the relationship between angles and triangles.

Section B: Short Answer Questions (2 Marks Each, Total 16 Marks)

45. Simplify the expression: 3a + 2b - a + 5b

46. Write 125 in exponential form.

47. Solve the equation: 3x - 4 = 2

48. Find the missing term: x + \_\_\_ = 15, if x = 7

49. What is 25% of 80?

50. If the selling price of a book is ₹120 and there is a 20% profit, what is the cost price?

51. Draw and label an acute angle, a right angle, and an obtuse angle.

52. Identify the type of triangle with angles measuring 60°, 60°, and 60°.

Section C: Long Answer Questions (5 Marks Each, Total 48 Marks)

53. Expand the following using the distributive property: (x + 2)(x - 3)

55. A recipe requires 1/4 cup of sugar for 10 cookies. How much sugar is needed for 25 cookies? (Use unitary method)

57. Construct an equilateral triangle with side length 5 cm using a ruler and compass. (Demonstrate the steps)

58. Write a short note on the different types

Section A: Multiple Choice Questions (16 marks)

Remembering (1 mark each):

59. What is the value of 2 raised to the power 3?

(a) 6

(b) 8

(c) 12

(d) 16

60. Simplify the expression 3x + 5x.

(a) 8x

(b) x^2

(c) 15x

(d) 5x^2

62. 20% of 50 is equal to:

(a) 1

(b) 5

(c) 10

(d) 20

63. In a triangle, the sum of all angles is:

(a) 90°

(b) 180°

(c) 270°

(d) 360°

Understanding (1 mark each):

64. Which of the following expressions is not a monomial?

(a) 3x^2

(b) x + y

(c) -5

(d) xy

65. The equation ax + b = 0 is called a:

(a) quadratic equation

(b) linear equation

(c) cubic equation

(d) exponential equation

66. In a percentage change, a decrease is represented by a:

(a) positive sign

(b) negative sign

(c) fraction

(d) decimal

Section B: Short Answer Questions (24 marks)

Applying (2 marks each):

69. Simplify the expression: 2a + 3b - 2a + 5b.

70. Find the value of 3^2 x 3^1.

71. Solve the equation: 3x - 5 = 14.

Analyzing (3 marks each):

Section C: Long Answer Questions (40 marks)

Evaluating (5 marks each):

78. A company produces 500 pens in a day. If the production increases by 20% the next day, how many pens are produced on the second day?

Creating (5 marks):

79. Formulate an equation to represent the following situation: The sum of three consecutive odd numbers is 45.

80. Construct two triangles, one right-angled and the other obtuse-angled, using a ruler and protractor. Label the corresponding angles and sides in each triangle.

Section A: Multiple Choice Questions (16 marks)

Remembering (1 mark each):

81. Which of the following is the expanded form of 2^3?

(a) 2 x 2 x 2

(b) 2 + 2 + 2

(c) 2 x 3

(d) 3 x 3

82. What is the value of x in the equation 3x + 5 = 14?

(a) 3

(b) 4

(c) 5

(d) 6

83. What is 20% of 50?

(a) 10

(b) 20

(c) 30

(d) 40

84. In a triangle, the sum of all angles is:

(a) 90°

(b) 180°

(c) 270°

(d) 360°

Understanding (1 mark each):

85. Simplify the expression 2x + 3y - x + 2y.

(a) x + 5y

(b) 3x + 5y

(c) x + y

(d) 5x + y

86. Find the missing angle in the following diagram, where p and q are parallel lines.

(Image of parallel lines p and q with a transversal cutting them, forming two congruent angles)

(a) 30°

(b) 60°

(c) 90°

(d) 120°

Section B: Short Answer Questions (20 marks)

Applying (2 marks each):

89. Simplify the following expression using the laws of exponents: (2^3 x 2^2)/(2^4)

90. Solve the equation: 2x + 5 = 11

91. Express 75% as a fraction in its simplest form.

92. Find the angles of a triangle whose measures are in the ratio 2:3:5.

Analyzing (3 marks each):

94. A shopkeeper bought 20 apples for Rs. 100. He sold 12 apples at a profit of 25%. What is the selling price of each apple?

Section C: Long Answer Questions (24 marks)

Evaluating (4 marks each):

95. Simplify the following expression and state the degree of the polynomial: 3x^2 - 2x + 5 + x^2 - 4x + 1

96. The length of a rectangle is 3 cm more than its breadth. If the perimeter of the rectangle is 20 cm, find the length and breadth of the rectangle.

Creating (6 marks each):

97. Represent the following situation using an algebraic expression: The cost of a book increases by Rs. 5 for every 2 books purchased.

98. Construct an equilateral triangle ABC.

Section D: Higher Order Thinking Skills (20 marks)

Problem Solving (10 marks):

Section A: Multiple Choice Questions (16 marks)

Remembering (1 mark each)

101. Simplify 3x + 5x. The answer is: (a) 8x (b) 15x (c) 3x^2 (d) 5x^3

102. In the equation 2x + 5 = 11, what is the value of x? (a) 2 (b) 3 (c) 4 (d) 5

103. 20% of 50 is equal to: (a) 1 (b) 5 (c) 10 (d) 20

105. The sum of the angles in a triangle is: (a) 90 degrees (b) 180 degrees (c) 270 degrees (d) 360 degrees

106. Which of these is NOT a property of an equilateral triangle? (a) All sides are equal. (b) All angles are equal. (c) Opposite angles are equal. (d) One angle is a right angle.

Understanding (1 mark each)

108. Express 7 x 7 x 7 in the exponential form.

110. Simplify 3a + 2b – 3a + 4b.

111. Solve the equation: 3x - 5 = 10

112. Find the profit or loss if the cost price is Rs. 40 and the selling price is Rs. 50.

113. Identify the type of angle formed by two intersecting lines that are perpendicular.

114. What is the name of a triangle with two equal angles?

Section B: Short Answer Questions (20 marks)

Applying (3 marks each)

115. Simplify: 2^3 x 2^2

116. Find the value of x in the equation: 4x + 2 = 18

117. A mobile phone costs Rs. 12000. If the discount is 10%, find the amount to be paid.

118. Draw an angle of 60 degrees and an angle of 135 degrees.

Analyzing (4 marks each)

119. Simplify and arrange like terms: 3x + 2y – 5x + y – 1

120. In a right-angled triangle, one acute angle is 45 degrees. What is the measure of the other acute angle?

Section C: Long Answer Questions (24 marks)

Evaluating (4 marks each)

121. Solve the equation: 3(x + 2) = 15

Creating (6 marks each)

123. Form an algebraic expression for the following: The sum of three consecutive odd numbers.

124. Construct an equilateral triangle ABC. Draw the perpendicular bisectors of AB and AC. Where do these bisectors intersect?

Section D: Higher Order Thinking Skills (20 marks)

Problem-solving (10 marks)

125. A train covers 180 km in 3 hours. Find the speed of the train in km/hr and m/sec.

Connection (5 marks each)

126. Explain how the concept of exponents is used in expressing very large numbers in scientific notation.

127. Describe a real-life situation where you can apply the concept of percentage.

Section A: Multiple Choice Questions (16 marks)

Remembering (1 mark each):

128. What is the value of 2 raised to the power 3?

(a) 6

(b) 8

(c) 12

(d) 16

129. Simplify 5x + 3x - 2x:

(a) 10x

(b) 6x

(c) 4x

(d) 0

130. The equation 3x + 5 = 14 has the solution:

(a) 3

(b) 4

(c) 5

(d) 6

131. 20% of 50 is:

(a) 5

(b) 10

(c) 15

(d) 20

133. In a triangle, the sum of all angles is:

(a) 90°

(b) 180°

(c) 270°

(d) 360°

Understanding (1 mark each):

134. Which of the following expressions is not a monomial?

(a) 2x

(b) x + y

(c) 3x^2

(d) -5

135. What does the variable x represent in the equation 2x + 5 = 11?

(a) A constant value

(b) An unknown number

(c) The sum of two numbers

(d) The difference of two numbers

136. What percentage of 40 is 12?

(a) 10%

(b) 20%

(c) 30%

(d) 40%

Section B: Short Answer Questions (24 marks)

Applying (2 marks each):

140. Simplify the following expression: 3x + 2y - 5x + y

141. Solve the equation: 2x + 3 = 9

142. Find 15% of 80.

143. Identify the type of angle formed by two intersecting lines that are perpendicular.

144. Find the missing angle in a triangle if the other two angles measure 50° and 70°.

Analyzing (3 marks each):

146. Simplify the expression: (2x^2 - 3x) + (x^2 + 5x)

147. The cost of a book is increased by 10%. If the new price is ₹165, find the original price.

Section C: Long Answer Questions (24 marks)

Evaluating (4 marks each):

148. Expand the following using the distributive property: (x + 2)(x - 3)

149. Solve the following pair of linear equations:

x + y = 7

2x - y = 3