AP SUPER GURU MODEL TEST PAPER – 3

MATHEMATICS (UNSOLVED)

Time Allowed : 3 Hours   CLASS – VIII   Maximum Marks : 80

NOTE

1. All the questions are compulsory.
2. In **Part – A** there will be Q.No. 1 to 3.
   - (i) Question No. **1** have 16 questions of Multiple Choice of **one** mark each.
   - (ii) Question No. **2** have 7 questions of Fill in the Blanks of **one** mark each.
   - (iii) Question No. **3** have 7 questions of True/False of **one** mark each.
3. **Part – B** have questions from No. 4 to 7 each of **two** marks.
4. **Part – C** have questions from No. 8 to 13 each of **four** marks and there is internal choice in question number **8, 11** and **12**.
5. **Part – D** have questions from No. **14** to **16** each of **six** marks and there is internal choice of all questions.

PART – A

Note : Each question is of 1-1 mark in this part :

1. **Choose the right option from the following questions :**

(i) Which of the following is not true for rational numbers x, y and z ?

    (a) $x \times y = y \times x$ (b) $x \times (y - z) = x \times y - x \times z$

    (c) $x - y = y - x$ (d) $x \times (y \times z) = (x \times y) \times z$

(ii) Which of the following number is a multiplicative inverse of itself ?

    (a) 0   (b) –1   (c) 1   (d) Both (b) and (c)

(iii) If present age of Ram is x years then what will be his age after 5 years ?

    (a) $(x + 5)$ years   (b) $(x - 5)$ years

    (c) $5x$ years   (d) None of these

(iv) What is the sum of adjacent angles of a parallelogram ?
    (a) 90°   (b) 180°
    (c) 360°   (d) None of these

(v) How many zeroes are there in the square of 600 ?
    (a) 1   (b) 2   (c) 3   (d) 4
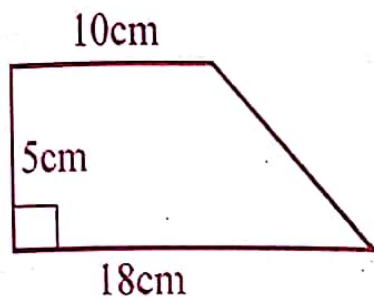
(vi) What is the value of $(1111)^2$?
    (a) 1232132   (b) 1223312   (c) 1234321   (d) 1233223

(vii) What is the unit digit number of $(1823)^3$?

    (a) 9   (b) 7   (c) 6   (d) 3

(viii) Discount is given on which of the following item ?

    (a) M.P.   (b) C.P.

    (c) S.P.   (d) All of these

(ix) What will be the area of a rectangle whose sides are 2ab and 3bc ?

    (a) 6 abc   (b) $6ab^2c$ (c) $6a^2bc$ (d) $6abc^2$

(x) What is the area of figure given below ?

10cm

5cm

18cm

    (a) $90 \ cm^2$ (b) $180 \ cm^2$ (c) $70 \ cm^2$ (d) $120 \ cm^2$

(xi) Which of the following is the formula used to find the curved surface area of a cylinder ?

    (a) $\pi r^2 h$ (b) $\pi r l$ (c) $\pi r h^2$ (d) $2\pi r h$

(xii) If $5^{2x-1} = 5^5$ then what is the value of x ?

    (a) 3   (b) 4   (c) 5   (d) 6

(xiii) What is the standard form of 0.00001225 ?

    (a) 1.225×10^5 (b) 1.225×10^{-5}

    (c) 1.22×10^{-5} (d) 122.5×10^{-7}

(xiv) $p^2 - pq + pr - qr$ is equal to ....

    (a) $(p-r)(p+q)$ (b) $(p+r)(q-p)$

    (c) $(p+r)(p-q)$ (d) $(p-q)(r-p)$

(xv) $4p^2 - 20pq + 25 q^2 = $ ....

    (a) $(4p-5q)^2$ (b) $(4q-25p)^2$

    (c) $(2q-5p)^2$ (d) $(2p-5q)^2$

(xvi) Which of the following points lies on y-axis ?

    (a) (0, 3)   (b) (1, 2)   (c) (2, 3)   (d) (4, 0)

2. **Fill in the blanks.**

    (i) Diagonals of a rhombus .... each other.

    (ii) In class interval, smaller value is called .... class limit.

    (iii) Unit place digit in $(1687)^2$ is ....

    (iv) $7^2 - 6^2 = $ ....

    (v) Amount – Principal = ...

    (vi) $3^7 \div 3^8 = $ ....

    (vii) .... is the ordinate of point (7, 4).

3. **True/False.**

(i) $5y - 3 = 8y$ is a linear equation in two variables.   (True/False)

(ii) Diagonals of a square bisects each other at $90°$.   (True/False)

(iii) 40 is the upper limit of class interval $40 - 60$.   (True/False)

(iv) Product of two monomials is a binomial.   (True/False)

(v) πr^2 is the area of base of a cylinder.   (True/False)

(vi) If 'x' and 'y' are in direct proportion then $\dfrac{x}{y} = K$.   (True/False)

(vii) $(x^2 - 8x - 20)^2 \div (x - 10)^2 = (x - 2)$.   (True/False)

$$\boxed{\text{PART} - \text{B}}$$

Note : This part has questions of 2-2 mark :

4. If $x = \dfrac{7}{15}$ and $y = \dfrac{-3}{10}$ then prove that $x - y \neq y - x$.

5. Find the least number that must be added to 5615 so that it becomes a perfect square. Also find the square root of the number so obtained.

6. By using a suitable identity find the value of $20^3 - 19^3$.

7. Find the value of $\left[\dfrac{1}{3}\right]^{-2} + \left[\dfrac{1}{4}\right]^{-2} + \left[\dfrac{1}{5}\right]^{-2}$

PART – C

Note : This part has questions of 4-4 mark :

8. Solve the following $\left[\dfrac{3a-2}{4}\right] - \dfrac{2a+3}{3} = \dfrac{2}{3} - a$

9. In the given figure RACE is a rectangle. Find the value of x, y and z.
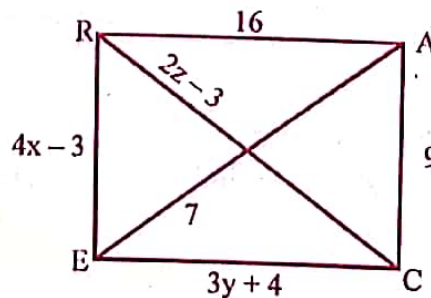
Or

If the ratio of adjacent angles of a rhombus is $4 : 5$ then find all the angles of rhombus.

10. Solve the expression and find its value by taking $y = -3$, $2y(3y-7) - 2(y+4) + 5$.

Or

By using suitable identity find the value of $(99)^2$.

11. If 6 pipes are required to fill a tank in 1h 20 mins then how long will it take if only 5 pipes of the same type are used?

12. Factorised the following $9p^2 - 24p + 16$.

13. Draw the graph of given frequency chart.

Side of square (in cms)	3	4	5	6	7	8
Perimeter of Square (in cms)	12	16	20	24	28	32

Is it a linear graph?

Or

During holidays time of watching T.V. Per day by students of a particular class is shown by the given graph. Answer the following questions.
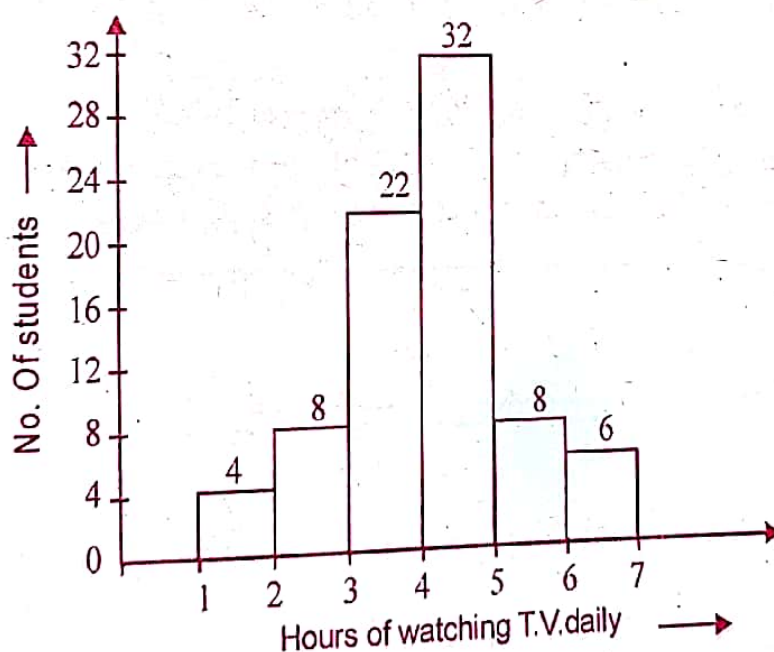
(i) How much time the T.V. is seen by maximum students ?

(ii) How many students have seen the T.V. more than 4 hours ?

(iii) How many students spent more than 5 hours in watching T.V.

PART – D

Note : This part has questions of 6-6 mark.

14. The marks obtained by 40 students of class VIII in Mathematics test are given below :
18, 12, 8, 6, 8, 5, 16, 23, 12, 2, 16, 2, 23, 10, 9, 20, 12, 5, 3, 5, 6, 7, 15, 21, 13, 13, 20, 7, 1, 21, 24, 16, 23, 18, 13, 18, 3, 7, 16, 17.

Represent the data in the form of a frequency distribution using classes 15-20, 20-25 and so on.

Or

The following histogram depicts the marks obtained by 46 students of class. Observe the histogram and answer the following questions.
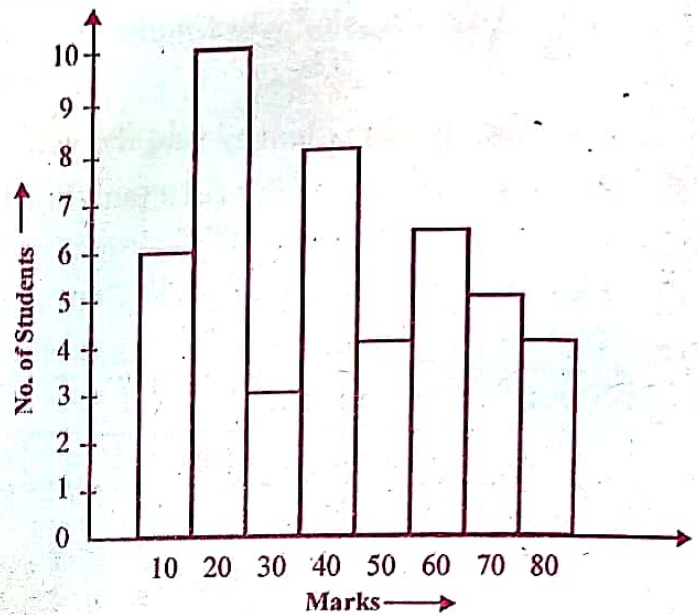
(i)   What is the class size ?

(ii) How many students obtained less than 20 marks.

(iii) How many students obtained 30 or more marks but less than 60 marks ?

(iv) If passing marks are 30. What is the number of failures ?

15. In what time Rs. 1600 will amount to Rs. 1760 at rate 5% per annum simple interest.

Or

Find the compound interest on Rs. 14,000 for 2 years at 10% per annum compound annually.

16. The shape of a garden is rectangular in the middle and semicircular at the ends as shown in the figure given below. Find the area and perimeter of the garden.

14 M   14 M   30 M
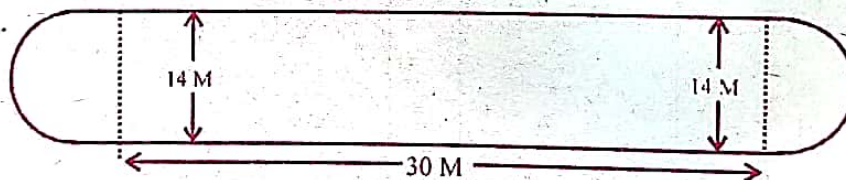
Or

Find the height of the cylinder whose volume is 1.54m^3 and whose diameter of the base is 140cm.

Answers of Multiple Choice Questions

1. (i) (a), (ii) (d), (iii) (a), (iv) (b), (v) (d), (vi) (c), (vii) (b), (viii) (a), (ix) (b), (x) (c), (xi) (d), (xii) (a), (xiii) (b), (xiv) (c), (xv) (d), (xvi) (a)

2. (i) Bisects, (ii) lower, (iii) 9 , (iv) 127, (v) Compound, (vi) 3^{-1}, (vii) 4.

3. (i) False, (ii) True, (iii) False, (iv) False, (v) True, (vi) False, (vii) False l