# AMRITA VIDYALAYAM

## ANNUAL EXAMINATION 2017 - '18

**Class : VIII** **Marks : 80**

**Time : 2½ hrs**

# MATHEMATICS

*General Instructions:*

i. All questions are compulsory.

ii. This question paper consists of four sections

Section A : Q.1 to 6 (1 mark each)

Section B : Q. 7 to 12 (2 marks each)

Section C : Q : 13 to 22 (3 marks each)

Section D : Q 23 to 30 (4 marks each)

iii) Use of calculator is not permitted

## SECTION - A

1. The multiplicative identity for rationa lnumbers is _____.
   a) 0 b) 1 c) 1.1 d) None of these
2. Solution of $6 = x + 2$ is $x =$ _____.
   a) 4 b) - 4 c) 3 d) None of these
3. What will be the one's digit in the square of the number 52698?
   a) 8 b) 4 c) 6 d) 2
4. Area of a rhombus whose diagonals are of lengths $d_1$cm and $d_2$cm is _____.
   a) ½ h $(d_1 + d_2)$ b) ½ $\times d_1 \times d_2$
   c) ½ $(d_1 + d_2)$ d) $d_1 \times d_2$
5. Find $(2 \times 3^0 \times 5^2)^0$.
   a) 30 b) 50 c) 150 d) 1
6. The common factor of $2x$, $4x^2$ and $18x^3$ is _____.
   a) 2 b) $2x^2$ c) $2x$ d) $x$

## SECTION - B

7. Construct a quadrilateral ABCD with AB = 4cm, BC = 6cm,

CD = 5cm, AD = 5.5cm and AC = 7cm.

8. Find the ratio of 50 paise to ` 5.
9. Find the product $(4p^2 + 5P + 7) \times 3p$.
10. Find the side of a cube whose surface area is 600 $cm^2$.
11. Find 'm'so that $(-3)^{m+1} \times (-3)^5 = (-3)^7$.
12. Factorise 15xy - 6x + 5y - 2.

## SECTION - C

13. Write six rational numbers between $\frac{-1}{5}$ and $\frac{2}{3}$.
14. Solve and check your solution.
    $5x + \frac{7}{2} = \frac{3x}{2} - 14$
15. Aman purchased some tables at ` 70 each and some chairs at ` 45 each. If the total pieces of furniture purchased are 13 and their total cost is ` 760, find how many tables and how many chairs did he buy?
16. Define.
    a) VAT b) Sales Tax c) Discount
17. A vegetable dealer buys 6 bags of potatoes and pays ` 2,200 as cost to the whole sale dealer. He pays ` 600 for transportation. He wishes to earn a profit of 30% on selling the six bags of potatoes. Find the selling price of the 6 bags of potatoes.
18. Simplify $3x(4x - 5) + 3$ and find its values for a) $x = 5$ b) $x = \frac{1}{2}$
19. The adjacent sides of a rectangle are $-6p^3 + 7p^2q^2 + pq$ and $7pq - 5p^3 + 9p^2q^2$. Find its perimeter.
20. A godown is in the form of a cuboid of measures $60m \times 40m \times 30m$. How many cuboidal boxes can be stored in it if the volume of one box is 0.8 $m^3$.
21. Simplify $\frac{3^{-5} \times 10^{-5} \times 125}{5^{-7} \times 6^{-5}}$
22. Divide $12xy(9x^2 - 16y^2)$ by $4xy(3x + 4y)$.

## SECTION - D

23. The denominator of a rational number is greater than its numerator by 8. If the numerator is increased by 17 and the denominator is decreased by 1, the number obtained is 3/2. Find the rational number.
24. Construct a rhombus whose diagonals are 5.2cm and 6.4cm long. Write the steps of construction.
25. Maya borrowed ` 12,000/- from Arya at 6% per annum simple interest for 2 years. Had Maya borrowed this sum at 6% per annum compound interest, what should she pay?
26. Using identities, evaluate a) $78 \times 82$ b) $103 \times 98$
27. a ) Find the least 4 - digit number which is a perfect square.
    b) Find the square root of 62.41.
28. Milk powder is available in two packs.
    a) A paper packet with rectangular base of length 5cm, width 4cm and height 15cm.
    b) A plastic cylinder with circular base of diameter 7cm and height 10cm.
    Which container has greater capacity? Which one will you prefer? Why?
29. a) Simplify. $\frac{2^{-1} \times 4^{-1}}{2^{-2}}$
    b) Express 0.0000045 in standard form.
    c) Express $5.8 \times 10^2$ in usual form.
30. Find and correct the errors in the following mathematical statements.
    a) $(3x + 2)^2 = 3x^2 + 6x + 4$
    b) Substituting $X = -3$ in $x^2 - 5x + 4$ gives
    $(-3)^2 - 5(-3) + 4 = 9 - 15 + 4 = -2$