PRUDENCE SCHOOL, DWARKA 16B
HALF YEARLY EXAMINATION
SESSION 2024-25

SUBJECT: MATHEMATICS
CLASS:VIII SECTION: B

Name of the Student: **Max. Marks: 70**

Day& Date: **Duration: 3 Hrs.**

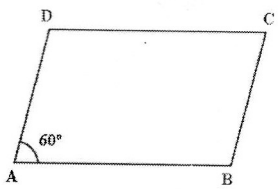
General Instructions:
- *The question paper consists of 4 pages and 35 questions.*
- *Read the questions carefully and answer them accordingly.*
- *It is compulsory to attempt all questions.*

SECTION A (20)

Q1. $4x = 6x + 8$ value of x in the given equation is 1

a. 4 b. -4 c. 2 d. -2

Q2 ABCD is a parallelogram with $\angle A = 60°$. Measure of $\angle C$ = 1



a. 40° b. 80° c. 120° d. 60°

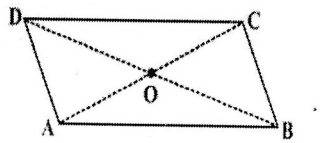
Q3. There are _____ rational numbers between any two given rational numbers. 1

a. Infinite b. 0 c. 1 d. 10

Q4. Diagonals of a parallelogram are perpendicular bisectors 1

a. always b. sometimes c. never d. not have enough information to conclude

Q5. Fill in the blank with the correct option and support it with appropriate reason. 1



Given a parallelogram ABCD. Complete the statement

$\angle DAB + \angle CDA =$ _____.

a. 180° as opposite angles are equal in a parallelogram

b. 180° as adjacent angles are supplementary in a parallelogram

c. 360° as angles are forming linear pair

d. 360° as $\angle DAB = \angle CDA$

Q6. Two adjacent angles of a rhombus have equal measure. Measure of each of the angle of the rhombus is 1

a. 40° b. 60° c. 90° d. 180°

Q7. Given below are two statements, one labeled as Assertion (A) and other labeled s (R) : Which of the following is correct? 1

Assertion (A): Pie chart is represented as the percentage of the given data.

Reason (R): Pie chart is constructed using the percentage itself.

a. Both (A) and (R) are true and (R) is the correct explanation of (A).

b. Both (A) and (R) are true but (R) is not the correct explanation of (A).

c. (A) is true but (R) is false.

d. (A) is false but (R) is true.

Q8. Amount on ₹10,000 at 10% per annum compounded annually for 2 years is 1

a. ₹12100 b.₹ 20000 c. ₹21000 d. ₹21500

Q9. Square of which among the following will end with the digit 1? 1

a. 34^2 b. 26^2 c. 33^2 d. 59^2

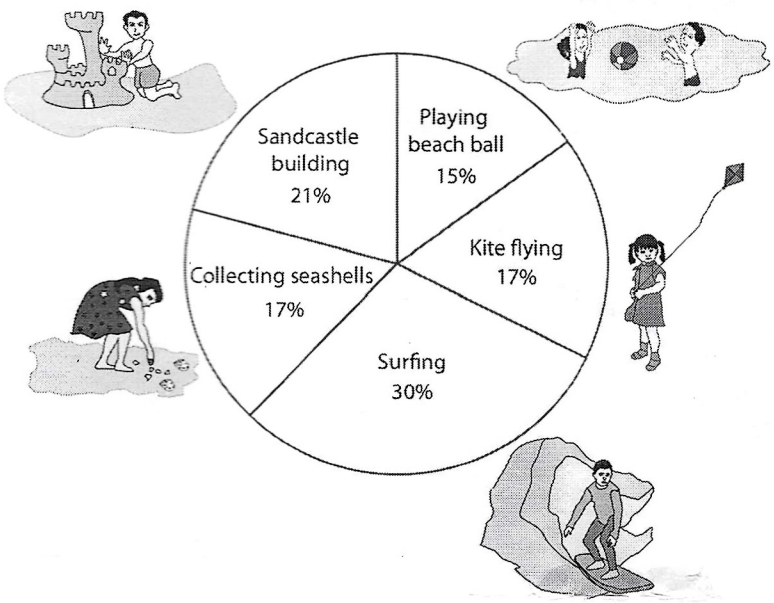
Q10. Which of the following is a square of an even number? 1

a. 169 b. 361 c. 729 d. 484

Q11. How many numbers lie between the squares of 15 and 16? 1

a. 30 b. 31 c. 15 d. 16

Q12. On the basis of the following pie chart, answer the following question: 1



If there was a total of 200 people surveyed for this data, what number of people like to fly kites?

a. 34% b. 17% c. 17 d. 34

Q13. The greatest 3 digit number which is a perfect square is 1

a. 961 b. 999 c. 100 d. 996

Q14. Consider the following pattern and identify the next one 1

$25^2 = (2 \times 3)\text{hundreds} + 25$

$35^2 = (3 \times 4)\text{hundreds} + 25$

$45^2 = (4 \times 5)\text{hundreds} + 25$

$55^2 =$ _____

a. $(5 \times 6)\text{hundreds} + 25$

b. $(6 \times 7)\text{hundreds} + 25$

c. $(5 \times 6)\text{hundreds} + 20$

d. None of the above

Q15. The one's digit of the cube of 5022 is 1

a. 0 b. 2 c. 8 d. 44

Q16. 4:5 converted in percentage is 1

a. 60% b. 80% c. 75% d. 14%

Q17. 70% of 70 students like to do swimming, How many students do not like swimming? 1

a. 30 b. 21 c.40 d. 70

Q18. The smallest number by which 108 must be divided to make it a perfect cube is 1

a. 2 b.4 c. 6 d. 8

Q19. How many sides does a regular polygon have if each of its interior angle is 135° 1

a. 7 sides b. 8 sides c. 9 sides d. 10 sides

Q20. In the given Pythagorean triplets, the three sides are of the measure $2m$, m^2+1, m^2-1. The hypotenuse from the three sides is **1**

a. $2m$ b. m^2+1 c. m^2-1 d. m^2+1-2m

SECTION B (8)

Q21. Simplify and solve **2**

$0.2(10x-30) = 0.05\,(100x+40)$

Q22. Explain how Rectangle is a Parallelogram and a Trapezium **2**

Q23. Find the smallest square number that is divisible by each of the number 6, 5 and 12. **2**

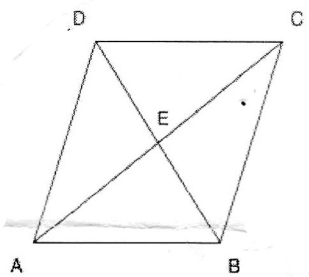
Q24. Vijay bought a pair of shoes at a sale where the discount given was 10%. If the amount he pays is ₹1800, find the marked price. **2**

SECTION C (15)

Q25. Solve using suitable properties:

$$\left[\frac{9}{16}\times\frac{4}{12}\right]+\frac{5}{15}+\left[\frac{9}{16}\times\frac{-3}{9}\right]$$

Q26. ABCD is a rhombus with the measurements of AE= 11 cm and BE= 7 cm. Find the measure of DE, EC and ∠DEC. Support your answer with suitable reasons. **3**



Q27. Find the Pythagorean triplet if the second longest side of the triplet family is 35cm. **3**

Q28. Find the square root of 17.64. **3**

Q29. Is 1323 a perfect cube? If not then find the smallest natural number by which it should be multiplied so that the product is a perfect cube. Find the cube root of the new number so obtained. **3**

SECTION D (12)

Q30. Meghna wants to buy a plot for constructing her house. The property dealer showed her two square plots. Plot I had area as 2704 m^2. Plot II had the side of measurement 48 m. Find the following questions based on the above information: **(4)**

a. Find the side of Plot I **2**

b. Find the area of Plot II. **1**

c. Which plot has greater area? **1**

Q31. Renuka is a regular visitor to a grocery store. She purchases grocery for the entire week on Saturdays. This Saturday she spent ₹4800 which included GST of 20%. Based on the above information, answer the following: **(4)**

a. What is the full form of GST? **1**

b. What was the price of grocery before GST? **2**

c. What amount of GST was charged? **1**

Q32. Population of a city was 40,000 in the year 2024. After a survey it was found that the population of the city is increasing 10% every year. **(4)**

a. To calculate the increase in population after 3 years, which formula will be more suitable- Simple Interest or Compound Interest? **1**

b. Mention the formula of calculating Amount through Simple Interest and Compound Interest. **2**

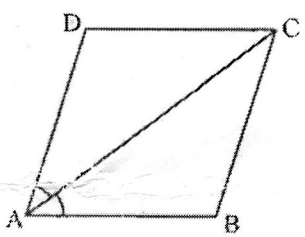
c. Calculate the population of the city after 3 years. **1**

SECTION E

Q33. Perfumes of the following brands are sold in September 2024 at a perfume store. Construct a pie chart for the given data: **5**

Brand	Number of pair of shoes sold
A	420
B	300
C	225
D	105
E	30

Q34. a. ABCD is a parallelogram with AC as the diagonal. If $\angle DAC = 30^\circ$ and $\angle ABC = 120^\circ$, find $\angle ACD$ and $\angle ADC$. **2**



b. Find the value of x in **3**

$$\frac{6x+1}{3} = \frac{x-3}{6}$$

Q35. There were 1420 chairs in a banquet hall. They were to be arranged in a way that the number of rows and the number of columns remain same. Find the minimum number of more chairs that will be required to make such an arrangement. **5**

Also find out the number of rows/ columns that can be made among with the additional chairs.