Mathematics

Date: **Class: VII**

Time: 3 hrs **M. M: 90**

General Instructions:

1. *Read the question paper carefully and answer legibly.*
2. *All questions are compulsory.*
3. *The question paper consist of 31 questions divided into four sections A,B,C and D*
4. *Section A comprises of 4 questions of 1 mark each, section B comprises of 6 questions of 2 marks each, Section C comprises of 10 questions of 3 marks each and Section D comprises of 11 questions of 4 marks each*
5. *Use of calculators is not permitted.*

Section – A

Q1. Frame the algebraic expressions for the following: 1
Product of numbers y and z subtracted from 20.

Q2. Find the probability of choosing a vowel from the alphabets? 1

Q3. Express $\frac{3}{40}$ as percentage. 1

Q4. Find the area of a parallelogram whose base is 18.5cm and the corresponding height is 10cm. 1

Section – B

Q5. Find the whole quantity if 30% of it is 450m. 2

Q6. Construct an equilateral triangle of side 4.5cm. 2

Q7. Find the mean of first eight prime numbers. 2

Q8. Find the area of a square field whose perimeter is 320m. 2

Q9. Subtract $5y^2x$ from $-3y^2x$. 2

Q10. Is it possible to construct a triangle with sides 3cm, 4 cm and 6cm. Justify your answer. 2

Section – C

Q11. Two sides of rectangle are $7x - 10$ and $x - 6$. Find its perimeter. 3

Q12. What must be subtracted from $5x^3 - 2x^2 + 6x + 7$ to get $x^3 + 3x^2 - x + 1$? 3

Q13. A person saves 15% of his salary. If his salary is Rs. 20000, find his expenditure. 3

Q14. The runs scored in a cricket match by 11 players are: 3
90,40,30,110,80,20,30,15,30,10,8
Find the median and mode of this data. Are they same?

Q15. A shopkeeper sold a TV for Rs 15000 making a profit of 25%. Find the CP of the TV. 3

Q16. Construct a triangle MNO in which $\angle M = 60^o$, $\angle N = 60^o$ and MO = 5.5cm 3

Q17. If $A = 3x^2 - 7x + 8$, $B = x^2 + 8x - 3$ and $C = 5x^2 - 3x + 2$, find $B - C - A$. 3

Q18. The excise duty on a certain item has been reduced to Rs 3480 from Rs. 5220. Find the percentage reduction in the excise duty of an item. 3

Q19. Draw a line AB. Take a point C outside it. Through C, draw a line parallel to AB using ruler and compass only. 3

Q20. Find the height of a triangle whose area is 65 sq.cm and whose base is 13cm. 3

Section – D

Q21. If Rs. 250 is to be divided amongst A, B and C, so that A gets two parts, B three parts and C five parts. How much money will each get? What will it be in percentages? 4

Q22. The number of girls and boys of the various clubs of a school are given below: 4

Name of the club	Debate	Maths	Music	Dance	Theatre
Girls	35	20	50	40	45
Boys	25	15	70	35	45

Draw the double bar graph of the given information.

Q23. Construct an isosceles right triangle POR in which $\angle R = 90^o$ and PR = OR = 5cm. . Find the measure of the remaining two angles? 4

Q24. a) Find the value of $m + 5(n - 3) + 4$ if $m = -3$ and $n = 2$. 4
b) Find the value of t if $3t + 9 = -5$

Q25. From the sum of $(2p^2 + 3pq)$ and $(- p^2 - pq - q^2)$ subtract the sum of $(3p^2 - q^2)$ and $(- p^2 + pq + q^2)$. 4

Q26. Two cross roads each of 3 metres wide, run at right angles through the centre of a rectangular park 62m by 42m such that each is parallel to one of the sides of the rectangle. Find the area of roads. Find the cost of constructing the cross roads at a rate of Rs 8 per sq. m? 4

Q27. In a garden the ratio of the area of lawn to the area of flower bed is 12:5. If the total area $357m^2$, find the area of : a) the lawn b) the flower bed

Q28. A circle of radius 2cm is cut out from a square piece of aluminum sheet of side 6cm. What is the area of left over aluminum sheet? (Take $\pi = 3.14$) 4

Q29. Find the perimeter of the rectangle whose length is 40cm and a diagonal is 41cm? 4

Q30. ABCD is a quadrilateral. Diagonals AC and BD bisect at O. Prove that $AB+BC+CD+DA>AC+BD$. 4

Q31. A bank gives home loan at a rate of 9 % per annum. But Sahil borrowed a sum of money at the rate of 10% per annum from his friend Rohan. If he paid Rs. 1866 as interest for 2 years. Find the sum. If he borrow the same aount from the bank, also find the interest he would have paid to the bank after 2 years. What do you think about Sahil's decision of taking the loan from his friend and not from the bank? 3 + 1