Time: 2:30 hours   M.M:60
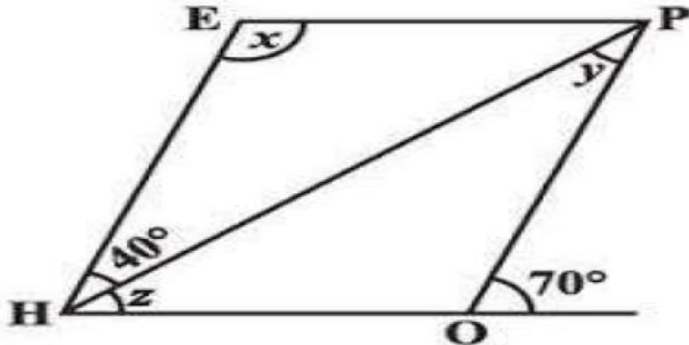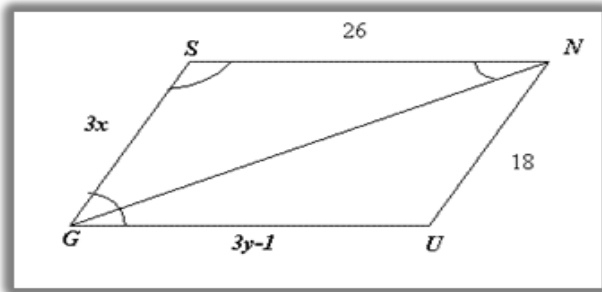
General Instructions:

1. *All Questions are compulsory.*

2. *The Question paper consists of 28 Questions divided into five sections A, B, C ,D and E.*

3. *Section – A contains 14 Questions of 1 marks each, Section- B contains 4 questions of 2 marks each, Section –C contains 5 questions of 3 marks each, Section – D contains 3 questions of 5 marks each, Section E has 2 case study based questions.*

	SECTION -A	
Q.1	The product of a rational number and its reciprocal is (a) 0 (b) 1 (c) – 1 (d) None of these	1
Q.2	The ratio of 5 Km to 10 m is (a) 1 : 2 (b) 2 : 1 (c) 500 : 1 (d) 5000 : 1	1
Q.3	Which of the following numbers are not perfect cubes? (a) 216 (b) 128 (c) 729 (d) 1000	1
Q.4	Number of sides of a regular polygon with each of its exterior angle $36^0$is	1

	(a) 8 (b) 9 (c) 10 (d)11	
Q.5	Sum of two numbers is 95. If one exceeds the other by 15, find the numbers. (a) 55, 35 (b) 50, 45 (c) 40, 25 (d) none of these	1
Q.6	In a computer lab, there are 3 computers for every 6 students. How many computers will be needed for 24 students? (a) 12 (b) 14 (c) 16 (d) none of these	1
Q.7	A glass jar contains 6 red, 5 green, 4 blue and 5 yellow marbles of the same size. Hari takes out a marble from the jar at random. What is the probability that the chosen marble is of red color? (a) 0.7 (b) 0.3 (c) 0.8 (d) 0.4	1
Q.8	How many natural numbers lie between 5^2 and 6^2 ? (a) 9 (b) 10 (c) 11 (d) 12	1
Q.9	Find the square root of 6400 a) 8 b)80 c)800 d) none of these	1
Q.10	How many diagonals does a quadrilateral have ? a) 2 b) 3 c)4 d) none of these	1
Q.11	The original price of a smart watch which was bought for Rs 1296 including of 8% GST is (a) Rs 1200 (b) Rs1396 (c) Rs 1400 (d) Rs 1100	1
Q.12	How many sides does a regular polygon have if the measure of an exterior angle is 24^0 (a) 12 (b) 13 (c) 14 (d) 15	1
Q.13	Write correct equation for this statement – Product of x and 4/7 is 8/3	1

	a) x. (4/7) = (8/3) b) x+ (4/3)= 3/8 c) x+ (4/3)= 3/8 d) x- (4/3) = 3/8	
Q.14	Find value of x if $3x = 2x + 10$ (a)10 b)-10 c)8/3 d)none of these	1
	SECTION -B	
Q.15	Solve: $3x - 1 = 2x + 17$	2
Q.16	Write a Pythagorean triplet whose one number is 8.	2
Q.17	Find the cube root of 125 by the Prime Factorization Method.	2
Q.18	A group of 360 people were asked to vote for their favorite season from the three seasons rainy, winter and summer. <table><tr><td>Season</td><td>No. of Votes</td></tr><tr><td>Summer</td><td>90</td></tr><tr><td>Rainy</td><td>120</td></tr><tr><td>Winter</td><td>150</td></tr></table> (i) Which season got the most votes? (ii) Find the central angle of the winter season.	2
	SECTION -C	
Q 19	Simplify and solve the following equation	3

	15(y − 4) − 2(y − 9) + 5(y + 6) = 0	
Q 20	The favorite flavors of ice-creams for students of a school is given in percentages as follows.Draw a pie chart to show this information <table><tr><td>Flavors</td><td>Percentage of students preferring the flavors</td></tr><tr><td>Chocolate</td><td>50%</td></tr><tr><td>Vanilla</td><td>25%</td></tr><tr><td>Other flavors</td><td>25%</td></tr></table>	3
Q21	Compare the simple and compound interest for an investment of Rs 3000 at a 4% annual interest rate over 2 years.	3
Q 22	By what smallest number should 3600 be multiplied so that the quotient is a perfect cube. Also find the cube root of the quotient	3
Q 23	Maria invested Rs. 8,000 in a business. She would be paid interest at 5% per annum Compounded annually. Find the amount and C.I. after 3 years.	3
	SECTION -D	
Q24	i)The adjacent figure HOPE is a parallelogram. Find the angle measures x, y and z. State the properties you use to find them. ii)The adjoining figure GUNS is a parallelograms. Find x and y. (Lengths are in cm)	5

Q25	Cards marked with numbers 1 to 25 are placed in the box and mixed thoroughly. One card is drawn at random from the box. Answer the following questions. (a) What is the probability of getting a number 5 ? (b) What is the probability of getting a number less than 11 ? (c) What is the probability of getting a multiple of 5 ? (d) What is the probability of getting an even number ? (e) What is the probability of getting a prime number ?	5
26	i)Find the smallest whole number by which 1008 should be divided, to get a perfect square number. ii)A king wanted to reward his advisor, a wise man of the kingdom. So, he asked the wiseman to name his own reward. The wiseman thanked the king but said that he would ask only for some gold coins each day for a month. The coins were to be counted out in a pattern of one coin for the first day, 3 coins for the second day, 5 coins for the third day and so on for 30 days. Without making calculations, find how many coins will the advisor get in that month?	5
	SECTION -E	

Q27	Three friends Ram, Rahim and David went to —RADHEY SWEET MART‖ to purchase some sweets, namkin and cold drinks for New year party. The following chart shows the price and available stock of sweets and namkeen in the shop.	4

S.NO.	SWEETS AND NAMKEEN AVAILABLE	STOCK	PRICE
1	SWEET LADDU	10 Kg	Rs. 400 per Kg
2	JALEBI	8 Kg	Rs. 360 per Kg
3	BARFI	7 Kg	Rs. 300 per Kg
4	MIX-NAMKEEN	100 packets	Rs. 80 per packet
5	POTATO CHIPS	80 packets	Rs. 30 per packet
6	COLD DRINKS	50 Bottles	Rs. 50 per bottle
7	ROASTED DRY FRUITS	12 Kg	Rs. 1000 per Kg

i): After purchasing 500 gm of sweet laddu, jalebi and barfi each, Ram had Rs. 150 left with him. How much money did Ram have before the purchase?

ii):Ram wants to purchase one packet of Mix-Namkeen and two packets of potato chips with the remaining Rs. 150. Explain whether he can purchase it or not.

iii): Rahim has Rs. 200 and wants to purchase one packet of Mix-Namkeen, one packet of potato chips, 250gm Sweet laddu and one bottle of cold drink. But due to insufficient money he had to reduce the quantity of one of the items. Find out the name of that item along with a reason.

Q28	Raghav took a loan of Rs 8,000 from the bank at a simple interest rate of 5% per annum for two years, and he has to pay back the total amount at the end of two years. Answer the following questions based on the case study: i). What is the total amount Ragav has to pay back after two years? ii). What is the interest money that Ragav has to pay? iii). What would be the interest amount if Raghav had borrowed the same amount at a rate of 7% per annum? iv). What would be the total amount due if Raghav borrowed Rs 10,000 at the same 5% per annum simple interest rate for three years?	4