MONTFORT SR. SEC. SCHOOL, AMBIKAPUR

ANNUAL EXAMINATION – 2020-21

CLASS – VIII SUBJECT – MATHEMATICS M.M. – 80

SECTION – A

1. **FILL IN THE BLANKS** : **[5]**
   (a) The additive inverse of $\frac{21}{112}$ is …… .
   (b) The reciprocal of a positive rational number is ….. ..
   (c) (x + a) (x + b) = ….. .
   (d) 1 cubic mm = …….. .
   (e) ……. is used to compare parts of a whole.

2. **TRUE / FALSE** **[5]**
   (a) Histogram is a bar graph that shows data in intervals.
   (b) In $\frac{x_1}{x_2} = \frac{y_2}{y_1}$, x and y are in direct proportion.
   (c) $a^m \div a^n = a^{m-n}$.
   (d) Chances and probability are related to real life.
   (e) All rectangles are square.

3. **MULTIPLE CHOICE QUESTIONS** **[5]**
   (i) The rational number that does not have a reciprocal is (a) 0 (b) 1 (c) both (d) - 1
   (ii) The rational number that is equal to its negative is (a) 1 (b) 0 (c) both (d) - 1
   (iii) Name the quadrilateral whose diagonals are equal (a) rhombus (b) trapezium (c) rectangle (d) parallelogram
   (iv) The number of zeroes in the square of 400 is (a) 6 (b) 4 (c) 8 (d) 2
   (v) The value of a^0 is (a) 0 (b) 1 (c) - 1 (d) None of these

4. **VERY SHORT ANSWER TYPE QUESTIONS** : **[5]**
   (a) What is line graph ?
   (b) In the case of division of algebraic expressions, dividend = …… .
   (c) Find the common factors of the given terms : 10 pq, 20 qr, 30 rp
   (d) The population of a country and the area of land per person. The given statement is in inverse proportion or direct proportion ?
   (e) Find the side of a cube whose surface area is 600 cm^2.

SECTION – B (2× 5 = 10)

5. Find five rational numbers between $\frac{1}{4}$ and $\frac{1}{2}$.
6. Solve 4z + 3 = 6 + 2z .
7. Explain why rectangle is a convex quadrilateral ?
8. Express 121 as the sum of 11 odd numbers.

9. Find the area of a rhombus whose diagonals are of lengths 10 cm and 8.2 cm.

SECTION – C (3 × 6 = 18)

10. Find and correct the errors : $(3x + 2)^2 = 3x^2 + 6x + 4$.
11. In a model of a ship, the mast is 9 cm high, while the mast of the actual ship is 12 m high. If the length of the ship is 28 m, how long is the model of the ship ?
12. Express 4^{-3} as a power with the base 2.
13. Show that $(3x + 7)^2 - 84x = (3x - 7)^2$.
14. Parikshit makes a cuboid of plasticine of sides 5 cm, 2 cm and 5 cm. How many such cuboids will he need to form a cube ?
15. The ages of Hari and Harry are in the ration 5 : 7. Four years from now the ratio of their ages will be 3 : 4. Find their present ages.

SECTION – D (4 × 8 = 32)

16. On a particular day, the sales (in rupees) of different items of a baker's shop are given below :

Ordinary bread	Fruit bread	Cakes& Pastries	Biscuits	Others	Total
320	80	160	120	40	720

Draw a pie chart for this data.

17. When a die is thrown, list the outcomes of an event of getting
    (a) a prime number
    (b) not a prime number
    (c) a number greater than 5
    (d) a number not greater than 5.
18. Is 2352 a perfect square ? If not, find the smallest multiple of 2352 which is a perfect square. Find the square root of the new number.
19. Simplify (i) $(x^2 - 5)(x + 5) + 25$ (ii) (a + b + c) (a + b – c)
20. Water is pouring into a cuboidal reservoir at the rate of 60 litres per minute. If the volume of reservoir is 108 m^3. Find the number of hours it will take to fill the reservoir.
21. Express the following numbers in usual form
    (i) 3.02×10^{-6}
    (ii) 5.8×10^{12}
    (iii) 3×10^{-8}
    (iv) 1.001×10^{9}
22. Factorize the expression and divide as directed : $(m^2 - 14m - 32) \div (m + 2)$
23. Plot the following points and verify if they lies on a line. If they lie on a line, name it.
    A(1, 1), B(1, 2), C(1, 3) and D(1, 4).